BEFORE THE CANTERBURY REGIONAL COUNCIL


AND

IN THE MATTER OF: a submission on the Proposed Canterbury Land and Water Regional Plan

LEGAL SUBMISSIONS FOR THE DIRECTOR-GENERAL OF CONSERVATION

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LEGAL SUBMISSIONS

OVERVIEW

1. These legal submissions are organised under 7 headings, covering the following matters:
   ▶ The nutrient management provisions and, in particular:
     ▶ Policy A1(b) of the National Policy Statement: Freshwater Management 2011 (NSPFM),
     ▶ Section 70(1)(g) of the Resource Management Act 1991 (RMA); and
     ▶ Section 5 of the RMA.
   ▶ The provisions regarding stockholding areas and animal effluent discharges, the focus there on technical drafting issues which relate to those rules.
   ▶ The silage pit and compost rules, in particular the overlaps with other waste discharge provisions
   ▶ The rules regarding livestock exclusion from wetlands;
   ▶ The fertiliser discharge rules and the way that intermittently flowing waterbodies are dealt with.
   ▶ Vertebrate toxic agents and the rule making discharges of these products from aircraft a controlled activity.
   ▶ The agrichemical discharge rules, in particular, the activity status of certain types of agrichemical discharge.

NUTRIENT DISCHARGE PROVISIONS

2. The Director-General’s original submission addressed the nutrient management provisions in the proposed Canterbury Land and Water Regional Plan (pCLWRP). It emphasised that the suite of nutrient rules must meet the permitted activity tests laid down by section 70 of the RMA.¹

3. The Director-General also made further submissions in support (or in partial support) of a number of other submitters.² In addition, The Director-General lodged expert planning evidence from Pamela Guest regarding this topic³.

² As to the Nutrient Management Policies - Director-General of Conservation: Further Submissions on the Canterbury Land and Water Regional Plan, dated 20 December 2012. At p 5 in partial support of Fish and Game's revised policies described on pages
4. The Director-General shares the concerns of other submitters that the proposed provisions do not meet the statutory tests laid down by the RMA and will not achieve sustainable management of Canterbury’s waterbodies.

5. Fish and Game, in particular, has presented a comprehensive alternative suite of nutrient management provisions. Counsel for Fish and Game explained the legal rationale for seeking to substitute the Regional Council’s provisions for those promulgated by Fish and Game.

6. I will not reiterate the points made by counsel for Fish and Game regarding the legal difficulties in Environment Canterbury’s (ECan’s) approaches to nutrient management. Instead, I intend to confine my discussion to a few discrete points:

➢ Policy A1(b) of the NPSFM
➢ Section 70 (1)(g) RMA
➢ Section 5 RMA

**Policy A1(b) of the NPSFM**

7. My legal submissions for Hearing Group 1 addressed, in some detail, the requirements of Policy A1 of the NPSFM and the obligations on regional councils with respect to water quality. I explained that Policy A1 requires ECan to do three things:

➢ establish freshwater quality objectives for all waterbodies in Canterbury;
➢ establish freshwater quality limits for all waterbodies in Canterbury; and
➢ establish methods (including rules) to avoid over-allocation.

8. The precise wording of Policy A1 is as follows:

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40-45 of their original submission. At p6 in partial support of the Environmental Defense Society’s original submission regarding policies 4.29-4.30, 4.31, 4.33-4.35. On page 6 in support of Fonterra’s original submission point at their page 16, point (iv)(b). At page 6 in support of Rangitata Diversion Race Management Limited’s original submission on their page 1 regarding Policy 4.34 regarding nutrient trading.

As to the Nutrient Management Rules: Director-General of Conservation: Further Submissions on the Canterbury Land and Water Regional Plan, dated 20 December 2012. At p 9 in partial support of Fish and Game’s revised rules 5.39-5.51 described on pages 66-68 of their original submission. On pages 9 and 10 in partial support of the Environmental Defense Society’s original submission regarding Farming Rules 5.39-5.45 and in support of the Environmental Defense Society’s original submission regarding Farming Rules 5.39, 5.40 and 5.42. On page 9 in partial support of Rangitata Diversion Race Management Limited’s original submission regarding rules 5.39-5.51 on pages 21-22 of their original submission. At page 10 point at their page 16

Ms Pamela Guest: Evidence in Chief, dated 2 April 2013.
"Policy A1

By every regional council making or changing regional plans to the extent needed to ensure the plans:

a. establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:

(i) the reasonably foreseeable impacts of climate change
(ii) the connection between water bodies

(b) establish methods (including rules) to avoid over-allocation."

9. Policies A1, A2 and E are also reproduced in full in my Appendix 1.

10. My earlier legal submissions focussed on the requirements of Policy A1(a) above. I concluded that the pCLWRP’s approach to the NPSFM is beset by legal difficulties sufficiently serious to mean that the Plan does not fully comply with this National Policy Statement. In particular:

➤ Adequate water quality objectives for all Canterbury waterbodies are not offered by the proposed Plan;
➤ Water quality limits for all Canterbury waterbodies are not set by the proposed Plan; and
➤ ECan did not elect to follow a staged implementation approach to the creation of freshwater quality outcomes nor freshwater quality limits. In light of that, the Regional Council must have in place water quality objectives and limits for all waterbodies no later than December 2014.

11. Those earlier submissions did not address the requirement of Policy A1(b). I shall do so now.

12. Policy A1(b) requires that the Regional Council ensure that its plan establishes methods, including rules, to avoid over-allocation.

13. "Over-allocation" is defined in the NPSFM as:

"Over-allocation is the situation where the resource:

(a) has been allocated to users beyond a limit; or
(b) is being used to a point where a freshwater objective is no longer being met.

This applies to both water quantity and quality".

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The Implementation Guide for the NPSFM explains the purpose of Policy A1(b) as this:

"Policy A1 specifically refers to avoiding over-allocation. This can be done by setting limits in rules in regional plans. The fundamental purpose of a limit is to provide a clear indication of when over-allocation would occur. Because a limit is put in place to ensure a freshwater objective is achieved, where a limit is breached, over-allocation will be deemed to have occurred (whether or not that breach would have positive benefits, or not create adverse effects). Where resources are already over-allocated, local authorities will need to set a target to improve water quality (under Policy A2) until the over-allocation has been corrected. Over-allocation must be avoided, not just remedied or mitigated. Avoiding over-allocation will avoid cumulative effects on water quality." [My emphasis]

Policy A1(b) is distinguishable from the other water quality policies in the NPSFM. For instance, Policy A2 is concerned with managing water quality in bodies which are already over-allocated. Policy A1(b) is concerned with avoiding over-allocation in the first place.

For the reasons explained in paragraphs 28-32 of my earlier submissions, ECAn has not adopted a staged implementation approach to Policy A1(a) nor for A1(b). It could have done so but it did not. Accordingly, by December 2014 the Regional Council must ensure that its plan contains water quality limits, water quality objectives, and methods (including rules) which avoid over-allocation.

My earlier submissions also explained that page 108 of the Council’s Long Term Plan 2012-2022 makes clear that it is *this particular* plan which will deliver on the three obligations referred to above.

Simply, the rules or other methods in this Plan are the ones which must avoid over-allocation occurring.

The failure to comply with Policy A1(a) is problematic for reasons which I explored in my Hearing Group 1 legal submissions. However, the failure to satisfy A1(a) also has knock-on effects in terms of Policy A1(b) since the definition of "over-allocation" assumes that water quality limits and objectives have been established under Policy A1(a).
20. Failure to specify those limits and objectives means that the allocation status of individual waterbodies cannot be conclusively determined. Moreover, if one does not know what the tipping point is for over-allocation then one cannot assess whether the rules or methods in the plan will in fact avoid over-allocation occurring.

21. For the reasons explained at Hearing Group 1 the proposed Plan failed to set clear water quality limits and objectives, as required by Policy A1(a). Consequently, we can only speculate about which bodies are over-allocated and which are not. With that major deficiency noted, ECan staff have speculated about which bodies might be over-allocated, in terms of nutrients, and which might not. That work was performed by Dr Meredith and his colleagues at ECan. The findings are summarised by Dr Meredith in his memo dated 30 June 2012 which appears in Appendix 6 of the Section 32 Report. The analysis conducted by Dr Meredith and his colleagues also culminated in the nutrient zone map which appears on page 8, Section 4 of the pCLWRP.

22. Dr Meredith’s memo explains that an attempt was made to assess waterbodies against what are described as “quantitative” guidelines and models. The memo also explains that a number of numerical criteria were selected from three of the tables contained in the operative Regional Plan. Those Tables are located on pages 27, 29 and 271 in the Water Quality Chapter of the Natural Resources Regional Plan. For completeness’ sake I have reproduced the tables and have highlighted the tests which Dr Meredith specifically mentions in his memo. They appear in my Appendix 2.

23. Dr Meredith’s memo explains:

“Existing hydrology and water quality data were assessed at a number of sites to determine the status of the zone relative to the range of water quality guidelines and models (periphyton growths, macrophyte growths, nitrate toxicity targets, trophic state targets, etc.). These classified the majority of management units or zones into a single category ‘water quality outcomes not met’, implying that these catchments were significantly enriched. It was considered that this outcome was too conservative and unrealistic...Potentially, such a stringent classification would give little scope for reasonable further land use development.” [My emphasis]

24. We therefore know that applying a strict quantitative analysis resulted in the majority of the region being “over-allocated” for nutrients to use the terminology of the NPSFM. In response, ECan convened an expert panel to reassess individual waterbodies and decide, by expert consensus, whether they are over-allocated, at risk of becoming over-allocated or neither of those.
25. Other parties have criticised the methodology used by Dr Meredith and his colleagues and believe that, as a consequence, the nutrient allocation map may not accurately reflect the true state of affairs. I will not revisit those arguments here but I do invite you to note that the entire process of under-allocation/over-allocation analysis performed by Dr Meredith and his team sat outside the requirements of the NPSFM. I say this for two reasons: first, the work performed by Dr Meredith did not refer specifically to the criteria laid down in this particular Plan, for instance Table 1(a). Second, even if he had done so there are compelling reasons (discussed in legal submissions for Hearing 1) to conclude that those criteria, as they appear in the pCLWRP, are not in fact “limits” for the purposes of the NPSFM in any event.

26. In my submission the nutrient zone map is therefore best understood as an approximation of what might be discovered if the limits and objectives required by the NPSFM had actually been determined and spelled out in the pCLWRP.

27. This discussion therefore proceeds on the basis that the nutrient zone map may be indicative of (but certainly is not determinative of) nutrient over-allocation/under-allocation in the Region. We can only theorise about how the map might appear if and when objectives and limits are clearly laid down as required by the NPSFM. Until then it is impossible to know whether or not a body is over-allocated or not in the technical, NPSFM sense.

28. Relying then on the indicative nutrient zone map we are given to understand that large tracts of the Region are “over-allocated” and shown thus in red. The majority of what is left is coloured orange and described as “at risk” of becoming over-allocated in terms of nutrient contamination.

29. In order to satisfy Policy A1(b) the methods and rules in this Plan must avoid the areas which are not yet over-allocated from becoming so. That duty can, in my submission, be translated to mean that areas which are currently orange, green or blue must not be allowed to turn red.

30. The question is therefore: do the rules and other methods in the proposed Plan, or those recommended by the Section 42A Report, ensure that orange, blue and green zones will not become red zones? In my submission the rules and other methods fail to ensure that test is met. My reasons for this conclusion are set out below.

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7 Associate Professor Death: Evidence in Chief (Hearing Group 2) dated 2 April 2013, paragraphs 23 - 31
31. As Ms Guest points out there is no scientific analysis provided by the section 32 Report to predict what the likely outcomes might be of the pre-2017 or post-2017 nutrient rules. Notably though, on page 67 of that Report an attempt is made to assess the efficiency of ECan’s approach to nutrient management. In a table on that page the costs and benefits of the approach are weighed. In the column described as “costs” the Report notes that there is likely to be “...further decline is ground and surface water quality...” largely due to the lag time between implementation of the regime.

32. In my submission it is simply impossible to ensure that over-allocation will be avoided if no attempt has been made by the Council to predict the consequences of the plan’s rules and methods. The same criticism may be made of the strategy proposed by the Section 42A Report.

33. I am aware that at least one other scientist⁸ has undertaken some modelling work and has concluded that ECan’s proposed strategy will result in continued degradation of the waterbodies and, in the case of one orange zone which was modelled as an example, would result in it becoming over-allocated.

34. ECan’s failure to comprehensively analyse when and where water quality decline will happen and at what rate means it is far from clear when an orange zone (or part of an orange zone) might become red.

35. For completeness’ sake I acknowledge that there are “other” methods advanced in the Section 42A Report and in the notified version of the pCLWRP for managing nutrients.

36. For instance, recommended Policy 4.27A now says that the Council will engage in awareness raising, information gathering and encouragement of good practise.

37. Recommended Policy 4.27A also says: that limits based on good practice will be identified; and a Plan change will be promulgated to introduce those limits into Schedule 8 so that those limits will have effect from July 2017.

38. In essence, these ‘other methods’ are still intimately linked to the suite of nutrient rules offered by the Plan and would not, in themselves, provide an answer to the duty presented by Policy A1(b).

⁸ For example, Dr Cooke Evidence in Chief, 2 April 2013 at paragraphs 16 and 71, and Associate Professor Death: Evidence in Chief (Hearing Group 2) dated 2 April 2013, paragraphs 34-35.
The conclusions I invite you to reach are therefore these:

- Both solutions offered by ECan (in the notified plan and in the Section 42A Report) will lead to continued water quality degradation.
- Some waterbodies which are not presently over-allocated are likely to become so;
- Neither of ECan's approaches ensure that over-allocation will be avoided.
- The approaches therefore do not comply with, nor give effect to, A1(b) of the NPSFM as required by section 67(3)(a) RMA.
- ECan's decision not to implement a time-staged programme introducing Policy A1(b) means it must, prior to 31 December 2014, have in place rules or other methods which ensure that over-allocation is avoided.

If the Commissioners conclude, as I invite you to do, that Policy A1(b) is not met by the proposed Plan and nor by the Section 42A approach then those rules and methods cannot be allowed to remain. Rather, an alternative matrix of rules must be preferred which the Council is confident does guard against over-allocation.

The Director-General lends general support to the alternative set of rules presented by Fish and Game, because the evidence indicates that Fish and Game's approach would meet the requirements of the NPSFM.

Section 70 RMA

Section 70 presents a relatively discrete test: It is solely concerned with the activity status of discharge rules and, specifically, with permitted activity discharge rules.

Of special interest to the Director-General is the prohibition against creating permitted activity rules where doing so could lead to significant adverse impacts on aquatic life (section 70(1)(g)). In order for the Regional Council to adopt a permitted activity discharge rule it must first be "satisfied" that such an outcome is not "likely" to eventuate. This is the effect of section 70(1)(g):

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Dir. Gen. of Conservation: Further Submission, dated 20 December 2012, at page 5&6 in partial support of Fish and Game's revised policy regime regarding nutrient management. Also on page 9 in partial support of Fish and Game's revised rule regime described on pages 66-68 of its original submission. The Fish and Game approach better accords with the recommendations described by Pamela Guest in her Evidence in Chief, dated 2 April 2013, page 50 sub-paragraph (d).
"1. Before a regional council includes in a regional plan a rule that allows as a permitted activity —
(a) a discharge of a contaminant or water into water; or
(b) a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; —
the regional council shall be satisfied that none of the following effects are likely to arise in the receiving waters, after reasonable mixing, as a result of the discharge of the contaminant (either by itself or in combination with the same, similar, or other contaminants):
(c) the production of conspicuous oil or grease films, scums or foams, or floatable or suspended materials:
(d) any conspicuous change in the colour or visual clarity:
(e) any emission of objectionable odour:
(f) the rendering of fresh water unsuitable for consumption by farm animals:
(g) any significant adverse effects on aquatic life." [My emphasis]

44. Both the pCLWRP and the Section 42A Report contain land use rules dealing with farming activities plus discharge rules which operate together with those land-use rules. In both documents there are two discharge rules covering diffuse discharges associated with farming activities, one of those being the permitted activity Rule 5.50.

45. Over the course of these hearings experts have produced evidence which, they say, demonstrates that significant adverse effects will likely be visited upon aquatic life as a result of diffuse discharges being permitted by the rules. That is the evidence of Ms Guest\(^{10}\), Associate Professor Death\(^{11}\) and Mr Percy\(^{12}\).

46. The Section 32 Report makes no mention of section 70 in relation to nutrient discharges. It also does not analyse the permitted activity rule in 5.50 against the tests laid down by Section 70.

47. Although section 70 is referred to on three occasions\(^{13}\) in Part 9 (Nutrient Management) of the section 42A report, there is no analysis of how the recommended rules answer the tests.

48. In my submission you will need to form a view on two matters:

- First, on the likelihood of those adverse effects coming to pass; and,
- Second, on whether or not those adverse effects are "significant".

\(^{10}\) Pamela Guest: Evidence in Chief, dated 2 April 2013, at paragraphs 90-96.
\(^{11}\) Associate Professor Death: Evidence in chief (Hearing Group 2), dated 2 April 2013 at paragraph 22 reference is made to "significant adverse effects".
\(^{12}\) Phillip Percy: Evidence in Chief, (Hearing Group 2), dated 10 April 2013, at paragraph 51.
\(^{13}\) On page 88 and 110 when repeating the Director-General's submission that the nutrient policies and rules ought to be amended or retained to accord with section 70. On page 146 when repeating Fish and Game's submission that land use an ancillary discharge rules need to meet the requirements of section 70.
49. Regarding the first point, I submit that you need to be satisfied that the adverse effects are not likely to occur. The introduction of the word "likely" means, in my submission, that you are not being asked to consider solely those effects which are guaranteed to occur but also those where there is some uncertainty as to whether they may occur. I submit that the evidence before you, particularly that of Associate Professor Death, entitles you to reach a contrary conclusion.

50. As to the meaning of "satisfied" the following excerpts from Westfield (New Zealand) Limited v North Shore City Council\(^4\) may be of assistance. The case related to a consent authority's decision to notify a resource consent application for a discretionary activity. However, the Court goes on to make comments regarding the term "satisfied" and regarding the powers to permit contamination under section 70:

> [23] The requirement that the consent authority must be "satisfied" that adverse effects on the environment are minor before it decides not to notify a resource consent application for a discretionary activity is a significant obligation. By contrast, when a substantive decision is made on the application for resource consent for a discretionary activity under s 105, the consent authority is simply empowered to decide whether or not to grant the consent and on what conditions, after taking into account the considerations identified by the Act and in the context of the plan. Such decisions may be finely judged. That is not the approach required of the decision-maker by s 94(2) [now repealed]. The requirement that the consent authority be "satisfied" that adverse effects on the environment are minor is a pointer to additional conviction and the need for some caution.

> [24] That is borne out by the scheme of the Act. The statute requires a consent authority to be "satisfied" in cases where there is some departure from a general approach. Thus, powers to extend time limits for existing use rights, to depart from usual principles of natural justice or to permit contamination [footnote refers to section 70 and section 107] are all decisions that require the consent authority to be "satisfied" that the course is appropriate in the circumstances or that the adverse effects will not eventuate or will be minor." [My emphasis]

51. Regarding the second criterion, that the adverse effects be "significant", I note the following points.

\(^4\) *Westfield (New Zealand) Limited v North Shore City Council* [2005] 2 NZLR 597
52. The evidence before you is that significant adverse effects on aquatic life are already being experienced in many of the region’s waterbodies. That is clear from ECan’s own material, particularly the work performed by Meredith, Stevenson and Kelly which is summarised in their memo of 30 June 2012\(^\text{15}\). That is also the inevitable inference to be drawn from the red and orange zones created by Dr Meredith and his colleagues. It is also reinforced by the work of independent experts such as Associate Professor Death.

53. However, the proposed Plan’s approach largely maintains the status quo (on a permitted basis) for the next 4 years. As I noted earlier, doing so will actually result in a trend of further degradation. It is implicit in ECan’s approach that matters will be permitted to get worse in the short to medium/long term. However, at some point in the future the hope is that water quality degradation will be slowed and possibly reversed.

54. In turning your minds to the test in section 70(1)(g) you may be tempted to focus only on those significant adverse effects on aquatic life which are likely to be permanent or likely to be felt over the long-term while discounting those which might be reversed. In my submission section 70 does not invite such a simplistic approach.

55. Section 70 does not stipulate that only those adverse effects that are “irreversible” are to be given weight. The section could have done so but it did not.

56. Rather, Section 70 ought to be read in light of the definition of “effects” which is located in Section 3 RMA.

57. The Section 3 definition of “effects” is broad and it specifically includes those effects which are temporary. It also stipulates that an effect may be considered irrespective of its duration or its frequency. In other words, reversible adverse effects are relevant in any assessment of section 70 just as irreversible effects are.

58. I acknowledge that permanence/impermanence, reversibility/irreversibility may well be relevant when evaluating the degree of significance of a particular effect. However, in making that assessment as to a particular effect’s degree of significance I submit that the section 70 obligation needs to be viewed through the lens of precaution which is encapsulated in the meaning of “effect”. That is, if a permitted activity rule enables an adverse effect which is significant, it is not excused if that effect is not permanent.

\(^{15}\) Section 32 Report, Proposed Canterbury Land and water Regional Plan, Appendix 6, Memo from Adrian Meredith, Michelle Stevenson and David Kelly, dated 30 June 2012.
59. Support for that 'precautionary lens' approach to effects is echoed in the passage from Westfield quoted above but support can be found in the recent judgment, *Re Application by Meridian Energy*:

"[57] There was some discussion during the hearing by submitters about the approach that the Court should take when predicting future environmental risk, particularly in relation to the topics of noise, health avifauna and tourism. "The precautionary principle" was referred to, but within the context of the RMA, we prefer to describe it as "a precautionary approach". Certainly in *Shirley Primary School v Christchurch City Council* the RMA itself was described by Judge Jackson as "preventive, precautionary and proactive," a statement with which we agree

[58] The definition of 'effect' in s 3 of the RMA supports this view."  

Section 5 RMA

60. Before moving to consider the other topics I wish to make a final, broader point about the nutrient management provisions. I have previously addressed you briefly regarding Section 5. It is, after all, the starting point and the end point for all these proceedings.

61. The defining question is of course whether sustainable management is promoted by the nutrient provisions or not.

62. Case law tells us that Section 5 is to be interpreted using a broad overall judgment approach and that sub-sections 5(2)(a), (b) and (c) are not immutable ecological bottom lines that may never be transgressed. They are however still of critical importance to these proceedings.

63. After all, if sustainable management required nothing more than just meeting the cultural, economic and social needs of today then there would be a full-stop at the end of the first sentence in subsection 2. There would be no need for the word "while", nor for the three provisions that appear thereafter.

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16 *Re Application by Meridian Energy* [2013] NZEnvC 59, at paragraph 57.
17 That is the effect of Section 30(1) — Functions of Regional Councils, section 63(1) — Purpose of regional plans, and section 66(1) — Matters to be considered by regional council.
64. In my submission the historical approach to managing water quality in Canterbury has resulted in the economic advantages of water quality decline being enjoyed by current and past generations while the burdens are to be paid for by the future’s

65. In the past we may not have fully understood the degree of ecological harm this approach to nutrient discharges was causing. We may not have fully grasped the economic, social, cultural and ecological burdens that were being off-loaded to tomorrow. Now that we know better we can do better.

66. It is inherent in the "broad overall judgment" approach that human and ecological systems are dynamic, not static. What was once acceptable may cease to be so and what is desirable in one location may be undesirable in another. Simply, what is "sustainable management" at one place or in one time may not be in another place or time. That is the flexibility that section 5 affords decision-makers.

67. For its part, sub-section 5(2)(a) enables you to respond to the emergent paradigm and new information and adjust how the burdens and benefits of water quality management are spread across the generations. In my submission a new solution needs to be found which reduces the burdens on tomorrow and allows those people to enjoy more of the benefits than they would under either of ECan’s approaches.

68. Similarly, section 5(2)(b) allows for greater emphasis to be placed on safeguarding the life-supporting capacity of water and the ecosystems that depend on water than has occurred in the past.

69. The Court in the Day v Manawatu-Wanganui Regional Council faced a situation where the status quo had led to water quality decline due to nutrient discharges. The conclusion it reached was that maintaining the status quo was no answer to the task set by Part 2 of the RMA.:

[5-8] We should immediately say also that we have little sympathy for the line of argument that we should defer taking decisive action in the field of improving water quality (or, at the very least halting its further decline) because ... the science is not sufficiently understood ... or that ... further analysis could give a more comprehensive process ... or similarly phrased excuses for maintaining more or less the status quo. We will never know all there is to know. But what we undoubtedly do know is that in many parts of the region the quality of the natural water is degraded to the point of being not potable for humans or stock, unsafe for contact recreation, and its aquatic ecosystems range between sub-optimal and imperilled. We also know what is
causing that decline, and we know how to stop it, and reverse it. To fail to take available and appropriate steps within the terms of the legislation [Part 2] just cited would be inexcusable. [My emphasis]20

70. The Court revisited the theme later in its judgment. Having just set out the provisions of Section 5 it concludes:

[5-215] There can be no doubt that enabling ...people and communities to provide for their ...economic ...wellbeing ...includes so enabling the farmers and communities of the region. But that part of the purpose is not absolute, or necessarily even predominant. It must be able to coexist with the purposes of subparas a), b) and c). For the reasons already traversed, unless effective and thorough steps are taken to manage N leaching from the region’s farms, none of those three purposes will be met.21

STOCK-HOLDING AREAS AND ANIMAL EFFLUENT

71. The Director-General has made various submission points regarding the rules on stock-holding areas and animal effluent. The issues have been canvassed in Mr Hamilton’s Evidence in Chief at paragraphs 157-169.

72. I note that the authors of the Section 42A Report have adopted the Director-General’s request that these rules be split so that there is a clear delineation between the land use components of the rules and those components which are concerned with discharges. There are however two further drafting points which I do wish to draw to your attention.

73. First, throughout the rules reference is made to “collection, storage and treatment” of animal effluent. For instance, recommended rule 5.35B provides:

“The use of land for the collection, storage and treatment of animal effluent is a permitted activity, provided the following conditions are met...”

74. The words “collection, storage and treatment” are written conjunctively by virtue of the “and”. As a result, the rule may be interpreted to mean that recommended rule 5.35B only affects land users who do all three activities: collect, store and treat. It seems unlikely that this was the intention of the drafting.

75. This would be a minor point but for two facts:

➢ First, it is entirely possible that there will be animal effluent systems which do not do all three.

➢ Second, these particular rules are land use rules not discharge rules. Consequently, the presumption is that consent is not required unless the activity is specifically referred to in the plan and consent is described as being needed. Only those operators who fall squarely within the frame of the rules will need to comply with the conditions attached (or seek consent if they do not). Currently, only those operators who collect, store and treat the effluent are captured. Those who only store and collect, for instance, are not, and may do so without restriction as neither the Plan nor s9(2) provides otherwise.

76. The second drafting point which arises under this topic pertains to the rule’s omission to specify what happens if animal effluent is discharged directly to a surface water body. This matter was identified in Fonterra’s submission and was a point which the Director-General further submitted upon. The issue persists however in the recommended Rules 5.36 and 5.37 of the Section 42A Report.

5.36 The discharge of animal effluent or water contaminating animal effluent and contaminants onto or into land where a contaminant may enter water is a restricted discretionary activity, provided that the following conditions are met:

(1) The discharge of animal effluent or water containing animal effluent and other contaminants:

(a) is not directly to, or within 20m of a surface water body (other than a wetland...)

5.37 The discharge of animal effluent or water contaminating animal effluent and contaminants onto or into land where a contaminant may enter water that does not meet one or more of the conditions of Rule 5.36 is a non-complying activity.

77. The first rule makes it a restricted discretionary activity to discharge animal effluent, or water containing animal effluent onto or into land subject to conditions. The second rule is the default, non-complying status rule.

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22 Section 9(2) RMA
24 Director-General of Conservation: Further Submission, dated 20 December 2012, p 8
78. It is at least arguable that these two rules are concerned solely with discharges onto or into land thereby reflecting the requirement of Section 15(1)(b) RMA but not of Section 15(1)(a) RMA. The opening words of each rule indicate that the intention is that they do not cover direct discharges to surface water bodies.

79. The concern is that the rules fail to specifically deal with situations where the discharge is not onto or into land but is instead directly to water. In the absence of a specific activity status the default position is that offered by the pCLWRP’s general rule 5.6. Namely, discretionary activity status.

80. I acknowledge that one of the conditions attached to the first rule, recommended Rule 5.36, specifies that the discharge is not to be directly to, nor within 20m of, a surface water body. That is somewhat at odds with the first sentence of the rule which is concerned solely with discharges to land, not those directly to water.

81. In my submission this lack of clarity can, and should, be remedied to ensure that there is no room for ambiguity. It would, in my submission, be illogical if a person could argue that animal effluent discharges which are made directly to a surface water body ought to be discretionary while those which are onto or into land need be treated more conservatively as non-complying.

SILAGE PITS AND COMPOST

82. The Director-General’s concerns regarding silage pits and compost are addressed in Mr Familton’s evidence. The Director-General has expressed an overriding concern about the way in which those rules overlap with other rules that also deal with waste disposal. In particular, the rules regarding offal pits, farm rubbish pits, animal waste and vegetative waste.

83. I shall not address you in detail on those points. However, in working through the Plan I took the opportunity to interrogate the rules, using a few examples, to see where those overlaps lie and why they emerge. In case it assists you I have included, in Appendix 3, a few worked examples to illustrate the problems with the pCLWRP’s drafting.

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LIVESTOCK EXCLUSION FROM WATERBODIES

84. The matters of interest to the Director-General under this heading are covered by Mr Hamilton in paragraphs 217-229 of his Evidence in Chief.

85. My focus is on the recommended wording supplied by the Section 42A Report rather than the original drafting of the notified plan. The changes recommended by the Section 42A Report result in a prohibition on intensively farmed stock, or "intensive stock" to use the Officers’ phraseology, accessing wetlands. That is the effect of recommended rule 5.134. It is a strategy which the Director-General supported.

86. However, an area that continues to be a source of concern is the treatment of stock which are not intensively farmed. Included in this class are horses, sheep, beef cattle and deer. In the latter two cases, the factor which determines whether they are "intensive stock" or not is whether they are on irrigated land, contained for break-feeding or contained for winter feeding. If they are not being kept in those manners then they are not intensive stock.

87. The starting point is that this portion of the proposed Plan treats wetlands as entities distinct from rivers and lakes. That is something which the Director-General and Dr Gerbeaux’s evidence26 at Hearing Group 1 supported. Although that approach is, in the Director-General’s submission, entirely appropriate it has led to some peculiar drafting consequences for these stock exclusion rules. By way of explanation:

- Rule 5.133 makes it a prohibited activity for intensive stock to be in wetlands.

- Rule 5.134 mentions ‘wetlands’, and ‘intensive stock’ once more. The rule also makes it a prohibited activity for intensive stock and cattle to have access to wetlands but only in those parts of the wetland which meet one of the 4 criteria:
  - Is a listed inanga or salmon spawning sites;
  - Is 1000m upstream of a community or group drinking water supply intake;
  - Is 1000m upstream of one of the listed freshwater bathing sites;
  - Is within the fed of a spring-fed plains river.

26 Dr Philippe Gerbeaux: Evidence in Chief, dated 4 February 2013.
In this way rule 5.135 only excludes cattle from wetlands which possess one of those 4 special characteristics. In fact, those criteria are really aimed at rivers and lakes rather than wetlands.

Rule 5.135 also mentions ‘wetlands’. To paraphrase the rule, all other stock (i.e. non intensive stock) are entitled to enter wetlands and defecate within them as a permitted activity so long as the disturbance of the wetland does not result in:
- a conspicuous change in colour or clarity of the water,
- pugging; or
- de-vegetation that exposes bare earth.

88. Mixing zones, as defined by Schedule 5 of this plan, only operate in relation to rivers and lakes but not for wetlands. With no reference to mixing zones it is difficult to see how stock defecating in a wetland would not result in a conspicuous change in colour or water clarity, even if that change was only very localised.

89. Similarly, the very nature of a wetland is that it is prone to pugging. It is therefore difficult to imagine how stock access to a wetland would not result in pugging.

90. In my submission, the rules begin well by excluding all intensive stock from wetlands but become uncertain and confused where cattle and other non-intensive stock are concerned.

91. A preferable approach, in the Director-General’s submission, is to simply prevent all non-intensive stock from accessing wetlands as a permitted activity and, instead, require that resource consent be obtained on a discretionary basis. That is the view taken by the Director-General’s planning witness, Mr Familton. The approach would also accord with Dr Gerbeaux’s evidence which demonstrated that stock threaten these fragile, important and dwindling resources.

92. By requiring consent for non-intensive stock to access wetlands the Regional Council would gain an opportunity to assess the values of the particular wetland and thoroughly consider the degree of harm and interference which the stock might have. Thereafter a judgment can be made as to whether consent is appropriate and, if so, what conditions might apply. The Director-General has not gone so far as to seek the exclusion of non-intensive stock as a prohibited activity nor even as a non-complying one.

27 Herbert Familton: Evidence In Chief (Hearing Group 2), dated 2 April 2013, particularly paragraph 225.
28 Dr Philippe Gerbeaux: Evidence in Chief (Hearing Group 1), dated 4 February 2013, particularly paragraphs 65-69.
93. Further support for the Director-General’s approach can be found in Policies 9.3.1 and 9.3.3 of the Canterbury Regional Policy Statement 2013. The strategy would also accord with Sections 6(a) and (c) of the RMA and with Principles 5 and 9 of the Canterbury Water Management Strategy which provide:

94. Section 63 of the Environment Canterbury (Temporary Commissioners and Improved Water Management) Act 2010 requires the Regional Council to ‘have particular regard to’ the principles of the Canterbury Water Management Strategy.

95. Amending the rule as suggested by Mr Hamilton would also avoid criticism that the current rule, 5.135, requires subjective assessments to be made as to nature and degree of impacts the stock are having.29

96. I note that counsel for Fish and Game referred, in her legal submissions, to that part of the One Plan judgment in which Thompson J comments:

"...Keeping stock out of waterways is such a basic step in protecting waterways from effluent pollution that it must be regarded as an absolute requirement..."30

97. In the case of wetlands I submit that the argument is even more compelling.

98. It is understandable that farmers will not want to see stock excluded from "puddles in paddocks". Indeed, it would seem unreasonable and impractical to do so. However, as Dr Gerbeaux’s evidence indicated31, there are methods like those in Tables E.2(a) and E.2(b) of the Horizons One Plan which can be used to exclude those types of "wet land".

FERTILISER PROVISIONS

99. Mr Hamilton’s evidence traverses the Director-General’s concerns regarding the fertiliser rules (paragraphs 181-216). I will not repeat the detail of Mr Hamilton’s evidence, but in essence the issues are:

➢ That the fertiliser rules are permissive;
➢ That there is confusion as to how the specific rules on fertilisers interact with the more general farming nutrient provisions;

29 Please refer to my discussion at paragraph 125 regarding the tests to be applied for permitted activity rules.
31 Dr Philippe Gerbeaux: Evidence in Chief (Hearing Group 1), dated 4 February 2013, particularly paragraph 136.
That the failure to specify quantity and rate limits for fertilisers means one cannot be sure that Section 70 RMA will not be breached;

That fertilisers contain ingredients which are not Nitrogen-based or which are not actually nutrients (for instance heavy metals). The permissive rule approach means that unlimited amounts of those substances can be applied to land without any oversight or cap.

100. These points noted, there is one matter arising from the fertiliser provisions which I do wish to address you on in more detail. It pertains to the requirement that fertiliser not be applied directly to, nor within a certain distance of, surface waterbodies.

101. In the notified version of the Plan the Council stipulated that fertiliser cannot be applied (either aerially or by land-based means) directly to, nor within, 10m of the bed of a permanently flowing river. The same condition continues in the rules recommended by Section 42A Report. For instance:

"5.52 The discharge of fertiliser onto or into land in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:

...2. Fertiliser is not discharged directly into or within 10m of the bed of a permanently flowing river, lake, artificial watercourse or within 10m of a wetland boundary... "[My emphasis]

"5.53 The discharge of fertiliser from an aircraft onto or into land in circumstances where a contaminant may enter water is a permitted activity provided the following conditions are met:

...4. Fertiliser is not discharged directly into or within 10m of the bed of a permanently flowing river or artificial watercourse that is more than 2m wide, any lake or any wetland boundary... "[My emphasis].

102. Rule 5.54 is the default discharge rule. It is recommended for amendment by the Section 42A Report. As a result, discharges which do not meet the conditions are now to be restricted discretionary activities where they were previously discretionary. The activity status has thus been downgraded.

103. The Director-General further submitted in support of Fish and Game regarding these permitted activity rules\(^\text{32}\). Fish and Game, amongst other matters, advocated for

\(^{32}\) Director-General of Conservation: Further Submission in support of Fish and Game's comments regarding fertilizer use (pages 68-69), dated 20 December 2012 at page 10.
amendment of the rules. The amendments, described more fully in Mr Percy’s evidence\textsuperscript{33}, would see fertiliser discharges to permanently flowing rivers and to intermittently flowing rivers with an active bed wider than half a metre caught by the conditions attached to the permitted activity rule. As a consequence, those types of fertiliser discharges would be pushed from the permitted category into the discretionary class.\textsuperscript{34}

104. In seeking this amendment, Fish and Game’s witness, Mr Percy, explained that some rivers, even large ones, flow intermittently.\textsuperscript{35} That is certainly the case with many rivers in Canterbury: the Eyre River, not far from here, is one obvious example.

105. The difficulty is that the phrase “permanently flowing river” is not defined in the proposed Plan. If the words are given their natural meaning then the conditions in both these rules (5.52 and 5.53) would only capture rivers that never run dry along any portion of their course. This formulation would exclude waterbodies that from time-to-time do run dry because of, say, severe drought. It arguably also excludes those which intermittently ‘flow’ below ground.

106. If the natural interpretation is applied to Rule 5.53 it ends in confusion.

107. Discharges of fertiliser to intermittently flowing rivers are not actually mentioned in the conditions of rule. In the absence of any reference to intermittently flowing bodies one is free to interpret this as being uncontrolled by these two rules. That would mean that the default rule offered by 5.6 of the pCLWRP would apply resulting in the discharge being a discretionary activity.

108. In this way fertiliser discharges which are directly to or within 10m of an intermittently flowing waterbody are discretionary while discharges to permanently flowing bodies are restricted discretionary as a result of recommended rule 5.54.

109. There is, I submit, something fundamentally wrong with the way that these rules and their conditions are drafted. One senses what the Plan is trying to achieve but it simply does not quite get there.

110. This set of rules also suffers from the same problem that I identified in relation to the stock holding and animal effluent rules. That is, the introductory sentences refer to

\textsuperscript{33} Mr Phillip Percy: Evidence in Chief (Hearing Group 2), dated 10 April 2012, at paragraph 94
\textsuperscript{34} Mr Phillip Percy: Evidence in Chief (Hearing Group 2), dated 10 April 2013, Appendix 4, pages 59-60.
\textsuperscript{35} Mr Phillip Percy: Evidence in Chief (Hearing Group 2), dated 10 April 2013, paragraph 94.
discharges *onto or into land* in circumstances where those discharges might enter water. The sentences are silent about discharges *direct* to surface water. Arguably, they are not therefore covered by these permitted activity rules and nor are they covered by the default restricted discretionary activity rule offered by the new Rule 5.54. Rather, they would be covered by the default discretionary activity rule offered by 5.6.

111. One suspects that this is not what the authors of the proposed plan intended and that it is simply an oversight.

**VERTEBRATE TOXIC AGENTS**

112. In relation to the vertebrate toxic agent (VTA) rules, the Director-General has given some support to ECan’s approach. However, where the Director-General and the Regional Council part company is in relation to the rules regarding aerial application of VTAs.

113. You have been provided with comprehensive scientific and planning advice\(^{36}\) which supports a permitted activity rule for aerial discharges of VTAs. Currently the Plan affords this controlled activity status instead.

114. This matter is of fundamental interest to the Director-General since the costs to the Department of fighting vertebrate pests are high and rising.

115. In my submission the Director-General’s witnesses have comprehensively dealt with the safety aspects of aerial application of VTAs and they have drawn upon the advice contained in the Report of the Parliamentary Commissioner for the Environment regarding the use of 1080. That report strongly advocates for permitted activity rules in regional plans to deal with 1080 and also makes reference to pindone.\(^{37}\)

116. It is clear that applying VTAs is already a highly regulated activity. The controlled activity rules proposed by ECan add little to the statutory controls which already operate outside the RMA.

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\(^{36}\) Mr Herbert Hamilton: Evidence in Chief (Hearing Group 2), dated 2 April 2013 at paragraphs 31-72. Dr Alastair Fairweather: Evidence in Chief (Hearing Group 2), dated 2 April 2013.

117. The Director-General’s witnesses have analysed the aerial discharge rule, Rule 5.23, in some detail. As Dr Fairweather explains, the Section 42A Report has not improved the situation but rather made things more problematic.

118. The Section 42A Report makes it a controlled activity to apply VTAs from an aircraft so long as the discharge is never within 20m of any surface waterbody.\(^\text{38}\) Previously the rule only applied to rivers greater than 3m wide.

119. Dr Fairweather has explained that, from a practical perspective, it is almost impossible to avoid all small waterbodies since these do not even appear on the maps used.\(^\text{39}\) Accordingly, resource consent would be required, on a discretionary basis, for almost all aerial discharging of 1080 and Pindone. In effect the Section 42A Report shifts what was a permitted activity under the previous plan, the NRRP,\(^\text{40}\) to one which is a discretionary. That move has been made in spite of the scientific evidence to the contrary.

120. Presenting additional hoops for organisations like the Department to leap through will not, in my submission, further sustainable management.

121. Section 6(c) of the RMA makes protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna a matter of national importance. The pest management work performed by the Department, farmers and the Animal Health Board is key to delivering on this national priority.

122. In preparing for this hearing the Director-General’s witnesses have liaised with Federated Farmers and with the Animal Health Board. Those discussions have served to demonstrate that all three parties share the same concerns about the controlled activity status of the aerial discharge rule for VTAs. All three agree that Mr Hamilton’s permitted activity rule offers a better solution.

123. By way of summary, Mr Hamilton’s strategy has been to ensure that only those products which have passed through the rigorous Hazardous Substances and New Organisms Act 1996 (HSNO) process can be applied under his permitted activity rule. Currently only pindone and 1080 are so approved. Over time however other substances may be approved and those too would be covered by this rule. In this way Mr Hamilton’s rule is

\(^{38}\) Refer to recommended rule 5.23, Proposed Canterbury Land and Water Regional Plan - Section 42A Report, Volume 2 for Hearing Group 2, March 2013, Report No R13/11.

\(^{39}\) Dr Alastair Fairweather: Evidence in Chief (Hearing Group 2), dated 2 April 2013, paragraphs 51-57.

\(^{40}\) Rule WQL 18, Natural Resources Regional Plan
flexible and accommodating but also requires adherence to the strict protocols and safety processes required by HSNO.

124. In my submission the evidence of Dr Fairweather means you may be satisfied that the Mr Hamilton's permitted activity rule does not offend the tests in section 70 of the RMA.

125. Moreover, the 8 conditions attached to Mr Hamilton's proposed permitted activity rule, in my submission:
   ➢ Are specified with sufficient certainty as to be capable of objective assessment\(^{41}\);
   ➢ Are comprehensible to a reasonably informed reader\(^{42}\); and
   ➢ Do not reserve to the council the discretion to decide, by subjective formulation, whether a proposed activity is permitted or not.\(^{43}\)

AGRICHEMICALS

126. Similar observations and arguments have been raised by the Director-General's witnesses regarding the discharge of agrichemicals as were discussed under the VTA rules.

127. The evidence of the Director-General's witnesses is that applying agrichemicals is already highly controlled by other legislation. By ensuring that these rules only permit discharges within the confines of the HSNO Act, for instance, there will be no mischief caused. Rather, management of land-based and aquatic plant pests will be streamlined and unnecessary regulatory duplication will be removed.

128. Mr Hamilton's\(^{44}\) and Mr Briden's\(^{45}\) evidence invites you to conclude that the conditions attached to Mr Hamilton's permitted activity rules\(^{46}\) are such that you can be satisfied that section 70 will not be breached. In my submission they also meet the requirements for permitted activity rules which I discussed in paragraph 125 above.

\(^{41}\) Carter Holt Harvey Ltd v Waikato Regional Council ENC Auckland, A123/2008, 6 November 2008, at paragraphs 116 and 144, also Twisted World Ltd v Wellington City Council ENC Wellington W024/2002, 8 July 2002, paragraph 64.


\(^{43}\) Carter Holt Harvey Ltd v Waikato Regional Council ENC Auckland, A123/2008, 6 November 2008, at paragraphs 116 and 144, also Twisted World Ltd v Wellington City Council ENC Wellington W024/2002, 8 July 2002, paragraph 63. Also, in Purification Technologies Ltd v Taupo DC [1995] NZRMA 211 at page 219 that no further approval or consent is required from the Council for the permitted activity rule to operate.

\(^{44}\) Mr Herbert Hamilton, Evidence in Chief (Hearing Group 2), dated 2 April 2013, paragraphs 101-103.

\(^{45}\) Mr Keith Briden, Evidence in Chief (Hearing Group 2), dated 2 April 2013.

\(^{46}\) Refer to Mr Hamilton's Evidence in Chief (Hearing Group 2), dated 2 April 2013 for redrafted rules, on pages 54-58.
WITNESSES

129. The Director-General has lodged evidence from 4 expert witnesses. Their evidence covers the following matters:

➢ Mr Herbert Hamilton – planning evidence.
➢ Mr Keith Briden – the agrichemical provisions
➢ Dr Alastair Fairweather – vertebrate toxic agents
➢ Ms Pamela Guest – planning evidence for the nutrient management provisions.
Appendix 1

Excerpts from the National Policy Statement – Freshwater Management 2011

"A. Water quality

...

Policy A1

By every regional council making or changing regional plans to the extent needed to ensure the plans:

a. establish freshwater objectives and set freshwater quality limits for all bodies of fresh water in their regions to give effect to the objectives in this national policy statement, having regard to at least the following:
   i. the reasonably foreseeable impacts of climate change
   ii. the connection between water bodies

b. establish methods (including rules) to avoid over-allocation.

Policy A2

Where water bodies 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) to assist the improvement of water quality in the water bodies, to meet those targets, and within a defined timeframe...

E. Progressive implementation programme

Policy E1

a. This policy applies to the implementation by a regional council of a policy of this national policy statement.

b. Every regional council is to implement the policy as promptly as is reasonable in the circumstances, and so it is fully completed by no later than 31 December 2030.

c. Where a regional council is satisfied that it is impracticable for it to complete implementation of a policy fully by 31 December 2014, the council may implement it by a programme of defined time-limited stages by which it is to be fully implemented by 31 December 2030.

d. Any programme of time-limited stages is to be formally adopted by the council within 18 months of the date of gazetting of this national policy statement, and publicly notified.

e. Where a regional council has adopted a programme of staged implementation, it is to publicly report, in every year, on the extent to which the programme has been implemented."

27
APPENDIX 2 — EXCERPTS from the operative Canterbury Natural Resources Regional Plan.

Tables Referred to By Dr Meredith in his memo dated 30 June 2012.
<table>
<thead>
<tr>
<th>Water quality management unit</th>
<th>Sub-unit</th>
<th>Purposes of management</th>
<th>QMCI* [minimum score]</th>
<th>Dissolved oxygen [maximum saturation] (%)</th>
<th>Temperature [maximum] (°C)</th>
<th>Emergent macrophytes [maximum cover of river bed] (%)</th>
<th>Total macrophytes [maximum cover of river bed] (%)</th>
<th>Chlorophyll a [maximum biomass] (mg/m³)</th>
<th>Filamentous algae &gt;20mm [maximum cover of river bed] (%)</th>
<th>Fine sediment &lt;0.0625mm diameter [maximum cover of river bed] (%)</th>
<th>Suitability for contact recreation [SFRG]*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpine - upland</td>
<td></td>
<td>1,2,3,4,5,6</td>
<td>5 - 6</td>
<td></td>
<td></td>
<td>No value set</td>
<td>No value set</td>
<td>50</td>
<td>10</td>
<td>10</td>
<td>Good</td>
</tr>
<tr>
<td>Alpine - lower</td>
<td></td>
<td>1,2,3,4,5,6,7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td>20</td>
<td>Good to Fair</td>
<td>Good to Fair</td>
</tr>
<tr>
<td>Hill-fed - upland</td>
<td></td>
<td>1,2,3,4,5,6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>50</td>
<td>10</td>
<td>15</td>
<td>Good</td>
</tr>
<tr>
<td>Hill-fed - lower</td>
<td></td>
<td>1,2,3,4,5,6,7,7</td>
<td>3.5</td>
<td></td>
<td></td>
<td>90</td>
<td>20</td>
<td>No value set</td>
<td>No value setlinewidth(800px)</td>
<td>No value setlinewidth(800px)</td>
<td>No value setlinewidth(800px)</td>
</tr>
<tr>
<td>Lake-fed</td>
<td></td>
<td>1,2,3,4,5,6,7</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td>30</td>
<td>20</td>
<td>No value set</td>
</tr>
<tr>
<td>Banks Peninsula</td>
<td></td>
<td>1,2,3,5,6,7,7</td>
<td>4 - 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>120</td>
<td>20</td>
<td>20</td>
<td>No value set</td>
</tr>
<tr>
<td>Spring-fed - upland</td>
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<td>1,2,3,4,5,6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20</td>
<td>30</td>
<td>50</td>
<td>Good</td>
</tr>
<tr>
<td>Spring-fed - lower basins</td>
<td></td>
<td>1,2,3,4,5,6</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>30</td>
<td>200</td>
<td>Good</td>
</tr>
<tr>
<td>Spring-fed - plains</td>
<td></td>
<td>1,2,3,5,6,7,7</td>
<td>4.5 - 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>50</td>
<td>200</td>
<td>20 - 30</td>
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<tr>
<td>All river management units</td>
<td></td>
<td>3,4,6,5,7</td>
<td>3.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td>60</td>
<td>200</td>
<td>30 - 40</td>
</tr>
</tbody>
</table>

Toxin producing cyanobacteria shall not render the river unsuitable for recreation or animal drinking water.

Fish shall not be rendered unsuitable for human consumption by contaminants in a river.
**Key to Purposes of Management**
1. Maintain or improve aquatic ecosystems of indigenous flora and fauna.
2. Protect significant habitat of salmonids (trout or salmon).
3. Maintain amenity values.
4. Ensure water quality is safe for contact recreation.
5. Safeguard Ngāi Tahu cultural values.
6. Maintain or improve water quality for stock drinking-water supply.
7. Maintain or improve the functioning and health of estuaries and coastal lakes.

**Key to Abbreviations**

QMCI = Quantitative Macroinvertebrate Community Index.
SFRG = Suitability for Recreation Grade from *Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas 2003.*
<table>
<thead>
<tr>
<th>Water quality management unit</th>
<th>Purpose of management</th>
<th>Ecological health indicators</th>
<th>Eutrophication indicator</th>
<th>Visual quality indicator</th>
<th>Microbiological indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dissolved Oxygen [minimum saturation] (%)</td>
<td>Temperature [maximum] (°C)</td>
<td>LakeSPI* [minimum grade]</td>
<td>Trophic Level Index (TLI)* [maximum score]</td>
<td>Colour</td>
</tr>
<tr>
<td>Hypolimnion</td>
<td>Epilimnion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large high country lakes</td>
<td>1, 2, 3, 4, 5, 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small to medium sized high country lakes</td>
<td>1, 2, 3, 4, 5, 6</td>
<td>70</td>
<td>90</td>
<td>19</td>
<td>Excellent</td>
</tr>
<tr>
<td>Coastal lakes</td>
<td>1, 2, 3, 4, 5, 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial lakes - on-river</td>
<td>1, 2, 3, 4, 5, 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artificial lakes - others</td>
<td>Specific to the purpose of the lake</td>
<td>20</td>
<td></td>
<td>Suitable for the purpose of the lake</td>
<td></td>
</tr>
<tr>
<td>All lake management units</td>
<td>3, 4, 5, 6</td>
<td>Toxin producing cyanobacteria shall not render the lake unsuitable for recreation or animal drinking water</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3, 5</td>
<td>Fish shall not be rendered unsuitable for human consumption by contaminants in a lake</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Maori Lakes and Lakes Emily, Emma and Georgina
All other small to medium sized high country lakes
Coopers Lagoon/Murwai
All other coastal lakes
The natural colour of the lake is not altered by more than five Munsell Units
Suitable for the purpose of the lake
No value set
Good
Key to the Purposes of Management:
1. Maintain aquatic ecosystems of indigenous flora and fauna
2. Protect significant habitat of salmonids (trout, salmon or char)
3. Maintain amenity values
4. Ensure water quality is safe for contact recreation
5. Safeguard Ngāi Tahu cultural values.
6. Ensure water is suitable for stock drinking-water supply

*Key to abbreviations
LakeSPI: a method for monitoring ecological condition in New Zealand lakes (Technical report version 1 Report by NIWA)
TLI = Trophic Level Index from: Protocol for Monitoring Trophic Levels of New Zealand Lakes and Reservoirs (Report by Lakes Consulting, March 2000)
SFRG = Suitability for Recreation Grade from: Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas, Ministry for the Environment, June 2003
Water quality standards for waters not classified as NATURAL are specified in the following table (Table WQL16):

Table WQL16  Water quality standards for surface waters in the Canterbury region.

<table>
<thead>
<tr>
<th>Water quality class</th>
<th>DOC*</th>
<th>Temperatu re</th>
<th>pH</th>
<th>Visual clarity</th>
<th>Colour</th>
<th>DIN*</th>
<th>DRP*</th>
<th>E. coli</th>
<th>Toxicants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change shall be less than (mg/l)</td>
<td>Average change shall not exceed (°C)</td>
<td>Shall be between (no units)</td>
<td>% change shall not exceed (Munnsell units)</td>
<td>Shall be less than (mg/l)</td>
<td>Shall be less than (mg/l)</td>
<td>95% of samples shall be less than (E. coli per 100ml)</td>
<td>Shall not exceed the concentration specified in Table WQL17 for the relevant level of protection (see note below)</td>
<td></td>
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</tr>
<tr>
<td>Alpine-upland</td>
<td>2.0</td>
<td>2.0</td>
<td>6.5 – 8.5</td>
<td>20</td>
<td>5</td>
<td>0.08</td>
<td>0.005</td>
<td>280</td>
<td>99%</td>
</tr>
<tr>
<td>Alpine-lower</td>
<td></td>
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<tr>
<td>Hill-fed – upland</td>
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<tr>
<td>Hill-fed – lower</td>
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<tr>
<td>Hill-fed – lower – urban</td>
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<td></td>
<td></td>
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<tr>
<td>Lake-fed</td>
<td>20</td>
<td>5</td>
<td>0.47</td>
<td>0.006</td>
<td>280</td>
<td>99%</td>
<td></td>
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</tr>
<tr>
<td>Banks Peninsula</td>
<td>35</td>
<td>10</td>
<td>0.10</td>
<td>0.007</td>
<td>260</td>
<td>99%</td>
<td></td>
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<tr>
<td>Spring-fed – upland</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Spring-fed – lower basin</td>
<td>35</td>
<td>10</td>
<td>0.47</td>
<td>0.010</td>
<td>550</td>
<td>95%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring-fed – plains</td>
<td>35</td>
<td>10</td>
<td>1.50</td>
<td>0.016</td>
<td>550</td>
<td>95%</td>
<td></td>
<td></td>
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<tr>
<td>Spring-fed – plains - urban</td>
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<td>Lakes</td>
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<tr>
<td>Large high country lakes</td>
<td>2.0</td>
<td>2.0</td>
<td>8.5 - 8.5</td>
<td>20</td>
<td>5</td>
<td>0.073</td>
<td>0.004</td>
<td>280</td>
<td>99%</td>
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<td>Small to medium high country lakes</td>
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<tr>
<td>Coastal lakes and lagoons</td>
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<tr>
<td>Artificial – on-river</td>
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<td></td>
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<tr>
<td>Artificial – other</td>
<td></td>
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</tbody>
</table>

Key to Abbreviations:

- DOC = Dissolved organic carbon
- DIN = Dissolved inorganic nitrogen
- TN = Total nitrogen
- DRP = Dissolved reactive phosphorus
- TP = Total phosphorus
- E. coli = Escherichia coli

Note: An application for a discharge permit will be required to have assessed the effects of those Toxicants listed in Table WQL17 that are very likely to be present in the discharge.
APPENDIX 3 - Worked examples to demonstrate the overlap between various classes of waste rules:

- offal pit and farm refuse rules (5.29-5.32),
- animal and vegetative waste rules (5.33-5.34),
- stock holding and animal effluent rules (5.35-5.36),
- silage and compost rules (5.37-5.38).

1. Animal effluent (using an example of dairy shed washdown)

**Covered by silage and compost rules PA:**

Observations —
Because it is “organic matter”. If stockpiled as a result of farming then it likely falls within the PA rule since farming may not qualify as an industrial or trade process.
The only requirements under this rule are therefore if: no leachate to enter surface water, that the organic matter not be from a trade or industrial process. If under 20m3 no set backs required. If over 20m3 then 20m setbacks needed.
If conditions are not met then the activity is restricted discretionary.

**Covered by the restricted discretionary stockholding and animal effluent:**

Observations -
That requires 20m set backs from surface water for treatment or collection facilities. Also, discharges of the effluent are not to occur outside the site and not within 20m of surface water. Note however, there are no other limits on quantity. If the conditions of the restricted discretionary activity are not met then the fall back is a non-complying activity status.

**Covered by animal and vegetative waste rules PA:**

Observations —
If the effluent is mixed with vegetative waste then it qualifies to be covered by these rules. If so, then it must not contain hazardous substances, hazardous waste, nor human effluent. Also, it must not be applied: more than 1 time every two months; when field moisture exceeds capacity; within 20m of surface water, bores etc or group/community drinking water protection areas.
The default rule is a discretionary activity status rule.
Given the bizarre results that would arise if the existing definitions of hazardous substances and hazardous waste were allowed to stand one assumes these will have to be amended or the references in this rule left out. Presumably, however, they will be amended to enable discharges of putrescible waste like effluent.

2. Animal carcasses or offal

**Covered by silage and compost rules PA:**

Observations —
Covered because it is “organic matter”. If stockpiled as a result of farming then it likely falls within the PA rule since farming may not qualify as an industrial or trade process. The only requirements under this rule are therefore: no leachate to enter surface water, that the organic matter not be from a trade or industrial process. If under 20m3 no set backs required. If over 20m3 then 20m setbacks needed. RDA if conditions not met.

**Not covered by stockholding and animal effluent rules RDA:**

Observations -
Covered because the discharges under this rule all pertain to animal effluent. The absence of a definition of animal effluent is not helpful but one assumes they mean liquid animal excrement.
Not covered by the animal and vegetative waste rules because offal is specifically not a “solid animal waste” and also is not “animal excrement” so cannot be caught by this rule water protection areas.

Could also be caught by the offal pit rules

Observations –
but only if a pit is actually dug.

3. Pig manure - as an example of solid waste

Covered by silage and compost rules as a permitted activity:

Observations –
because it is “organic matter”. If stockpiled as a result of farming then it likely falls within the permitted activity rule since farming may not qualify as an industrial or trade process. The only requirements under this rule are therefore: no leachate to enter surface water, that the organic matter not be from a trade or industrial process. If under 20m3 no set backs required. If over 20m3 then 20m setbacks needed. RDA if conditions not met.

May also be covered by the restricted discretionary stockholding and animal effluent rules:

Observations –
Since there is no definition of animal effluent so no indication of how solid the animal excrement needs to be. If it qualifies under this rule then 20m set backs required for the treatment or collection facility from surface water etc and groundwater protection. Also, discharges of the effluent are not to occur outside the site and not within 20m of surface water. Note, there are no other limits on quantity. If restricted discretionary activity rules are not met the it is a non-complying activity.

Covered by the animal and vegetative waste rules:

Observations -
if the pig manure is either solid or is liquid but mixed with vegetative waste such as sawdust then it qualifies to be covered by these rules. If so, then it is not to contain haz subst, haz waste, human effluent. Also, not applied more than 1 time every two months. When field moisture exceeds capacity, not within 20m of surface water, bores etc or group/community drinking water protection areas. The default rule is discretionary activity.

4. Grape marc (as an example of vegetative waste)

Covered by silage and compost rules PA:

Observations -
Covered because it is “organic matter”. If stockpiled as a result of farming then it likely falls within the PA rule since farming may not qualify as an industrial or trade process. The only requirements under this rule are therefore: no leachate to enter surface water, that the organic matter not be from a trade or industrial process. If under 20m3 no set backs required. If over 20m3 then 20m setbacks needed. Fall back rule if the conditions are not met is a discretionary activity status.

Covered by animal and vegetative waste rules PA:

Observations –
This is a vegetative waste so qualifies to be covered by these rules. If so, then it is not to contain hazardous substances, hazardous waste nor human effluent. Also, not to be: applied more than 1 time every two months; when field moisture exceeds capacity; within 20m of surface water, bores etc
or group/community drinking water protection areas. Fall back rule if conditions are not me is a discretionary activity status.

Not covered by stockholding and animal effluent rules RDA: