In the Environment Court of New Zealand
Christchurch Registry

I Mua I Te Kōti Taiao o Aotearoa
Ōtautahi Rohe

ENV-2018-CHC-037
ENV-2018-CHC-050

Under	the Resource Management Act 1991 (**RMA**)
In the matter of	an appeal under clause 14 of Schedule 1 of the RMA in relation to decisions on the Proposed Southland Water and Land Plan
Between	**Royal Forest and Bird Protection Society of New Zealand Incorporated**
	Appellant
And	**Southland Fish and Game Council**
	Appellant
And	**Southland Regional Council**
	Respondent

Rebuttal Evidence of Ben Farrell

Topics B2, B3, B4, B5

22 February 2022

Contents

APPENDIX BF1 – RECOMMENDED AMENDMENTS

ABBREVIATIONS/TERMS USED

B&L	Beef and Lamb NZ Limited
CSA	Critical Source Area
DOC	Director-General of Conservation
EiC	Evidence in chief
Federated Farmers	Federated Farmers of New Zealand Inc
F&B	Royal Forest and Bird Protection Society of New Zealand Incorporated
F&G	Southland Fish and Game Council
IWG	Intensive Winter Grazing
JWS Farm Systems 1	JWS: farm system experts, 22 November 2021
JWS Farm Systems 2	JWS: farm system experts, 6 December 2021
JWS Forestry	JWS: forestry experts, 29 November 2021
JWS Planning	JWS: planning experts, 10 December 2021
JWS Science 2019	JWS: water quality and ecology science experts (rivers, estuaries and lakes) 22 November 2019
JWS Science 2021	JWS: water quality science experts, 24-26 November 2021
NESFM	Resource Management (National Environmental Standards for Freshwater) Regulations 2020
Ngā Runanga	Waihopai Rūnaka, Hokonui Rūnaka, Te Rūnanga o Awarua, Te Rūnanga o Oraka Aparima, and Te Rūnanga o Ngāi Tahu
OWP	Operative Water Plan
pSWLP	Proposed Southland Water & Land Plan: 1. Notified Version 2. Decisions Version 3. Partially Operative Version
SRC	Southland Regional Council / Environment Southland
TMOTW	Te Mana o te Wai

INTRODUCTION

Qualifications and experience

1. My full name is Ben Farrell. I am an environmental planning expert. My qualifications and experience are as set out in my evidence in chief (**EiC**) dated 20 December 2021.

Code of Conduct for Expert Witnesses

2. I confirm I have read the Code of Conduct for expert witnesses contained in the Environment Court of New Zealand Practice Note 2014 and that I have complied with it when preparing my evidence. Other than when I state I am relying on the advice of another person, this evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Scope of Evidence

3. I have been commissioned by the Royal Forest and Bird Protection Society of New Zealand Inc (**F&B**) and the Southland Fish and Game Council (**F&G**) to provide evidence in response to matters arising from the evidence of other parties involved in this matter: Kate **McArthur** (F&B and F&G) Claire **Jordan** (Aratiatia Livestock), Sue **Ruston** (Ballance), Christine Foster, Rene Corner-Thomas, and Tom Orchiston (Beef + Lamb), Emily Funnell and Linda **Kirk** (DOC), Bernadette Hunt, Geoffrey Young, Peter **Wilson** (Federated Farmers), Hamish English, Dr Craig **Depree**, Dawn **Dalley**, Gerard **Willis**, Cain **Duncan** (Joint Fonterra Dairy NZ), Jane **Whyte** (Meridian Energy), Ailsa **Cain,** Dr Jane **Kitson**, Treena Davidson (Ngā Runanga), Anna **Wilkes** and Carmen **Taylor** (Ravensdown), Chris Phillips, Hamish Fitzgerald, Jerome Wyeth (Rayonier NZ), Greg **Burrell**, Lauren **Maciaszek**, Matthew **McCallum-Clark**, Ross **Monaghan**, Dr Ton **Snelder** (Southland Regional Council), Graeme Manley and Sally Strang (Southwood and others), **Sharon Dines** and Sean Wilkins (Wilkins Farming Ltd)[1].

4. Except as stated in this evidence or shown as track changes in my "updated" EiC and s274 evidence, I confirm I maintain the opinions I expressed in the JWS Planning and my EiC and s274 evidence.

5. I have prepared my evidence based on my expertise as a planner given my qualifications and experience noted in my EiC and s274 evidence as updated above.

[1] In this evidence I respond directly to evidence prepared by those referenced above **in bold**

EXECUTIVE SUMMARY

6. My evidence below responds to aspects of the evidence of others where my evidence has been directly queried or where I feel a response will assist the court address the issues subject to appeal in this matter. In summary:

Wetland drainage

a. I maintain Rule 51 should be amended to delete the words “for the purpose of land drainage.

Ephemeral Rivers / Waterbodies / Flow paths

b. I have revised my position and agree with the recommendations of Mr McCallum-Clark except to the extent that changes to Rule 70 should be amended to address the concerns raised by Ms Kirk.

Schedule X

c. Schedule X should rely on and refer to the attributes identified by the freshwater scientists in the Science JWS 2019, as reflected in all the maps prepared by Dr Snelder.

d. Schedule X should also rely on the Cultural Indicators of Health.

e. I maintain references to Schedule X in Policy 16 should reference “degraded waterbodies requiring improvement”. However, references to Schedule X in Appendix N could be amended to simply refer to “waterbodies identified in Schedule X”).

f. All maps of degraded catchments should be included rather than just the combined map.

Extent of Improvement Required

g. Mr Willis appears to be bringing into doubt the application of TMOTW and how changes in the NPSFM might result in the concept of TMOTW being revisited under the Plan Change Tuatahi process. I do not expect the Plan Change Tuatahi processes will need to revisit how the pSWLP applies or interprets the concept of TMOTW. These matters were sufficiently understood and applied in the framing of the pSWLP, as reflected in the Topic A court hearing process and decisions.

h. Mr Willis[2] identifies that until plan change Tuatahi is notified the requirement to 'improve' must focus on 'making a start', with the implication that the pSWLP methods for managing farming activities will be sufficient if they require some improvement in water quality. However, I doubt the Plan Change Tuatahi process can provide any silver bullets for managing water quality and the weaker the intervention now will transpire into requiring more costly intervention under Plan Change Tuatahi. I think the pSWLP methods should do more than 'just making a start'. The pSWLP methods should provide for hauora by, among things, resulting in material changes to the way farming activities occur so that degraded waterbodies will improve materially irrespective of the outcomes of Plan Change Tuatahi.

IWG Rule 20B(a)(iii)(2)) – Setbacks from waterbodies

i. I am comfortable with Rule 20B(a)(iii)(2)) requiring a 10m setback from waterbodies and no setbacks from CSAs. This is on the basis that, in addition to the setback standard, the FEMP process should demonstrate how IWG will not be undertaken in CSAs, that contaminant losses into water will be avoided or reduced to the smallest amount reasonably practicable and should require larger setbacks where necessary to achieve ecological protection in particular locations.

Pasture Wintering

j. I no longer support a separate definition for IWG on the basis that "*Pasture Wintering*" (intensive winter grazing on pasture resulting in significant devegetation) is defined, and a metric for understanding significant de-vegetation (for example a "post grazing residual" metric) can be applied, and the activity is managed similarly to IWG.

k. I expect the farm system experts will be required to provide further input into this definition (or an alternative definition such as "High risk winter grazing on pasture"), and any the associated permitted activity thresholds.

l. I do not support the version promoted by Ms Taylor or Mr McCallum-Clark because the area of land threshold is too problematic.

Cultivation (Rule 25)

m. Based on the expert evidence of Mr Burrell and Ms McArthur the permitted setback distance for cultivation should be amended from 5m

[2] For example EiC @ par 5.6

to 10m on slopes below 10 degrees, and 20m on slopes between 10-20 degrees.

Appendix N

n. I maintain the objectives of Appendix N should be amended to capture the recommendations of the JWS Science 2021 and to seek that people understand the concept of ki uta ki tai and provide for hauora.

Recommended Amendments

o. Having considered evidence of other parties, I have revised my recommended plan amendments, as set out in Appendix 1 and as summarised in Table 1 below.

Table 1 *Summary of Ben Farrell recommended amendments*

Provision	EiC	274	Rebuttal
Identification of degraded waterbodies (Schedule X)	Support mapping of the extent of degraded waterbodies in order to clarify and demonstrate the extent of degraded waterbodies identified in the JWS Science 2019.	Not addressed	Unchanged from s274 except to support maps prepared in EiC of Dr Snelder and clarify that Schedule X should include the attributes for defining degradation that were agreed in the 2019 JWS. Oppose maps recommended in EiC of Dr Depree.
Ngāi Tahu Indicators of Health		Clarify this refers to the Ngā Rūnanga Cultural Indicators of Health (19 November 2019); and are a tool to be used within the pSWLP framework to, among other things, identify which waterbodies are degraded (i.e. Schedule X will be informed by both the JWS Science 2019 and the Ngāi Tahu Indicators of Health).	Unchanged from s274
Defining "minimise" and applying it across the pSWLP	Define "minimise" as "Minimise means to reduce to the smallest amount reasonably practicable" and apply it across the pSWLP.	Not addressed	Unchanged from EiC

Provision	EiC	274	Rebuttal
Reference to ephemeral rivers	Retain definition of “ephemeral rivers”. Replace “ephemeral flow path” with “ephemeral waterbody”, including within definition of “critical source area”.	Not addressed	Revised from EiC to align with Planning JWS.
Policy 18(2) and Rule 70 (grazing of stock in natural wetlands)	Not addressed	Policy 18(2) and Rule 70 should not be amended to permit grazing of stock in natural wetlands. Clause 70(ca)(iv) should be retained.	Unchanged from s274
Wetland rules 51 and 74	Classify any drainage of wetlands, as a non-complying activity, irrespective of the purpose/cause.	Rules 51 and 74 should not be amended to permit drainage from natural wetlands.	Unchanged from EiC and s274
Rule 78 (weed and sediment removal for drainage maintenance)	Amend Rule 78 as agreed in Planning JWS except include a new clause restricting sediment removal for drainage within habitats of threatened native fish and insert a new definition for “drain”.	Rule 78 should be amended to require resource consent for all drainage clearance activities.	Unchanged from s274 except no longer supporting new definition for “drain”.
Rule 25 (cultivation)	Not addressed	Rule 25 should not be amended to permit cultivation as sought by Federated Farmers	Amend Rule 25(a)(ii) so that cultivation is not permitted within 10m of waterbodies on land below 10 degrees and 20m on land sloping between 10-20 degrees.

Provision	EiC	274	Rebuttal
Policy 16	Insert "*degraded* waterbody that requires improvement", as opposed to just waterbody that requires improvement.	Not addressed	Unchanged from s274
Intensive winter grazing (definitions and rule(s) 20 and 20A)	Support new definition for IWG (to align with F&G relief) and amend Rules 20 and 20A to provide 20m setback from waterways	Support new definition for IWG (to align with F&G relief) and amend Rules 20 and 20A to provide 20m setback from waterways	Position refined slightly. No longer supporting a separate definition for IWG on the basis that *Pasture Wintering* can be defined and a metric for understanding significant de-vegetation (for example a "post grazing residual" metric) can be applied. The actual metric to be applied should be identified by freshwater science and farm systems experts. I do not support the version promoted by Ms Taylor or Mr McCallum-Clark because the area of land threshold is too problematic.
Appendix N – exemption for existing industrial wastewater FEMPs		Appendix N should not be amended to exempt existing FEMPs tied to consents for industrial waste discharges.	Unchanged from s274

Provision	EiC	274	Rebuttal
Appendix N	Minor plan drafting amendments to the farming activity provisions to clarify or reinforce the intent of the provisions agreed in the JWS Planning and better reflect the recommendations of the JWS science.	Not addressed	Refinement of amendments recommended in EiC to address concerns raised in other parties' s 274 evidence about duplication and reference to cultural concepts.

EVIDENCE

Wetland rules 51 and 74

7. Ms Maciaszek[3] considers the JWS wording of Rule 51(e) would be more consistent with policy 34 because allowing diversion of water for purposes other than land drainage (for example restoration of existing wetlands) better encourages the maintenance and restoration of existing natural wetlands.

8. I acknowledge that some purposes other than land drainage will be appropriate, including for example maintenance and restoration of existing wetlands. However:

    a. In respect of maintenance and restoration, in my experience, wetland maintenance and restoration does not always require diversions of water from a wetland (usually its damming and diversion of a flowing water course with effects on existing wetlands usually being that associated with receiving more water such as flooding).

    b. Including the term "for the purpose of land drainage" can create uncertainty and confusion. It complicates enforcement for example if SRC must prove the wetland drainage was "for the purpose of land drainage". This is an unnecessary complication given the environmental effects of diversion for other purposes which might have similar adverse effects on the hydrological function of a wetland (for example abstracting water for stock drinking or irrigation or building farm tracks through a wetland). These purposes would all affect the hydrological function of a wetland.

    c. Ms Maciaszek[4] considers the costs and benefits of the options before the Court and identifies among other things that the option supported by Ms Kirk, and I could result in an opportunity cost if wetland maintenance and restoration works are discouraged. In response, practically, I do not think the Non-Complying status will discourage or have any real influence on a person's intent to maintain or restore a wetland. For example, the marginal costs of applying the Non-Complying status to all diversions from wetlands associated with any activity are likely to be insignificant, assuming SRC can processes resource consent applications efficiently. Any activity which diverts water from a wetland is already somewhat complicated and will usually require input from

[3] EiC @ par 53

[4] EiC at pars 66-70

SRC to review proposals and determine activity status[5]. In my experience with preparing and administering resource consent applications, ironically, it can be more efficient for activities to be subject to a non-complying activity regime compared to other activity status (including permitted activities which require scrutiny or technical input to determine if an activity is permitted or not).

d. Drainage undertaken for the purpose of restoration is likely to have less than minor adverse effects and comply with policies promoting wetland restoration. In this regard a non-complying activity status is not a barrier to undertaking this type of activity, and I would expect the costs of elevating the activity status of maintenance and restoration wetland works from Restricted Discretionary Activity to Non-Complying to be indiscernible.

Ephemeral Rivers / Waterbodies / Flow paths

9. I acknowledge the findings and recommendations of Mr McCallum-Clark[6] and appreciate the concerns raised by Ms Ruston[7], and I support the findings of Ms Kirk[8]. I note that:

a. This issue is somewhat a matter of statutory interpretation, and it seems prudent for the matter to be clarified through a legal lens. In this regard it is unclear if ephemeral rivers (as referred to in the Decisions Version of the pSWLP) are land or water, or both land and water.

b. My recommendation to rename “ephemeral rivers” to “ephemeral waterbodies” was based on my understanding that these areas were waterbodies that are something other than “rivers”, as they may not have a formed bed and they could contain significant habitats which warrant protection. This is particularly relevant to the concerns raised by Ms McArthur[9] and Ms Kirk[10].

c. Ms Ruston identified that the meaning of ephemeral rivers in the pSWLP applies only “rivers” and not other waterbodies, although Ms Kirk

[5] Maciaszek EiC @ par 49

[6] EiC @ pars 38-54

[7] s274 Evidence @ pars 26-40

[8] s274 Evidence @ pars 23-37

[9] EiC @ pars 63-37

[10] s274 Evidence @ pars 23-37

identified how this could be resolved by amending the definition of "ephemeral river" to replace "river" with "swales or depressions".

d. Ms Ruston also identified that Ms McArthur's concerns appear to relate to intermittent rivers, not land. However, I understand Ms McArthur to be saying that her concerns relate to areas that have terrestrial vegetation (and therefore are not "intermittent rivers"), because streams can become pasture-lined as a result of farming activity.

e. It seems from the evidence of Mr Willis, Ms Ruston, and Mr McCallum-Clark that practically there is a spectrum/continuum and that a line needs to be drawn somewhere.

f. I maintain a waterbody (which is not an intermittent river or wetland) should be provided for in its own right and treated differently to land (on the basis that TMOTW and the plan Objectives require the prioritisation of the health and wellbeing of the water above the land).

10. Irrespective of whether or not these ephemeral areas are aquatic or terrestrial, I think the primary issue to address is to ensure the pSWLP provisions appropriately manage and protect the characteristics of these areas from adverse effects of farming activities such as stock access and winter grazing resulting in significant devegetation.

11. Considering all the above, coupled with Ms McArthur's latest assessment of this issue[11], I agree the term "ephemeral flow path" would cover both aquatic or terrestrial habitats and I am comfortable that the definition of "ephemeral river" can be replaced with "ephemeral flow path", as outlined by Mr McCallum-Clark and agreed in the Planning JWS.

Subtopic B4 – Beds of Lakes and Rivers (Rule 78)

12. I concur with Mr McCallum-Clark's overview of the issue and evidence provided to date[12].

13. In this case however the [connected] nature of the water course network is such that potentially all of the network/system may contain species of significance and therefore the entire network/system could be interpreted as being an area of significant indigenous vegetation and significant habitats of indigenous fauna.

[11] Rebuttal Evidence @ pars 29-31

[12] EiC @ pars 55-77

14. In the absence of prescribing criteria which identify how drainage maintenance can occur without killing threatened native fish I maintain a consenting regime is the most appropriate method to implement the pSWLP Objectives and relevant policies.

15. While I agree with Mr McCallum-Clark[13] that a non-regulatory regime has merits, there seems to be no option other than requiring resource consent if threatened native fish and their habitats (and taonga species) are to be protected.

Definition of drain

16. Mr McCallum-Clark[14] notes that my EiC supports recommendation of a new definition of "drain". To clarify, F&G were seeking to include a definition for "drain" because the definition set out in the National Plan Standard would capture subsurface drainage systems, and if applied to the pSWLP could have made various provisions untenable (for example setbacks from "modified watercourses"). Based on the evidence of Mr McCallum-Clark and my own review of the pSWLP rules and definitions I understand there are no rules requiring setbacks from a "drain" (subsurface drainage systems would not be considered as a "modified water course" or an "artificial watercourse). I understand Fish & Game are no longer seeking this relief.

Subtopic B5 - Farming

Statutory Framework and Topic A Interim Decision Context

17. While I generally agree with Mr Willis' outline of the relevant statutory framework in paragraph 4.1 and Attachment 1 to his evidence, I do not agree that the evolution of TMOTW in the NPSFM will result in a need to revisit these concepts in Plan Change Tuatahi. While the evolving iterations of the NPSFM have elaborated on (and strengthened) the concept of TMOTW, the pSWLP embodies the fundamental concepts of TMOTW and ki uta ki tai, as confirmed in the Topic A process and decisions. The authors of the pSWLP, and the regional and rūnunga governors responsible for notifying the pSWLP understood the meaning and implications of these concepts.

18. In my opinion these fundamental concepts will not need to be revisited in Plan Change Tuatahi.

[13] EiC @ 75

[14] EiC @ par 78

Identification of degraded waterbodies requiring improvement (Schedule X) and relationship with Plan Change Tuatahi

Mapping

19. As outlined by Mr McCallum-Clark[15], two sets of maps have been produced to identify the location of degraded waterbodies requiring improvement (Schedule X). Mr McCallum-Clark identifies that there are similarities in the maps produced by Dr Depree and Mr Snelder. However, the evidence of Ms McArthur[16] and Dr Canning[17] highlights that there is significant distinction between the two. In addition, I consider Dr Snelder's maps to be more appropriate than those prepared by Dr Depree because they specifically relate back to the Freshwater JWS 2019, which apply the ecological health attributes agreed during the Topic A process and therefore more appropriately implement Objective 6 during this interim period (as set out in my Topic A evidence the Plan Change Tuatahi process, once complete, may refine these interim settings).

20. I consider it would be more helpful for all plan users if Schedule X also incorporated maps relative to each attribute (nitrogen, phosphorus, sediment, microbial contaminants, and cultural health indicators). While Mr McCallum-Clark supports the incorporation of a combined map (Dr Snelder's Figure 4) and providing the maps of degradation in respect of specific attributes on request (as a non-regulatory method), I consider it will be more transparent and robust (and therefore more appropriate) to include or incorporate by direct reference all the maps of degradation of specific attributes and the JWS documents upon which these attributes and extent of degradation were agreed through the Topic A hearing process. It is unclear whether the maps produced by Dr Snelder adopt or refer to any cultural health indicators (despite this being acknowledged as relevant[18]. I note the JWS Planning records:

> [25] The planners agreed that mapping of all areas where water quality is degraded should occur. The planners agreed that a single map that identified where water quality is degraded by any one or more of nitrogen, phosphorus, sediment or microbial contaminants or **cultural health** would be helpful. (**my emphasis**)

[15] EiC @ pars 88 & 89

[16] Rebuttal Evidence pars 10-21

[17] Rebuttal Evidence

[18] Snelder EiC @ par 24, JWS Planning @ par 25

21. To be clear, I recommend the pSWLP includes Schedule X as a new Appendix to the plan which includes or directly incorporates:

    a. The attributes in Appendix 4 of the JWS Science 2019

    b. The Ngā Rūnunga Cultural Indicators of Health November 2019

    c. A map showing the locational extent of degraded waterbodies requiring improvement (Fig 4 of Dr Snelder's evidence)

    d. A map showing the locational extent of waterbodies degraded in respect of DIN (Fig 5 of Dr Snelder's evidence)

    e. A map showing the locational extent of waterbodies degraded in respect of DRP (Fig 6 of Dr Snelder's evidence)

    f. A map showing the locational extent of waterbodies degraded in respect of Suspended Sediment (Fig 7 of Dr Snelder's evidence)

    g. A map showing the locational extent of waterbodies degraded in respect of *E. Coli* (Fig 8 of Dr Snelder's evidence)

    h. A map showing the locational extent of waterbodies degraded in respect of MCI (Fig 9 of Dr Snelder's evidence)

    i. A map showing the locational extent of waterbodies degraded in respect of TN (Fig 10 of Dr Snelder's evidence).

    j. A map showing the locational extent of waterbodies degraded in respect of TP (Fig 10 of Dr Snelder's evidence).

Reference to degraded waterbodies requiring improvement

22. Other planners have raised concerns with my recommendation to retain the term "degraded" when referencing to the waterbodies requiring improvement. While referring to 'improving water quality' (and not mentioning 'degraded') has the benefit of adopting positive language, it may not practically remove overlap with the NPSFM terminology and processes, and I remain supportive of use of the term "degraded" alongside reference to "improvement". In addition to my previous evidence on this point I consider:

    a. Freshwater in Southland is degraded in respect of the attributes identified in the JWS Science 2019. The extent of degradation identified in the JWS Science 2019 was uncontested and relied on in the Topic A process and decisions.

b. The pSWLP methods, subject to Topic B, should provide for hauora by managing farming activities ahead of the unknown requirements of Plan Change Tuatahi to the extent that water quality is maintained where it is not degraded and materially improved where it is degraded.

c. Referring to the term "degraded" provides a clearer and direct link to the measures of degradation identified in the JWS Science 2019, upon which Schedule X is founded. Deleting reference to degraded will create an internal inconsistency and risks detaching the findings of the JWS Science 2019 from the planning framework.

d. The meaning of "degraded" set out in the NPSFM can only apply after the FMU process has been followed. As discussed in Topic A, Objective 6 recognises that water can be (and is) degraded prior to completion of FMU processes. There is no risk of confusion in the future because Plan Change Tuatahi can replace the current framework, including Schedule X, with a FMU-specific approach. In the meantime, it is appropriate to interpret degraded waterbodies as those identified in the Freshwater JWS 2019. Moreover, as signaled in the evidence of Ms Cain[19] the language now being adopted by SRC in the FMU / Plan Change Tuatahi process has shifted away from the focus on degradation. In this regard, it is possible that the term degradation, and its associated meaning, will not be used or referenced in the Plan Change Tuatahi process (except perhaps as might be required as part of the plan preparation and evaluation requirements under s32).

e. Ms Taylor[20] suggests that use of the word "degraded" inappropriately shifts the tone of the provision. I disagree. Failure to use a term such as "degraded" understates the issue. It is appropriate for the language of the pSWLP to adopt confronting language and not shy away from any negative connotations associated with the word "degraded". Retention of the words "catchments that require improvement" retain a sufficiently positive expression and I suggest inclusion of both "degraded" and "require improvement" reinforces the transitional aspect of the interim framework from focusing on degradation to hauora.

f. There are no significant cultural issue referring to water as being degraded, that I am aware of (none have been raised by Ngā Runanga witnesses to my knowledge). Some planners have commented that use of the term degraded is inconsistent with the findings in Ms Cain's

[19] EiC @ pars 23-29

[20] s274 Evidence @ par 24

evidence (pars 19-23). While I acknowledge Ms Cain[21] identifies that "*the flip in focus can be expressed in the tone and wording of the rule, as suggested in the planning JWS for mapping*", she goes on to express "*however, the key point is that flip shifts the emphasis of the rule, in particular, what the subject of the rule is, as this requires reconsideration of what is being managed and how it provides for hauora and the first priority of freshwater management, the wellbeing of the waterbody. Consideration is then given respectively to the second and third priorities*".

23. Notwithstanding the above, I consider in the alternative that Appendix N could be simplified by simply referring to "waterbodies identified in Schedule X". In this regard, there is no need for Appendix N to keep repeating reference to "degraded waterbodies" or "waterbodies requiring improvement" (to clarify, reference to "degraded waterbodies requiring improvement" should remain in Policy 16 and the title of Schedule X if this approach is taken up).

24. I remain unconvinced that improvements in farming practice as provided for through the FEMP default content will result in sufficient improvement in water quality in the interim period – in respect of the catchments and contaminants identified in the JWS Science 2019 as being degraded. From a planning perspective I consider relying on Good Management Practices alone will not be sufficient to provide for hauora and will compound the difficulty of formulating and implementing the level of intervention that will be required by Plan Change Tuatahi. Effectively, the less intervention now will result in more dramatic (and more expensive) intervention later. Regarding costs, I observe a parallel argument is provided by Mr McCallum Clark[22] in his finding for increased costs associated with the agreed amendments to Rule 13 (sub-surface drains):

> With respect to the detailed assessment of benefits, costs and risks set out in section 32(2), I am of the opinion that including more precision in the water quality standards will result in a more efficient outcome. Environmental improvement can be driven by the application of these standards, which are less reliant on subjective judgements. It is highly likely that some existing sub-surface drainage systems will not be able to meet these more specific standards, and will require improvement, which will have environmental, cultural and social benefits, but at a short to medium term cost primarily to farmers. **These benefits and costs will likely occur in any event**, as the timeframes and outcomes for water quality improvement are refined under the NPSFM freshwater planning process.[23]

[21] EiC @ at par 21

[22] EiC @ para 32

[23] **Bold text** is my emphasis

25. I doubt Plan Change Tuatahi will provide any silver bullets. Its primary role will be to identify FMU specific freshwater objectives and targets (including load reduction requirements and associated timeframes) and refine the pSWLP methods for managing land use to implement the FMU specific freshwater objectives and targets.

Intensive Winter Grazing Rule 20B(a)(iii)(2)) – Setbacks from Waterways

26. In my EiC[24] I outlined support for a 20m setback, based on the recommendations of Ms McArthur and subject to an assessment of any further technical evidence.

27. I understand most experts providing evidence on this matter, now including Ms McArthur, support a 10m setback distance (when comparing the options of 5m and 20m respectively). On reflection of all the evidence and appreciating the setback only applies to IWG on flat and low sloping land[25], I agree a 10m setback from waterways set out in Rule 20B(a)(iii)(2)) is appropriate on the basis that, in addition to the setback rule, an FEMP will also be required to demonstrate how IWG will not be undertaken in CSAs and nutrient and sediment losses into water from IWG will need to be avoided or reduced to the smallest amount reasonably practicable. Site-specific requirements for larger setbacks can be identified through FEMPs, including where ecological values in waterbodies require this, as Ms McArthur describes.

28. Ms Kirk[26] also observed that Ms McArthur and I may have an outstanding area of concern about setting back IWG from critical source areas, and that *"clarification from Ms McArthur and Mr Farrell of their concerns and preferred wording of provisions may further assist the Court".* In response, to clarify:

    a. My concern is that IWG nearby CSAs will result in adverse effects on water quality so the provision of a vegetation buffer area between IWG and CSA will minimise risks to water quality.

    b. I am not supporting any specific amendments to the IWG setback distances from CSAs under Rule 20B(a)(iii)(2)). Rather, the management of buffer areas between IWG and CSAs will be identified in respective FEMP processes, as required '*to avoid where practicable, or otherwise minimise inputs of nutrients, sediment and faecal*

[24] EiC @ pars 97-98

[25] Rule 20A(a)(ii) does not permit IWG on land sloping more than 10 degrees meaning a resource consent process will be applied to manage the IWG and associated effects on a case-by-case basis.

[26] s274 Evidence @ par 37

contaminants to ground and surface water' (Objective 5(d) coupled with the requirements of sections 6 and 7 respectively).

Pasture Wintering (intensive winter grazing on pasture)

29. I remain supportive of ensuring the pSWLP rules manage pasture wintering that removes the "armouring" benefit of pasture (significant devegetation) in a similar way to IWG. This is because of the potential risks on water quality from pasture wintering.

30. While some pasture wintering activities have less risk than IWG[27], these lower risk activities still present a risk to water quality. Mr Monaghan identifies that these "lower risk" activities may cause adverse effects, and these can potentially be commensurate with IWG.

31. Mr Willis[28] outlines the relevance of the animals' diet in relation to managing impacts on water quality. I question the relevance of diet when because the environmental issue to focus on arises when there is exposure of large areas of bare soil to the extent that this requires re-sowing. My concern is whether the grazing over the winter period results in devegetation of the overlying pasture, which "armours" the soil, irrespective of stock diet. When this armouring is stripped away by intensive grazing practices over the winter period (when soils are saturated) the potential for sediment and nutrient loss, and therefore risk to water quality, is high.

32. I am not convinced of the merits of regulating any intensive grazing practices involving pasture during winter months only through a FEMP, as suggested by Ms Dally[29]. In my opinion the risks to water quality from the activity warrant measurable and enforceable standards to regulate it in the same or similar way as IWG.

33. I understand the intent of the rule proposed by Fish & Game is not to capture all grazing of pasture by stock over the winter period or capture very minor pugging incidental to the grazing activity and I acknowledge Ms Dally's concern in this regard.

34. Ms Dally's comment that changing the definition of IWG as I recommended in my EiC "will have a significant impact on the operation of dairy farms across the Southland region for variable reduction in nutrient and sediment loss to

[27] Monaghan EiC (par 15a), Willis s274 Evidence (pars 6.3 & 6.4) ~~As identified in the evidence of Ms Dally, Mr Duncan, and Mr Willis REFERNCE??~~

[28] Willis s274 Evidence @ par 6.8~~REFERNCE??~~

[29] Dally s274 Evidence pars 58-64~~REFERNCE??~~

water"[30] is likely to be overstating the consequences of amending the definition, especially compared to the current scenario under the OWP which currently regulates intensive winter grazing on both crops and pasture through application of the following definitions:

> **Intensive winter grazing**
>
> Grazing of stock between May and September inclusive on fodder crops or pasture to the extent that the grazing results in significant devegetation. This is usually associated with break feeding behind temporary electric fencing.
>
> **Significant devegetation**
>
> Removal of, or damage to, vegetation caused by stock access or grazing that results in the exposure of large areas of bare ground and/or pugging of the soil.

35. Notwithstanding the above, upon reflection of the evidence of others I support an alternative definition or an associated environmental standard, which together:

    a. Ring fences (does not overlap with) the definition of IWG as defined in the NPS-FM

    b. Focuses on protecting the soil armoring benefits of pasture (or minimises the exposure of bare soil / devegetation)

    c. Avoids the issue of requiring identification of a spatial area of pugging or exposure of bare soil, which is inherently problematic.

    d. Manages this activity in the same or similar way to IWG.

36. The JWS Planning and evidence of other experts such as Mr Wilson and Ms Taylor propose a definition of "High Risk Winter Grazing on Pasture". As an alternative I proposed the subject activity be called "pasture wintering" (as identified in the evidence of Mr McCallum-Clark, and defined as:

> **Pasture Wintering**
>
> Means intensively grazing livestock on pasture and / or supplements at any time in the period that begins on 1 May and ends with the close of 30 September of the same year where:
>
> (i) The density of livestock means pasture or other vegetative ground cover cannot be maintained; and
>
> (ii) The resulting damage caused to the soil by pugging is so severe as to require resowing with pasture or forage crop species.

[30] Dally s274 Evidence pars 1 and 12~~REFERNCE??~~

37. The above definition is an amalgamation of existing terms / terminology used in the NES-FW to define intensive winter grazing, sacrifice paddocks and stock holding areas.

38. Another option could be to refer to a specific post grazing residual mass standard to replace clauses (i) and (ii) of my suggested definition above. I am attracted to this option because it could provide a more measurable and certain metric. However, I am unclear what mass (kg DM/ha) would reflect (i) and (ii) above, and I would need to rely on input and clarification from farming experts to confirm the practically of this alternative option.

39. A small point, Mr Willis[31] says "the issue of winter grazing livestock on pasture (as opposed to crop) was discussed at planning conferencing but the planners were unable to agree a response. From my perspective, that was because of a lack of evidence about the nature and scale of the activity at issue and the risk and effect it is having on freshwater." For the record, that reflects Mr Willis' view of deliberations within the conference, and not my view. As discussions within expert conferencing are meant to be confidential, I will not comment further on this.

Cultivation setbacks from waterways (Rule 25)

40. Ms McArthur is recommending a buffer of 10 m for slopes up to 10 degrees, and 20 metres for slopes of 10 to 20 degrees. I observe that Mr Burrell's evidence[32] is that:

    a. In the JWS Science 2021 it was agreed that: (i) the buffering effect of a setback increases with setback width, and that on slopes below 10 degrees riparian setbacks of 10 m would provide greater fine sediment removal than the 5 m setback proposed in the pSWLP; and (ii) a wider setback may be required on steeper slopes.

    b. Ms McArthur has recommended a setback of 10m on slopes below 10 degrees and a 20 m setback on slopes greater than 10 degrees.

    c. Choosing a setback distance requires a compromise between protecting ecosystem health and maximising land available for farming.

    d. Setback distances for cultivation in the pSWLP will improve the existing level of protection for ecosystem health and water quality.

[31] EiC @ par 6.1

[32] EiC @ pars 17-23

e. The available evidence suggests increasing the setback distances further, from 5m to 10m for slopes below 10 degrees and from 10m to 20m for steeper slopes would add an additional layer of protection.

f. Wider setbacks can be considered long-term goals, taking into account opportunity costs (i.e. loss of productive farmland). This could take the form of an initial 5 or 10 m setback with all stock excluded from the setback, then increasing the setback distance to 10 or 20 m over time.

41. While there are opportunity costs associated with requiring wider buffers for cultivation, I consider that the priority given to water by TMOTW means that evidence about the protection afforded by a wider setback for cultivation should be given greater weight than the opportunity cost of farming within 5m and 20m of waterways respectively.

Management of CSAs

42. I concur with Mr McCallum-Clark[33] about the need to manage CSAs. The Farm Systems JWS 1 identifies that grazing of CSA's represents elevated risk:

> *10. Are some critical source areas riskier than others?*
>
> Yes. Refer to above. Some examples of riskier CSAs are:
>
> 1. grazed winter forage crops, where plant cover has been removed and soil has been subjected to treading damage, or
> 2. near-stream animal camping areas, where large quantities of animal excreta may be deposited.

43. I understand the above comment reflects work by Ross Monaghan at Telford, which found that that losses of sediment, phosphorous and E. coli associated with intensive winter grazing of forage crop by dairy cows could be significantly reduced through protection of the CSA's, which typically accounted for less than 2.5% of total paddock area.

44. I agree with Mr McCallum-Clark[34] (and all planners except Ms Ruston) that the term *"ephemeral flow path*" should be included in the definition of critical source area. Not all swales, gullies or depressions will have ephemeral characteristics, and in my opinion, it is important to recognise and distinguish ephemeral characteristics of some swales, gullies or depressions.

45. Mr Duncan provides examples of some difficulties and associated costs associated with managing critical source areas on a farm in the Waituna lagoon catchment. He (and presumably the dairy interests) appears to be

[33] EiC @ pars 47, 90-92

[34] EiC @ pars 47, 90-92

saying that these changes in land use are not appropriate and CSAs should continue to be able to be grazed by cattle during winter periods. On the contrary, I expect the type of changes (and associated costs) identified in Mr Duncan's evidence are likely to be required, across Southland, if the quality of freshwater is to be improved to the point where it is no longer degraded[35].

Appendix N

46. Numerous experts have raised concerns with my recommended additions to the Objectives in Appendix N. The concerns revolve around:

    a. Duplication of matters already listed in Appendix N.

    b. The suggestion that some of the matters, particularly around the idea of demonstrating an understanding of mauri, ki uta ki tai and hauora will be incapable of practical application/interpretation and the need for all of the content of FEMPs to be clear and concise so as not being left open to interpretation.

47. In respect of duplication, I agree some of the additional matters I proposed create some duplication, and I have proposed amendments to address this.

48. At 55.2 Ms Taylor notes that my proposed degraded waterbody objective is not necessary as the FEMP appendix already accommodates the requirements articulated in the proposed objective. I do not agree and I maintain it is appropriate for the FEMP objectives (Part B(5)) to contain specific objectives relating to the outcomes to be elaborated on by Part B(6), including in respect of the specific matters identified in Table 2 of the JWS Science 2021 which are not specifically identified in Appendix N. I would add that the evidence of Ms Wilkes and Ms Ruston (for example) highlight the need for the content of FEMP's to be clear and not open to interpretation/subjectivity. I recall also Mr McCallum-Clark's comment on the benefits of including more precision in water quality standards, including that it will result in a more efficient outcome. In this regard, articulating the matters identified in Table 2 of the JWS Science 2021 in the FEMP objectives section provides more certainty and should minimise confusion.

49. Ms Taylor[36] says:

> Mr Farrell, at paragraph 75 of his evidence, suggests that the proposed 'ki uta ki tai and hauora' objective, which was the additional objective suggested within the Science JWS (at Table 2), and subsequently considered by the farm system experts, was 'missed'

[35] Insofar as "degraded" was interpreted in the JWS Science 2019.

[36] s274 Evidence @ par 56

> by the planners when considering amendments to Appendix N. This is not the case. The proposal contained in the Science JWS was specifically considered and discussed during the second planning expert conferencing (held on 9 and 10 December 2021). The planners, as a result of this discussion, agreed that it was more appropriate, from a planning perspective, to address the issues raised in the way agreed in the Planning JWS (as I have discussed in paragraph 55.3), rather than as now suggested by Mr Farrell.

50. While the Science JWS was specifically considered and discussed during the second planning expert conferencing (held on 9 and 10 December 2021) I do not agree we (planners) agreed it was more appropriate to address the issues raised in the way agreed in the Planning JWS. I remain of the opinion we (planners) missed some of the matters the experts identified should be in Appendix N, as identified by Ms McArthur.

51. Ms McArthur[37] has also identified there are some minor differences between what the experts recommended in the 2021 Science JWS and my recommended amendments and suggested that *"faecal contaminants and the attributes (three bullets alongside Human health aspects in Table 2) should also be added to Appendix N or elsewhere in the Plan*". I agree with Ms McArthur as to the additional matters identified in the JWS Science 2021 which are yet to be included in Appendix N. I consider these should also be included in Appendix N.

52. In respect of the concerns raised strongly by other experts regarding the inclusion of references to hauora and ki uta ki tai:

    a. Ms Taylor[38] identifies that the FEMP objectives have been drafted to be directive and to also be clear to lay people, so it is clear what their obligations are and suggests the provisions for lay people are "unclear and confusing".

    b. Of the planners who commented on my recommendations I observe Ms Kirk is generally supportive (subject to refining the drafting) and Mr McCallum-Clark[39] demonstrates some support/sympathy (he is "attracted to the idea of increased knowledge of ki uta ki tai and hauora by landowners and farm operators" but he goes on to reject my suggestion because of practicalities of timely preparation, certification and auditing of FEMP and is concerned that rural professionals involved in the FEMP processes will not be sufficiently skilled to certify and audit these elements. Mr McCallum-Clark[40] identifies that speed is of the

[37] Rebuttal evidence @ par 33

[38] s274 Evidence @ par 55.1

[39] EiC @ par 155

[40] EiC @ pars 155-156

essence in making improvements through the FEMP process and does not appear to be able to support the additional matters without some clarity as to how the clauses will practically operate and will not lead to further uncertainty and delay.

c. I accept that the provisions could be refined to be clearer and less confusing. I have provided a refined list of additional objectives below. The extent to which inclusion of these clauses may create uncertainties or delays in the FEMP process is unclear, but I would have thought any uncertainties or delays associated with addressing these concepts can be mitigated and are acceptable overall. For example, I am aware of industry professionals and organisations (for example Thriving Southland) that are actively resourcing engagement and upskilling of rural people and professionals, inclusive of learnings about concepts such as TMOTW, mauri, ki uta ki tai, and hauora.

d. I acknowledge my previously recommended Objective (h(ii)) in relation to people demonstrating an understanding of mauri, hauora and ki uta ki tai is problematic and was not appropriately framed as an objective. I have reframed this objective in a manner I consider is sufficiently clear and certain, as follows:

> *(g)* ***Hauora and ki uta ki tai:*** *People managing the land take action to understand ki uta ki tai and provide for hauora.*

e. The processes associated with preparing, implementing, auditing, and reviewing FEMPs are an extension of the pSWLP. I am therefore surprised other planners are critical of my suggestion that the pSWLP methods should introduce measures which require farmers to consider and take actions to move towards hauora and a ki uta ki tai approach to management. I do not agree with Mr Willis[41] that these concepts are impracticable or inappropriate to include in a FEMP. A consequence of not requiring people to at least think about (let alone action/implement) these concepts is a severing of the golden thread intended to apply from the Plan's objectives through to its methods. This outcome undermines these fundamental concepts, particularly in the Southland context where ki uta ki tai and TMOTW underpin the pSWLP and reflect the partnership between SRC and rūnunga. I am certain[42] the intention of the pSWLP regime is for farmers to understand and implement these fundamental concepts.

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[41] s274 Evidence @ pars 9.3-9.8

[42] From my experience working with SRC and TAMI in the early stages of formulating the pSWLP, and from the Court's discussion in Topic A decisions regarding its fundamental understandings regarding the pSWLP architecture.

f. I would have thought that SRC and industry professionals would be able to clarify how people managing land can take action to understand ki uta ki tai and provide for hauora. Surely it is not beyond the reach of industry experts/professionals to learn about these concepts and what they mean on-farm.

g. While I acknowledge the opposing evidence of my colleagues, I see no reason to shy away from the challenge to improve the rural industry's understandings of these concepts which are so fundamental to the management of land and water in Southland.

h. I remain of the opinion it is appropriate for farmers (and practitioners implementing and administering the pSWLP, inclusive of those preparing FEMPs) to be required to think about and at least try to implement these fundamental concepts.

53. In my EiC[43], I assessed the costs and benefits of relying on FEMPs, in place of requiring resource consents to discharge contaminants within degraded catchments. By a fine margin, I preferred the use of FEMPs. That was based in part on my understanding that those preparing, certifying and auditing FEMPs would need to understand and apply fundamental concepts including TMOTW and ki uta ki tai. Some of the evidence from some parties, opposing references to those concepts in the FEMP default content in Appendix N, do lead me to reconsider whether FEMP are capable of achieving the change needed to give effect to TMOTW and move towards hauora.

Ben Farrell

22 February 2022

[43] EiC pages 32-34

APPENDIX BF1 – RECOMMENDED AMENDMENTS AS AT

22 FEB 2022

Key:
Black text = Decisions Version of pSWLP
Black underline and ~~strike-out~~ = changes agreed through the Planning JWS
Red underline and ~~strike-out~~ = changes suggested by Matthew McCallum-Clark
Highlighted track changes – changes supported by Ben Farrell 22/02/22

B2 – Discharges

[Note Policies 13, 15A and 15B and Rule 15 are not included here, as they are subject to an affidavit already lodged with the Court]

~~Policy 15C~~

~~Following the establishment of freshwater objectives and limits under Freshwater Management Unit processes, and including through implementation of non-regulatory methods, improve water quality where it is degraded to the point where freshwater objectives are not being met and otherwise maintain water quality where freshwater objectives are being met.~~

Rule 5

(a) Except as provided for elsewhere in this Plan the discharge of any:

(i) contaminant, or water, into a lake, river, artificial watercourse, modified watercourse or natural wetland; or

(ii) contaminant onto or into land in circumstances where it may enter a lake, river, artificial watercourse, modified watercourse or natural wetland;

is a discretionary activity provided the following conditions are met:

1. where the water quality upstream of the discharge meets the standards set for the relevant water body in Appendix E "Water Quality Standards", the discharge does not reduce the water quality below those standards at the downstream edge of the reasonable mixing zone; or
2. where the water quality upstream of the discharge does not meet the standards set for the relevant water body in Appendix E "Water Quality Standards", the discharge must not further reduce the water quality below those standards at the downstream edge of the reasonable mixing zone; and
3. ~~except for discharges from a territorial authority reticulated stormwater or wastewater system,~~ the discharge does not contain any raw sewage~~; and~~

~~4. the discharge is not into any Regionally Significant Wetland or Sensitive Waterbodies listed in Appendix A~~.

Rule 13

(a) The discharge of land drainage water to water from an on-farm subsurface drainage system is a permitted activity, provided the following conditions are met:
    (i) the discharge does not cause:
        (1) a ~~conspicuous~~ change to the colour or clarity of the receiving waters beyond 20 metres from the point of discharge that exceeds the maximum percentage change specified for the relevant water body class in Appendix E; or
        (2) more than a 10% change in the sediment cover of the receiving waters beyond 20 metres from the point of discharge; or
        (3)~~(2)~~ conspicuous oil or grease films, scrums or foams, or floatable or suspended materials beyond 20 metres from the point of discharge;
    (ii) the discharge does not render freshwater unsuitable for consumption by farm animals;
    (iii) the discharge does not cause the flooding of any other landholding;
    (iv) the discharge does not cause any scouring or erosion of any land or bed of a water body beyond the point of discharge;
    (vi) the discharge does not cause any significant adverse effects on aquatic life;
    (vii) the subsurface drainage system does not drain a natural wetland; and
    (viii) for any known existing drains and for any new drains, the locations of the drain outlets are mapped and provided to the Southland Regional Council on request.
(b) The discharge of land drainage water to water from an on-farm subsurface drainage system that does not comply with Rule 13(a) is a discretionary activity.

Rule 14

(a) The discharge of fertiliser onto or into land in circumstances where contaminants may enter water is a permitted activity provided the following conditions are met:
    (i) other than for incidental discharges of windblown fertiliser dust, there is no direct discharge of fertiliser into a lake, river ~~(excluding ephemeral rivers)~~, artificial watercourse, modified watercourse, or natural wetland or into groundwater;
    (ii) there is no fertiliser discharged when the soil moisture exceeds field capacity;
    (iii) there is no fertiliser discharged directly into or within 3 metres of the boundary of any significant indigenous biodiversity site identified in a district plan that includes surface water; and
    (iv) where a lake, river ~~(excluding ephemeral rivers)~~, artificial watercourse, modified watercourse or wetland:
        (1) has riparian planting from which stock is excluded, fertiliser may be discharged up to the paddock-side edge of the riparian planting but not onto the riparian planting, except for fertiliser required to establish the planting; or

(2) does not have riparian planting from which stock is excluded, fertiliser is not discharged directly into or within 3 metres of the bed or within 3 metres of a wetland.

(b) The discharge of fertiliser onto or into land in circumstances where the fertiliser may enter water that does not meet the conditions of Rule 14(a) is a non-complying activity.

Rule 40 – Silage storage

(a) The use of land for a silage storage facility is a permitted activity provided the following conditions are met:

(ii) there is no overland flow of stormwater into the silage storage facility;

(v) no part of the silage storage facility is within:

(1) 50 metres of a lake, river ~~(excluding ephemeral rivers)~~, artificial watercourse, modified watercourse, natural wetland or any potable water abstraction point; or

(2) 100 metres of any dwelling or place of assembly, on another landholding constructed or in use prior to the silage storage facility being lawfully established; or

(3) the microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then within 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; or

(4) a critical source area; and

[rest of rule unchanged]

Topic B5 - Farming

Schedule X – Catchments of degraded waterbodies that require improvement and ecological and cultural indicators of health [new Appendix to the pSWLP]

Insert a new Appendix to the pSWLP titled "Catchments of degraded waterbodies that require improvement and ecological and cultural indicators of health" which includes:

(a) The attributes in Appendix 4 of the Freshwater Science JWS 2019

(b) The Ngai Tahu Indicators of Health November 2019

(c) A map showing the locational extent of degraded waterbodies requiring improvement (Fig 4 of Dr Snelder's evidence)

(d) A map showing the locational extent of waterbodies degraded in respect of DIN (Fig 5 of Dr Snelder's evidence)

(e) A map showing the locational extent of waterbodies degraded in respect of DRP (Fig 6 of Dr Snelder's evidence)

(f) A map showing the locational extent of waterbodies degraded in respect of Suspended Sediment (Fig 7 of Dr Snelder's evidence)

(g) A map showing the locational extent of waterbodies degraded in respect of Ecoli (Fig 8 of Dr Snelder's evidence)

(h) A map showing the locational extent of waterbodies degraded in respect of MCI (Fig 9 of Dr Snelder's evidence)

(i) A map showing the locational extent of waterbodies degraded in respect of TN (Fig 10 of Dr Snelder's evidence).

(j) A map showing the locational extent of waterbodies degraded in respect of TP (Fig 10 of Dr Snelder's evidence).

Policy 16

1. ~~Minimising~~ Avoid where practicable, or otherwise minimise, any ~~the~~ adverse environmental effects (including on the quality of water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries and salt marshes, and groundwater) from farming activities by:
   ~~(a) discouraging the establishment of new dairy farming of cows or new intensive winter grazing activities in close proximity to Regionally Significant Wetlands and Sensitive Water bodies identified in Appendix A; and~~
   ~~(b) ensuring that, in the interim period prior to the development of freshwater objectives under Freshwater Management Unit processes, applications to establish new, or further intensify existing, dairy farming of cows or intensive winter grazing activities will generally not be granted where:~~
      ~~(i) the adverse effects, including cumulatively, on the quality of groundwater, or water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries and salt marshes cannot be avoided or mitigated; or~~
      ~~(ii) existing water quality is already degraded to the point of being overallocated; or~~
      ~~(iii) water quality does not meet the Appendix E Water Quality Standards or bed sediments do not meet the Appendix C ANZECC sediment guidelines; and~~
   ~~(c) ensuring that, after the development of freshwater objectives under Freshwater Management Unit processes, applications to establish new, or further intensify existing, dairy farming of cows or intensive winter grazing activities:~~
      ~~(i) will generally not be granted where freshwater objectives are not being met; and~~
      ~~(ii) where freshwater objectives are being met, will generally not be granted unless the proposed activity (allowing for any offsetting effects) will maintain the overall quality of groundwater and water in lakes, rivers, artificial watercourses, modified watercourses, wetlands, tidal estuaries and salt marshes.~~

(b) ensuring that, ~~for~~ existing farming activities:

(i) minimise nitrogen, phosphorus, sediment and microbial contaminant discharges ~~are minimised~~;

(ii) reduce adverse effects on water quality where the farming activity occurs within the catchment of a degraded waterbody that requires improvement identified in Schedule X; and

(iii) demonstrate how (i) and (ii) is being or will be achieved through the implementation of Farm Environmental Management Plans prepared in accordance with (c) below and in addition,

(ba) ensuring that ~~for~~ the establishment of new, or further intensification of existing, dairy farming of cows or intensive winter grazing or pasture wintering activities:

(i) does not result in an increase in nitrogen, phosphorus, sediment and microbial contaminant discharges; and

(ii) minimises nitrogen, phosphorus, sediment or microbial contaminant discharges; and

(iii) reduces nitrogen, phosphorus, sediment or microbial contaminant discharges where it ~~the farming activity~~ occurs in a ~~within the~~ catchment of a degraded waterbody that requires improvement identified in Schedule X; and

(iv) is avoided in close proximity to Regionally Significant Wetlands and Sensitive Water bodies identified in Appendix A; and

(c)~~2.~~ requiring all farming activities~~, including existing activities,~~ to~~:~~

~~(i)~~ be undertaken in accordance with ~~implement~~ a Farm Environmental Management Plan~~, as set out in Appendix N;~~ that ~~which~~:

(1) identifies whether the farming activity is occurring, or would occur, in a catchment of a degraded waterbody that requires improvement identified in Schedule X;

(2) identifies and responds to the contaminant pathways (and variants) for the relevant Physiographic Zones;

(3) sets out how adverse effects on water quality from the discharge of contaminants from farming activities will be minimised or, where the farming activity is occurring in a catchment of a degraded waterbody that requires improvement identified in Schedule X, reduced;

(4) is certified as meeting all relevant requirements of this plan and regulation ~~prepared~~ under Part 9A of the RMA; and

(5) is independently audited and reported on;

(ii)~~(b)~~ ~~actively manage~~ avoid where practicable, otherwise minimise sediment run-off risk from farming and hill country development activities by identifying critical source areas and implementing actions and maintaining practices including setbacks from water bodies, sediment traps, riparian planting, limits on areas or duration of exposed soils and the prevention of stock entering the beds of surface water bodies; and

(iii)~~(c)~~ ~~manage~~ avoid where practicable, otherwise minimise collected and diffuse run-off and leaching of nutrients, microbial contaminants and sediment through the identification and management of critical source areas and the contaminant pathways identified for the relevant

Physiographic Zones (and variants) within individual properties.

2.~~3.~~ When considering a resource consent application for farming activities, consideration should be given to the following matters:

(a) whether multiple farming activities (such as cultivation, riparian setbacks, and winter grazing) can be addressed in a single resource consent; and

(b) granting a consent duration of at least 5 years where doing so is consistent with Policy 40.

Minimise means to reduce to the smallest amount reasonably practicable.

Policy 18

~~Reduce~~ Avoid where practicable, or otherwise remedy or mitigate, any adverse effects from the discharge of sediment~~ation and~~ or microbial ~~contamination of~~ contaminants to water bodies and improve river ~~(excluding ephemeral rivers)~~ and riparian ecosystems and habitats by:

1. requiring progressive exclusion of all stock, except sheep, from lakes, rivers ~~(excluding ephemeral rivers)~~, natural wetlands, artificial watercourses, and modified watercourses on land with a slope of less than 15 degrees by 2030;

2a. requiring the management of sheep in critical source areas and in those catchments where *E.coli* levels could preclude contact recreation;

3. encouraging the establishment, maintenance and enhancement of healthy vegetative cover in riparian areas, particularly through use of indigenous vegetation; and

4. ensuring that stock access to lakes, rivers ~~(excluding ephemeral rivers)~~, natural wetlands, artificial watercourses and modified watercourses is managed in a manner that avoids ~~significant~~ adverse effects on water quality, bed and bank integrity and stability, mahinga kai, and ~~river~~ aquatic and riparian ecosystems and habitats~~.~~; and

5. showing, in a Farm Environmental Management Plan prepared and implemented in accordance with Appendix N, how 1-4 will be achieved and by when.

Rule 20

~~(aa) Unless stated otherwise by Rules 20, 25, 70 or any other rule in this Plan:~~

~~(i) intensive winter grazing; or~~

~~(ii) cultivation; or~~

~~(iii) the disturbance by livestock including cattle, deer, pigs or sheep;~~

~~in, on or over the bed of an ephemeral river is a permitted activity.~~

(a) The use of land for a farming activity, other than for intensive winter grazing or pasture wintering, is a permitted activity provided the following conditions are met:

(i) the landholding is less than 20 hectares in area; or

(ii) where the farming activity includes a dairy platform on the landholding, the following conditions are met:

(1) the dairy platform has a maximum of 20 cows; or

(2) the dairy platform had a dairy effluent discharge permit on 3 June 2016 that specified a maximum number of cows; and

(3) cow numbers have not increased beyond the maximum number specified in the dairy effluent discharge permit that existed on 3 June 2016; and

(4) ~~from 1 May 2019,~~ a Farm Environmental Management Plan for the landholding is prepared, certified, ~~and~~ implemented and audited in accordance with Appendix N; and

~~(5) the landowner provides to the Southland Regional Council on request:~~

~~(A) a written record of the good management practices, including any newly instigated good management practices in the preceding 12 months, occurring on the landholding; and~~

~~(B) the Farm Environmental Management Plan prepared in accordance with Appendix N;~~

(6) the land area of the dairy platform is no greater than at 3 June 2016; and

~~(7) no part of the dairy platform is at an altitude greater than 800 metres above mean sea level; and~~

~~(iii) where the farming activity includes intensive winter grazing on the landholding, the following conditions are met:~~

~~(1) from 1 May 2019, intensive winter grazing does not occur on more than 15% of the area of the landholding or 100 hectares, whichever is the lesser area;~~

~~(2) from 1 May 2019, a Farm Environmental Management Plan for the landholding is prepared and implemented in accordance with Appendix N;~~

~~(3) from 1 May 2019, all of the following practices are implemented:~~

~~(A) if the area to be grazed is located on sloping ground, stock are progressively grazed (break-fed or block-fed) from the top of the slope to the bottom, or a 20 metre 'last-bite' strip is left at the base of the slope;~~

~~(B) when the area is being break-fed or block-fed, the stock (excluding sheep and deer) are back fenced to prevent stock entering previously grazed areas;~~

~~(C) transportable water trough(s) are provided in or near the area being grazed to prevent stock accessing a lake, river (excluding ephemeral rivers), artificial watercourse, modified watercourse or natural wetland for drinking water;~~

~~(D) if supplementary feed (including baleage, straw or hay) is used in the area being grazed it is placed in portable feeders;~~

~~(E) if cattle or deer are being grazed the mob size being grazed is no more than 120 cattle or 250 deer; and~~

~~(F) critical source areas (including swales) within the area being grazed that accumulate runoff from adjacent flats and slopes are grazed last;~~

~~(4) from 1 May 2019, a vegetated strip is maintained in, and stock excluded from, the area between the outer edge of the bed of a lake, river (excluding ephemeral rivers where intensive winter grazing is permitted under Rule 20(aa)), artificial watercourse, modified watercourse or natural wetland for a distance of at least 5 metres;~~

~~(5) from 1 May 2019, intensive winter grazing does not occur within 20 metres of the outer edge of the bed of any Regionally Significant Wetland or Sensitive Water Bodies listed in Appendix A, estuary or the coastal marine area; and~~

~~(6) no intensive winter grazing occurs at an altitude greater than 800 metres above mean sea level; and~~

(iii)~~(iv)~~ for all other farming activities~~, from 1 May 2020~~ a Farm Environmental Management Plan is prepared, certified, ~~and~~ implemented and audited in accordance with Appendix N.

(iv) no part of the dairy platform occurs at an altitude greater than 800 metres above mean sea level.

~~(b) The use of land for a farming activity that includes intensive winter grazing on the landholding and which meets all conditions of Rule 20(a) other than condition (iii)(3) is a permitted activity, provided that:~~

~~(i) from 1 May 2019, a vegetated strip is maintained in, and stock excluded from, the area between the outer edge of the bed of a lake, river (excluding ephemeral rivers where intensive winter grazing is permitted under Rule 20(aa)), artificial watercourse, modified watercourse or natural wetland for a distance of at least 20 metres.~~

~~(b)~~(c) ~~Despite any other rule in this Plan, the use of land for a dairy platform or intensive winter grazing at an altitude greater than 800 metres above mean sea level is a prohibited activity.~~

~~(d)~~(c) The use of land for a farming activity, other than for intensive winter grazing or pasture wintering, that ~~meets all conditions of Rule 20(a) other than (i), (ii), (iii)(1),(iii)(4) or (iii)(5) or~~ does not meet ~~condition (i) of Rule 20(b)~~ any one of conditions (ii)(1)-(6) or (iii) of Rule 20(a) is a restricted discretionary activity, provided the following conditions are met:

(i) a Farm Environmental Management Plan is prepared certified, ~~and~~ implemented and audited in accordance with Appendix N; and

(ii) the application includes the following material, prepared by a suitably qualified person:

(1) an assessment that shows that the ~~annual amount~~ risk of nitrogen, phosphorus, sediment and microbiological contaminants being discharged from the landholding will be no greater than the risk of contaminant discharge ~~that~~ which was lawfully discharged ~~annually~~ on average for the five years prior to the application being made; and

(2) for any mitigation proposed, a detailed mitigation plan (taking into account contaminant loss pathways) that identifies the mitigation or actions to be undertaken including any physical works to be completed, their timing, operation and their potential effectiveness.

The Southland Regional Council will restrict its discretion to the following matters:

1. the quality of and compliance with the Farm Environmental Management Plan for the landholding;
2. whether the assessment undertaken under Rule20~~(d)~~(c)(ii) above takes into account reasonable and appropriate mitigation actions ~~good management practices~~ to minimise the losses of contaminants from the existing farming activity;

2(a). whether the farming activity is being undertaken in a catchment of a waterbody ~~that requires improvement~~ identified in Schedule X, and if so, the mitigations actions to be implemented to reduce adverse effects on water quality;

3. mitigation actions ~~good management practices~~ to be undertaken, including those to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land, taking into account contaminant loss pathways;
4. the potential benefits of the activity to the applicant, the community and the environment;
5. the potential effects of the farming activity on surface and groundwater quality and sources of drinking water; and
6. monitoring and reporting undertaken to assess the effectiveness of any mitigation implemented.

~~(e)~~(d) The use of land for a farming activity ~~that is not specified as a permitted, restricted discretionary or prohibited activity under~~ which is not a restricted discretionary activity under Rule 20(c) is a ~~discretionary~~ non-complying activity.

(e) The use of land for a farming activity that does not comply with Rule 20(a)(iv) is a prohibited activity

New definition – pasture wintering

Pasture Wintering: Means intensively grazing livestock on pasture and / or supplements at any time in the period that begins on 1 May and ends with the close of 30 September of the same year where:

(i) The density of livestock means pasture or other vegetative ground cover cannot be maintained; and

(ii) The resulting damage caused to the soil by pugging is so severe as to require resowing with pasture or forage crop species.

Rule 20A

(a) Intensive winter grazing and pasture wintering is a permitted activity provided the following conditions are met:

(i) intensive winter grazing or pasture wintering does not occur on more than 50ha or 10% of the area of the land holding, whichever is the greater; and

(ii) the slope of land that is used for intensive winter grazing or pasture wintering must be 10 degrees or less; and

(iii) livestock must be kept at least:

(1) 20 metres from the bed of any Regionally Significant Wetland or Sensitive Water Bodies listed in Appendix A, nohoanga listed in Appendix B, mātaitai reserve, taiāpure, estuary or the coastal marine area; and

(2) 10 metres from the bed of any other river, lake, artificial watercourse (regardless of whether there is any water in it at the time), modified water course or natural wetland; and

(iv) critical source areas within the area being intensively winter grazed must:

(1) be identified in the Farm Environmental Management Plan; and

(2) have stock excluded from them; and

(3) not be cultivated into forage crops for intensive winter grazing or pasture wintering; and

(v) the land that is used for intensive winter grazing or pasture wintering must be replanted as soon as practicable after livestock have grazed the land's annual forage crop; and

(vi) a Farm Environmental Management Plan for the landholding is prepared and implemented in accordance with Appendix N, that also includes a grazing plan that includes:
(1) downslope grazing or a 20 metre 'last-bite' strip at the base of the slope; and
(2) back fencing to prevent stock entering previously grazed areas; and
(3) transportable water troughs; and

(vii) no intensive winter grazing or pasture wintering occurs at an altitude greater than 800 metres above mean sea level; and

(b) The use of land for intensive winter grazing or pasture wintering that does not meet conditions (a)(i)-(vi) of Rule 20A is a restricted discretionary activity provided the following conditions are met:
(i) a Farm Environmental Management Plan is prepared and implemented in accordance with Appendix N; and
(ii) the area used for intensive winter grazing or pasture wintering on the property is no greater than the average area used on the property for the five years prior to the application being made;

The Southland Regional Council will restrict its discretion to the following matters:

1. the quality of and compliance with Appendix N and the Farm Environmental Management Plan for the landholding;
2. whether the intensive winter grazing or pasture wintering activity is being undertaken in a catchment of a waterbody ~~that requires improvement~~ identified in Schedule X, and if so, the mitigation actions to be implemented to improve water quality;
3. mitigation actions and good management practices to be undertaken, including those to minimise the discharge of nitrogen, phosphorus, sediment and microbiological contaminants to water from the use of land, taking into account contaminant loss pathways;
4. the potential benefits of the activity to the applicant, the community and the environment;
5. the potential effects of the farming activity on surface and groundwater quality and sources of drinking water;
6. monitoring and reporting undertaken to assess the effectiveness of any mitigation implemented.

(c) The use of land for intensive winter grazing or pasture wintering that does not meet conditions of Rule 20A(b) is a non-complying activity.

(d) The use of land for intensive winter grazing or pasture wintering that does not meet condition (vii) of Rule 20A(a) is a prohibited activity.

Slope in Rule 20A is the average slope over any 20-metre distance.

Rule 25

(a) The use of land for cultivation is a permitted activity provided the following conditions are met:
(i) cultivation does not take place within the bed of a lake, river ~~(excluding ephemeral rivers where cultivation is permitted under Rule 20(aa))~~, artificial watercourse, modified watercourse or natural wetland;
(ii) cultivation does not take place within a distance of: ~~5 metres from the outer edge of the bed of a lake, river (excluding ephemeral rivers~~

~~where cultivation is permitted under Rule 20(aa)) artificial watercourse, modified watercourse or natural wetland;~~

(1) 105 metres from the outer edge of the bed of a lake, river, or modified watercourse or the edge of a natural wetland on land with a slope of less than 10 degrees; and

(2) 2010 metres from the outer edge of the bed of a lake, river, or modified watercourse or the edge of a natural wetland on land with a slope between 10 and 20 degrees;

(iii)~~(iv)~~ cultivation does not occur on land with a slope greater than 20 degrees~~.~~[64]; and

(iv)~~(iii)~~ cultivation does not occur at an altitude greater than 800 metres above mean sea level; and

(v) critical source areas are not cultivated when forage crops used for intensive winter grazing or pasture wintering are established and sediment detention is established when cultivating critical source areas for any other purpose; and

(b) The use of land for cultivation that does not meet the setback distance of Rule 25(a)(ii)(2) is a permitted activity provided the following conditions are met:

(i) cultivation does not take place within ~~the bed of a lake, river (excluding ephemeral rivers where cultivation is permitted under Rule 20(aa)), artificial watercourse, modified watercourse or natural wetland and~~ a distance of 5 ~~3~~ metres from the outer edge of the bed of a lake, river, or modified watercourse or the edge of a natural wetland;

(ii) cultivation does not take place more than once in any 5-year period;

(iii) cultivation is for the purpose of renewing or establishing pasture and is not undertaken to establish a crop used for intensive winter grazing or pasture wintering, even as part of a pasture renewal cycle; and

(iv) all other conditions of Rule 25(a) are complied with ~~cultivation does not occur at an altitude greater than 800 metres above mean sea level~~.

(c) The use of land for cultivation, which does not meet one or more of the conditions of Rule 25(a) or Rule 25(b) is a restricted discretionary activity. ***The Southland Regional Council will restrict its discretion to the following matters:***

1. potential adverse effects of discharges of sediment and other contaminants from the area being cultivated on water quality and biodiversity;

1a. potential adverse effects on the preservation of the natural character of wetlands, lakes, rivers and their margins.

2~~1a~~. mitigation measures for addressing adverse effects identified in 1 and 1a.~~; and~~

2a. the management of critical source areas in the area being cultivated.

3. monitoring and reporting undertaken to assess the effectiveness of any mitigation implemented.

(d) Despite any other rule in this Plan, the use of land for cultivation at an altitude greater than 800 metres above mean sea level is a non-complying activity.

Slope in Rule 25(a)(ii) and (iii) ~~(iv)~~ is the average slope over any 20 metre distance.

Rule 35A

(a) The use of land for a feed pad/lot is a permitted activity provided the following conditions are met:

~~(i) if accommodating cattle or deer, each feed pad/lot services no more than 120 adult cattle, or 250 adult deer, or equivalent numbers of young stock at any one time;~~

~~(ii) animals do not remain on the feed pad/lot for longer than three continuous months;~~

(iii) the feed pad/lot is not located:

(1) within 50 metres from the nearest sub-surface drain, lake, river ~~(excluding ephemeral rivers),~~ artificial watercourse, modified watercourse, natural wetland, or the coastal marine area ~~or another feed pad/lot on the same landholding~~; or

(2) within a microbial health protection zone of a drinking water supply site identified in Appendix J, or where no such zone is identified, then within 250 metres of the abstraction point of a drinking water supply site identified in Appendix J; or

(3) within 200 metres of a place of general assembly or dwelling not located on the same landholding, or

(4) within 20 metres of the boundary of any other landholding; or

(5) within a critical source area;

(iv) the feed pad/lot is constructed with:

(1) a sealed and impermeable base and any liquid animal effluent or stormwater containing animal effluent discharging from the feed pad/lot is collected in a sealed animal effluent storage system authorised under Rule 32B or Rule 32D; or

(2) a minimum depth of 500 millimetres of wood-based material (bark, sawdust or chip) across the base of the feed pad/lot; and

(v) any material scraped from the feed pad/lot, including solid animal effluent, is collected and if applied to land is applied in accordance with Rule 38; and

(vi) the overland flow of stormwater or surface runoff from surrounding land is prevented from entering the feed pad/lot.

(b) The use of land for a feed pad/lot that does not meet one or more of the conditions of Rule 35A(a) is a discretionary activity.

Rule 35B

(a) The use of land for a sacrifice paddock is a permitted activity provided the following conditions are met:

(i) animals do not remain on the feed pad/lot for longer than 60 days in any six month period;

(ii) the slope of land that is used for a sacrifice paddock must be 10 degrees or less; and

(iii) livestock must be kept at least 50 metres from:

(1) any nohoanga listed in Appendix B, mātaitai reserve, taiāpure, estuary or the coastal marine area; and

(2) the bed of any river, lake, artificial watercourse (regardless of whether there is any water in it at the time), modified water course or natural wetland; and

(iv) critical source areas within the area being used as a sacrifice paddock must:
(1) be identified in the Farm Environmental Management Plan; and
(2) have stock excluded from them; and
(v) the land that is used as a sacrifice paddock must be replanted as soon as practicable after livestock have been removed from the paddock; and
(vi) a Farm Environmental Management Plan for the landholding is prepared and implemented in accordance with Appendix N; and
(vii) no part of the sacrifice paddock is located on land with an altitude greater than 800 metres above mean sea level.

(b) The use of land for a sacrifice paddock that does not meet one or more of the conditions of Rule 35B(a) is a discretionary activity.

Rule 51

(e) The diversion of water from a natural wetland ~~for the purpose of land drainage~~ is a non-complying activity

Rule 70

(a) ~~From 1 July 2020,~~ The disturbance of roosting and nesting areas of the black fronted tern, black billed gull, banded dotterel or black fronted dotterel located in the bed of a lake, river (including ephemeral flow paths), ~~(including an ephemeral river),~~ modified watercourse, or natural wetland by stock including cattle, deer, pigs or sheep is a prohibited activity.

(b) ~~From 1 July 2020,~~ The disturbance of the bed of a Regionally Significant Wetland or Sensitive Water Body listed in Appendix A by stock including cattle, deer, pigs or sheep is a prohibited activity.

(c) The disturbance of the bed of a river ~~(excluding ephemeral rivers where stock access is permitted under Rule 20(aa))~~ or modified watercourse for the purposes of moving stock including cattle, deer, pigs or sheep (but excluding dairy cattle on a dairy platform or on land used for dairy support) is a permitted activity provided the stock are being supervised and are actively driven across the water body in one continuous movement.

(ca) The disturbance of the bed of a lake, river or modified watercourse by sheep, other than as regulated by Rule 70(a) and 70(b), is a permitted activity, provided the following conditions are met:
(i) the waterbody is not already fenced to prevent sheep access;
(ii) the sheep are not being break fed or intensively winter grazed;
(iii) there is no significant de-vegetation leading to exposure of soil of the bed and banks, pugging or alteration to the profile of the bed and banks, other than at fords or stock crossings; and
(iv) a Farm Environmental Management Plan for the landholding is prepared, certified, implemented and audited in accordance with Appendix N, and shows how access by sheep will be managed;

(cb) The use of land within a natural wetland or the disturbance of the bed of a water body within a natural wetland for access or grazing by stock is a non-complying activity.

(d) Bed disturbance activities that do not comply with Rule 70(c) are a non-complying activity.

(e) Other than as provided for by Rules 70(c), 70(ca) and 70(d), the disturbance of the bed of a lake, river ~~(excluding ephemeral rivers where~~

~~stock access is permitted under Rule 20(aa)),~~ modified watercourse, open drain, or ~~natural wetland~~ by cattle, deer or pigs is a permitted activity prior to the dates set out in Table 1 for the listed land slopes after which time it is respectively a discretionary activity on that land.

Table 1: Timetable for stock exclusion from water bodies

	Land slope (as classified by the LRI slope dataset)		
Farm/stock type	**Plains (0-3°)**	**Undulating/rolling land (>3-15°)**	**Steeper land (>15° and over)**
Dairy cattle (on dairy platforms) and pigs	All water bodies (including open drains) that are: • over 1 metre wide from 1 July 2017 on all slopes • less than 1 metre wide from 1 July 2020 on the plains and undulating/rolling land		
Dairy support ~~(on either land owned/leased by the dairy farmer or third party land)~~	All water bodies, and open drains from 1 July 2022	All water bodies, and open drains over 1 metre wide from 1 July 2022	All water bodies, and open drains where break feeding occurs from 1 July 2022
Beef cattle and deer	All water bodies (including open drains) from 1 July 2025	All water bodies (including open drains) over 1 metre wide from 1 July 2030, unless the average stocking rate on the land directly adjacent to the water body is less than 6 stock units per hectare	
	All water bodies (including open drains) where break feeding or supplementary feeding occurs from 1 July 2022.		

Rule 78

Insert the following in clause (a)(xiv):

(a)(xiv) The modified watercourse is not a habitat of threatened native fish

OR remove the permitted activity standards altogether:

i. a) The removal of aquatic weeds and plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall, and any associated bed disturbance and discharge resulting from carrying out the activity, is a permitted activity provided the following conditions are met: (ai) general conditions (e), (f), (g), (h) and (l) set out in Rule 55A;

ii. (i) the activity is undertaken solely to maintain or restore the drainage capacity of a modified watercourse that has previously been modified or maintained for drainage maintenance

or restoration purposes at that location; (ii) the activity is restricted to the removal of aquatic weeds and plants or sediment deposits;

iii. (iia) the removal of river bed material other than aquatic weeds, plants, mud or silt is avoided as far as practicable;

iv. (iii) any incidental bed disturbance is only to the extent necessary to undertake the activity and must not result in lowering of the bed below previously modified levels;

v. (iv) upon completion of the activity, fish passage is not impeded as a result of the activity;

vi. (v) the operator takes all reasonable steps to return any fish captured or stranded by the activity to water immediately;

vii. (vi) between the beginning of June and the end of October, there is no disturbance of the spawning habitat of trout; and

viii. (xii) where the modified watercourse is spring-fed, removal of aquatic weeds and plants is only to the extent that is necessary to undertake the activity and is kept to the absolute minimum.

ix. ~~(b)~~ The removal of aquatic weeds and plants and sediment from any modified watercourse for the purpose of maintaining or restoring drainage outfall and any associated bed disturbance and discharge resulting from the carrying out of the activity ~~that cannot meet one or more of the conditions of Rule 78(a)~~ is a discretionary activity.

Critical source area

(a) a landscape feature like a gully, swale or a depression (including ephemeral flow paths) that accumulates runoff (sediment and nutrients) from adjacent flats and slopes, and delivers it to surface water bodies (including lakes, rivers, artificial watercourses and modified watercourses) or subsurface drainage systems.; and

(b) a non-landscape feature that has high levels of contaminant losses, such as, silage pits, fertiliser storage areas, stock camps and laneways.

~~(b) areas which arise through land use activities and management approaches (including cultivation and winter grazing) which result in contaminants being discharged from the activity and being delivered to surface water bodies.~~

Cultivation

Preparing land for growing pasture or a crop by mechanical tillage, direct drilling, herbicide spraying, or herbicide spraying followed by over-sowing for pasture or forage crops (colloquially referred to as 'spray and pray'), but excludes: ~~excluding any~~

a. herbicide spraying undertaken solely for the control of pest plant species;
b. herbicide spraying for the establishment or maintenance of plantation forestry; and
c. stick raking or slash raking associated with a plantation forest

~~Ephemeral rivers~~

~~Rivers which only contain flowing or standing water following rainfall events or extended periods of above average rainfall.~~

Feed pad/lot

A fenced in or enclosed area located on production land used for feeding or loafing of cattle or deer to avoid damage to pasture when soils are saturated, and which can be located either indoors or outdoors. It includes ~~'sacrifice paddocks'~~, wintering pads, stand-off pads, calving pads, loafing pads, and self-feed silage storage facilities.

[Note that this definition was not included in the Planning JWS]

Appendix N

A Farm Environmental Management Plan must be:

(1) A Freshwater Farm Plan prepared, implemented and audited in accordance with regulations prepared under Part 9A of the RMA and which apply within the Southland region, plus any additional information or components required by Parts B (3) and (6)(b) as below; or

(2) If Freshwater Farm Plans, under Part 9A of the RMA, are not yet required in the Southland region, a Farm Environmental Management Plan prepared and implemented in accordance with Parts A to C below.

Part A – Farm Environmental Management Plans

A Farm Environmental Management Plan (FEMP) can be based on either of:

1. the ~~material~~ default content set out in Part B below; or
2. industry prepared FEMP templates and guidance material, with Southland-specific supplementary material added where relevant, so that it includes the default ~~material~~ content set out in Part B below; ~~or~~
3. ~~A management plan and nutrient budget prepared in accordance with a condition of resource consent to discharge industrial wastewater onto land that is also used for farming activity, provided it includes the material set out in Part B below in relation to each farm receiving industrial wastewater~~.

Part B – Farm Environmental Management Plan Default Content

~~1. A written FEMP that is:~~

~~(a) prepared and retained, identifying the matters set out in clauses 2 to 5 below; and~~

~~(b) reviewed at least once every 12 months by the landholding owner or their agent and the outcome of the review documented; and~~

~~(c) provided to the Southland Regional Council upon request.~~

2. The FEMP contains the following landholding details:

(a) physical address; and

(b) description of the landholding ownership and the owner's contact details; and

(c) legal description(s) of the landholding; and

(d) a list of all resource consents held for the landholding and their expiry dates~~.~~; and

(e) The type of farming activities being undertaken on the property, such as "dairy" or "sheep and beef with dairy support".

3. The FEMP contains a map(s) or aerial photograph(s) of the landholding at a scale that clearly shows the locations of:

(a) the boundaries; and

(b) the physiographic zones (and variants where applicable) and soil types (or Topoclimate South soil maps); and

(c) all lakes, rivers~~,~~/streams (including intermittent rivers), springs, ponds, artificial watercourses, modified watercourses and natural wetlands; and

(d) all existing and proposed riparian vegetation and fences (or other stock exclusion methods) adjacent to waterbodies; and

(e) places where stock access or cross water bodies (including bridges, culverts and fords); and

(f) the location of all known subsurface drainage system(s) and the locations and depths of the drain outlets; and

(g) all land that may be cultivated and land to be cultivated over the next 12-month period; and

~~(h) all land that may be intensively winter grazed and the land to be planted for winter grazing for the next period 1 May to 30 September; and~~

(h) all critical source areas not already identified above; and

(i) ~~for~~ land to be cultivated or intensively winter grazed, or break fed on pasture between 1 June and 31 July, and the slope[1] of the land and intended setbacks from any lake, river, artificial watercourses, modified watercourse or natural wetland and any other critical source areas; and~~:~~

~~(i) critical source areas; and~~

~~(ii) intended setbacks from any lake, river (excluding ephemeral or intermittent rivers), artificial watercourses, modified watercourse or natural wetland; and~~

~~(iii) land with a slope greater 20[1] than degrees~~

(j) any areas of the land within a catchment of a waterbody ~~that requires improvement~~ identified in Schedule X; and

(k) any heritage site recorded in the relevant district plan, on the New Zealand Heritage List/Rārangi Kōrero or on the New Zealand Archaeological Association website; and

(l) the presence of taonga species listed in Appendix M within water bodies on the farm (if known); and

(m) other significant values and uses (if known) on nearby land and waters.

4. Nutrient Budget/Nutrient Loss Risk Assessment

For all landholdings over 20ha, the FEMP contains either:

(a) a nutrient budget (which includes nutrient losses to the environment) calculated, using a ~~the latest version of the OVERSEER~~ model ~~in accordance with the latest version of the OVERSEER Best Practice Data Input Standards (or an alternative model nutrient loss assessment tool~~ approved by the Chief Executive of Southland Regional Council); or

(b) a nutrient loss risk assessment undertaken using a nutrient loss risk assessment tool approved by the Chief Executive of Southland Regional Council~~)~~; and the Nutrient Budget or Nutrient Loss Risk Assessment is repeated: ~~which is repeated:~~

(~~a~~1) where a material change in land use associated with the farming activity occurs (including a change in crop area, crop rotation length, type of crops grown, stocking rate or stock type) at the end of the year in which the change occurs, and also every three years after the change occurs; and

(~~b~~2) each time the nutrient budget or nutrient loss risk assessment is repeated all the input data used to prepare it shall be reviewed by or on behalf of the landholding owner, for the purposes of ensuring the nutrient budget or nutrient loss risk assessment accurately reflects the farming system. A record of the input data review shall be kept by the landholding owner; and

(~~c~~3) the nutrient budget or nutrient loss risk assessment must be prepared by a suitably qualified person that has been approved as such by the Chief Executive of Southland Regional Council.

5. Objectives of Farm Environmental Management Plans

A description of how each of the following objectives will, where relevant, be met:

(a) **Irrigation system designs and installation**: To ensure that all new irrigation systems and significant upgrades meet Industry best practice standards;

(b) **Irrigation management**: To ensure efficient on-farm water use that meets crop demands, including through upgrading existing systems to meet Industry best practice standards, and ensuring that water and contaminant losses to waterbodies are avoided where practicable or otherwise minimised;

(c) **Nutrient and soil management**: To avoid where practicable, or otherwise minimise, nutrient, faecal contaminants, and sediment losses from farming activities to ground and surface water, to maintain or improve water quality such that within a catchment identified in Schedule X the ecological and cultural health of the waterbody become less degraded;

(d) **Waterways and wetland management**:

To manage activities within and nearby waterways, critical source areas, natural wetlands, and their margins, ~~by~~ in a manner that:

(i) avoids~~ing~~ stock damage;

(ii) avoidsing where practicable, or otherwise minimisesing inputs of nutrients, sediment and faecal contaminants to ground and surface water;

(ii) retains instream debris for habitat and providing natural forms of waterways such as keeping winding shape and variations in depth and velocity;

(iii) restores riparian vegetation with consideration of biodiversity;

(ix) identifies and protects fish spawning habitat;

(x) removes fish passage barriers, with the exception of barriers introduced for protecting native fish;

(xi) seeks to avoid piping of waterways;

(xii) reduces faecal contamination (E. coli) to the lowest possible level and avoiding human faecal contamination of water;

(i) takes into account the connectivity between land and water, including effects on downstream waterbodies;

(ii) takes into account ephemeral head water streams, springs and other waterbodies (including wetlands): where they are located on farm and the linkages between them;

(iii) provides for indigenous species that may be present in waterways, including in particular taonga and mahinga kai species (listed in Appendix M);

(iv) takes into account the current state of cultural and environmental health of waterbodies relative to the attributes and thresholds identified Schedule X;

(v) addresses the extent of fine deposited sediment in farm waterways and changes in this through time;

(vi) adopts best practice drain maintenance; and

(xiii) protects human and cultural health.

(e) **Collected agricultural effluent management**: To manage collected agricultural effluent in accordance with best industry practice, to ensure contaminants derived from collected agricultural effluent do not cause adverse effects on water quality.

(f) **Drainage maintenance**: To manage drainage maintenance activities to ensure contaminant losses to water bodies and damage to aquatic habitats are avoided where practicable, or otherwise minimised.

The FEMP must also identify additional objectives relevant to the farming activities and/or to address environmental risks associated with the land holding and the environment within which it is located.

(g) **Hauora and ki uta ki tai**: People managing the land take action to understand ki uta ki tai and provide for hauora.

6. The description for (5) above shall include, for each relevant objective in 5 above:
   (a) an identification of the adverse environmental effects, and risks associated with the farming activities on the property, including, consideration of the risks associated with the relevant physiographic zone/s (and variants) and how the identified effects and risks will be managed ~~or~~ and mitigated; and
   (b) where the farm is located within a catchment of a waterbody ~~that requires improvement~~ identified in Schedule X, the mitigations that will achieve a reduction in the discharge of the contaminants where relevant to the farming activity that trigger the requiring improvement status of the catchment ~~(noting that in catchments of waterbodies where aquatic ecosystem health requires improvement, reductions and mitigation required will address nitrogen, phosphorus and sediment losses and the effect of those losses)~~; and
   (c) defined mitigations that clearly set a pathway and timeframe for achievement of the objectives; and
   (d) the records to be kept for demonstrating mitigations have been actioned ~~measuring performance~~ and are achieving the objective; and
   (e) identification of any specific mitigation required by a resource consent held for the property.

7. If any Intensive Winter Grazing or Pasture Wintering is occurring on the landholding, the Farm Environmental Management Plan must also include an intensive winter grazing or pasture wintering plan that takes into account and responds to the risk pathways for the relevant physiographic zones (and variants).

~~5. Good Management Practices~~
~~The FEMP contains a good management practices section which identifies:~~
~~(a) the good management practices implemented since 3 June 2016; and~~
~~(b) the good management practices which will be undertaken over the coming 12-month period. These must include practices for:~~
~~(i) the reduction of sediment and nutrient losses from critical source areas, particularly those associated with overland flow;~~
~~(ii) cultivation (including practices such as contour ploughing, strip cultivation or direct drilling);~~
~~(iii) the use of land for intensive winter grazing (including those practices specified in Rule 20(a)(iii);~~
~~(iv) riparian areas (including those from which stock are excluded under Rule 70) and the type of riparian vegetation to be planted, how it will be maintained and how weeds will be controlled;~~
~~(v) minimising of the discharge of contaminants to surface water or groundwater, with particular reference to the contaminant pathways identified for the landholding.~~

~~Examples of general good management practices are provided on the Southland Regional Council, Dairy NZ and Beef and Lamb New Zealand websites and in the document146 titled "Industry-agreed Good Management Practices relating to water quality, Version 2, 18 September 2015".~~

Part C – Farm Environmental Management Plan Certification, Auditing, Review and Amendment

1. Farm Environmental Management Plan Certification
   (a) The FEMP must be certified, prior to implementation on the farm, by a Suitably Qualified Person (SQP) that has been approved as such by the Chief Executive of Southland Regional Council.
   (b) The purpose of FEMP certification is to confirm that the farming activities on the farm will be carried out in a way that will achieve the Objectives in this Appendix and will comply with any resource consent for the property.
   (c) The FEMP must be re-certified, prior to implementation, following any amendments to the FEMP carried out in accordance with Part C(3)(a) of this appendix.
   (d) Within one month of a FEMP being certified, a copy of the certified FEMP must be provided to the Southland Regional Council.

2. Auditing of the certified Farm Environmental Management Plan
   (a) Within 12 months of the landholding's first FEMP being certified, the landholding owner must arrange for an audit of the farming activities' compliance with the certified FEMP. Thereafter, the frequency of auditing will be in accordance with any conditions of consents held for the landholding, or alternatively, where there are no consent or consent conditions requiring auditing, auditing timeframes associated with the audit grade assigned. *Note: Southland Regional Council will provide, on its website, a schedule of the auditing frequency required for FEMP's based on the audit grade assigned to each landholding.*
   (b) The auditor must be a Suitably Qualified Person (SQP) that has been approved as such by the Chief Executive of Southland Regional Council and must not be the same person or from the same organisation that prepared the FEMP.
   (c) The auditor must prepare an audit report that:
      (i) sets out the auditor's findings;
      (ii) stating whether compliance has been achieved and the final compliance grade; and
      (iii) any other recommendations from the auditor.
   (d) Within one month, of the final audit report being prepared, the audit report must be provided to the Southland Regional Council by the auditor.

3. Review and Amendment of the Farm Environmental Management Plan
   The FEMP must be reviewed, by the landholding owner, or their agent, as follows:
   (a) when there is a material change to the nature of the farming activities occurring on the landholding, and where that material change is not provided for within the landholding's certified FEMP; and
   (b) at least once every 12 months; and
   (c) to respond to the outcome of an audit.

The outcome of the review is to be documented and amendments to the FEMP must be made where Part C(3)(a) applies and in circumstances where the annual review identifies that amendments are required.

[1.] Slope is the average slope over any 20 metre distance

54.