

Feedback: Horizons Regional Council Oranga Wai Water Quality Targets

To whom it may concern,

Beef + Lamb New Zealand (B+LNZ) thank you for the opportunity to provide feedback on the proposed Oranga Wai Water Quality Targets. Additionally, we welcome any opportunity to further discuss the content within this feedback.

B+LNZ is an industry-good body funded under the Commodity Levies Act through a levy paid by producers on all cattle and sheep slaughtered in New Zealand. Our mission is to deliver innovative tools and services to support informed decision-making and continuous improvement in market access, product positioning, and farming systems. B+LNZ's vision is 'Sustainable and profitable farmers, thriving rural communities, valued by New Zealanders'. An important part of B+LNZ is investing in farmers' capability and capacity to support a vibrant, resilient, and profitable sector. B+LNZ is actively engaged and working to ensure that the industry supports an ethos of environmental stewardship. Protecting and enhancing New Zealand's natural capital and economic opportunities through a holistic approach to environmental management is fundamental to the sustainability of the sector and New Zealand's well-being for current and future generations.

Agriculture is the foundation of the region's economy with sheep, beef, and deer farming comprising 44% of the Horizons regions' land use¹. Therefore, it is imperative that the Council adequately engages with sheep and beef farmers throughout the region to ensure that the water quality targets and attribute states are reasonable and achievable without decimating the region's rural communities and economy.

While B+LNZ has endeavoured to highlight some broader concerns, please note that the online survey is more appropriate for farmers to individually voice their opinions and feedback based on their experiences farming and living in the Horizons Region. The feedback provided below is B+LNZ staff level feedback rather than a formal submission, it should not be taken as representative of feedback from sheep and beef farmers in the Horizons Region. B+LNZ reserves the right refine and amend our views as formal processes progress. We welcome the opportunity to discuss these topics further. If you have further questions in relation to the feedback provided in this response, please do not hesitate to contact myself.

Kind Regards,

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¹ Horizons Regional Council. Regional State of the Environment Summary 2020-21. July 2021.
<https://www.horizons.govt.nz/HRC/media/Media/Regional-Catchment-Summary-2020-21.pdf?ext=.pdf>

B+LNZ, along with other sector bodies, is seriously concerned about the proposed water quality targets and the implications that this could have on rural communities. B+LNZ's concerns are highlighted throughout this feedback document.

As the new coalition government has extended the due date for plan notification from 31 Dec 2024 out to the end of 2027, it is imperative that Horizons Regional Council utilises this time to complete comprehensive community engagement, accurate economic analysis, and robust modelling. We also note the significant uncertainty on the next steps with national level freshwater policy. The Government has signalled changes to the National Policy Statement for Freshwater Management (2020) (NPS-FM) and the Stock Exclusion Regulations (2020), but we don't know what these changes will be. This makes it difficult to provide feedback as we are unsure how it will align with national direction – including the Te Mana o Te Wai hierarchy of obligations, which is as fundamental planning concept. The potential for misalignment is a significant concern to B+LNZ, and we would support the Council if it decided to delay the planning process pending greater certainty.

Lack of cost/benefit analysis

The proposed water quality targets and modelled reductions and actions lack appropriate economic analysis at this stage. While we understand this is planned as part of the Section 32 analysis, when the updated One Plan is notified, we're concerned that the proposed targets will have serious effects on the financial viability of many farming businesses. The proposed target attribute states are unachievable in some areas and could lead to vast land use change from pastoral systems, especially low intensity sheep and beef farms, into pine plantations and decimate rural communities throughout the region. It is important the Council takes the time to get this right. For this reason, we strongly urge Council to utilise the extended deadline to notify the new OnePlan.

Given that sheep and beef farming is the predominant land use in the region, the effects of this on the region's economy could be huge. Many sheep and beef farms are intergenerational family businesses that need certainty to be able to carry out planning for the future generation and apply for further borrowing if available. Sheep and beef systems are highly interconnected with close commercial relationships between hill country breeding and low-land finishing farm operations, as well as the many businesses that support the sector. We are concerned about the flow on effects that this may have on the wider primary industry sector in the Horizons Region given the highly interconnected nature of different farming systems and the food and fibre sector in the region.

Te Mana o te Wai interpretation

To reiterate previous feedback given by B+LNZ on the draft visions, values, and objectives specifically regarding the application of the Te Mana o te Wai hierarchy of obligations, B+LNZ believes that despite priority 1 referring to the health and well-being of water we need to ensure that all priorities are adequately provided for. The hierarchy may set the order of priority, but it does not exclude the health needs of people and the social, economic, and cultural well-being as priorities.

In relation to priority 2 it needs to be noted that drinking water is only an example of what the health needs of people could be. Freshwater is vital for human health beyond just drinking water. B+LNZ strongly recommends the Council recognises the relationship between water and land for sustained farming activities, while balancing the prioritisation of the health and wellbeing of freshwater ecosystems.

Each FMU story on the Council's Oranga Wai website begins with *"the stories of the river and the humans who live alongside it are intertwined."*² Yet, we have heard from members of rural communities that attended the Council's roadshow events across the region throughout November 2023 that community wellbeing was barely mentioned at these meetings. This is extremely disappointing and demonstrates poor community consultation. The wellbeing of people, whether it be health needs, social, cultural, or economic, is still a priority that must be balanced and provided for.

Timeframes:

Requirements of the NPS-FM are to set *"ambitious and reasonable"* goals and to identify timeframes for these goals that are also ambitious and reasonable. While these targets and long-term vision statements are certainly ambitious, B+LNZ does not believe that the target attribute states and associated reductions of contaminants to achieve the long-term vision statements, or the suggested timeframes to meet these in many subzones are reasonable due to the adverse effects that could be imposed on rural communities and the region's economy. As mentioned above, the proposed target attribute states are unachievable in some areas and could lead to vast land use change from pastoral systems. This does not reflect the values of many rural communities that live alongside and interact with waterbodies.

The Oranga Wai website notes that *"in the Horizons Region, the lag time for rivers and streams is typically 0-13 years at low flows... We also know it takes time (about 15-20 years) for communities to embrace and adopt new mitigation actions at a meaningful rate. Even if actions are required under regulations, it can still take a few years for communities to navigate and implement what they need to do"*³. Furthermore, research by McDowell *et al* (2021)⁴ which has been used by Horizons to inform these water quality targets, states that *"the average time to peak adoption of agricultural innovation in Australasia is around 16–20 years. However, it is also likely that some typologies would be subject to long lag-times, which will increase the time before changes in water quality following the adoption of mitigation actions are observed downstream. For instance, tortuous flow paths in the central plateau of the North Island can lead to lag times of 60–100 years between N being lost from the root zone and a significant proportion appearing in nearby streams"*. Therefore, the proposed timeline of achieving all FMU long-term visions across the region by 2055 is inappropriate, unachievable, and not in line with the ambitious and reasonable direction of the NPS-FM. It is unacceptable that Horizons have used such research to inform their water quality targets yet have ignored vital parts of its findings. The Council need to recognize that there are lengthy lag-times between implementing a strategy and seeing water quality gains, and the timeframes should be amended to reflect that achieving these targets will take multiple generations.

Modelling concerns

B+LNZ has concerns about the accuracy of the nutrient modelling. The modelling for total nitrogen and total phosphorus has only been done for the four major river basins – the Manawatū, Rangitīkei, Whanganui, and Whangaehu. The technical report, Manawatū-Whanganui Region Catchment Nutrient Models: Model Updates, states that *"this is four*

² Horizons Regional Council Oranga Wai website <https://freshwater.horizons.govt.nz/policy/freshwater-management-units> accessed on 27 November 2023

³ Horizons Regional Council Oranga Wai website <https://haveyoursay.horizons.govt.nz/waterqualitytargets/potential-actions> accessed on 13 Feb 2023.

⁴ McDowell, R. W., Monaghan, R. M., Smith, C., Manderson, A., Basher, L., Burger, D. F., ... & Depree, C. (2021). Quantifying contaminant losses to water from pastoral land uses in New Zealand III. What could be achieved by 2035?. *New Zealand Journal of Agricultural Research*, 64(3), 390-410.

*areas that may be made up of multiple catchments that are not necessarily connected*⁵. For example, the entire Puketoi ki tai and Waiopehu FMU's have been modelled as part of the Manawatu River Basin. Furthermore, the nitrogen and phosphorus modelling are based off data from only 55 water quality monitoring sites across the entire region.

The provisional targets show that large proportion of nitrogen reduction is required to meet target attribute states for periphyton. However, B+LNZ does not agree that nuisance periphyton growth is caused by nitrogen alone. There are many other factors that could drive periphyton growth, such as warm temperatures, and low river flows to name a few. The target attribute states for nitrogen are unreasonable, and unachievable, and alone will not result in a reduction of nuisance periphyton growth. Furthermore, the measured periphyton biomass in a number of water management subzones currently meet the provisional target attribute states for periphyton biomass⁶. Yet the reductions proposed do not reflect this.

In terms of sediment, the Ministry for the Environment (MfE) notes in Guidance for Implementing the NPS-FM Sediment Requirements⁷ that *"errors and uncertainties within a model propagate at each step in the modelling process. A small error in input data can snowball into a substantial error in outputs. MfE highlight that there are considerable errors in load estimation from monitored water quality and flow data, particularly where water quality data is restricted to monthly grab samples and may not represent the full range of flows"*. MfE's advice, as a key recommendation in this guidance document, is to *"improve the current level of sediment monitoring and to collect flow data concurrently at sediment monitoring sites."*

E.coli modelling suggests that *"Even to achieve the target grade for band C would require a three-fold reduction of the load from the region if the C₉₅ attribute is included in the grading. If C₉₅ is not included, then the load reduction associated with the C target is reduced, from 3.0 to 1.7. The results highlight the high load reductions required to achieve high E. coli grades, especially when C₉₅ is considered. It is clear from the scenario modelling that neither of the mitigation scenarios could achieve that level of reduction."*⁸ This demonstrates that the use of the 95th percentile (C₉₅) for human contact, meaning that water bodies are suitable for human contact, i.e. swimming, 95% of the time is unachievable. Moreover, using the 95th percentile is inappropriate as rivers are not suitable for contact recreation all year round due to a variety of other factors other than *E.coli* such as during the winter months when it is too cold for swimming, or during high flows during and after rainfall events when the river flows make swimming unsafe. The use of the 50th percentile (C₅₀) is more appropriate and would still achieve the targets while avoiding unnecessary impacts on farming businesses.

These points highlight substantial concerns and the proposed reductions required have been applied to smaller subzones/water management zones based on modelling from a catchment that is not connected due to a lack of spatial and temporal monitoring data. Water management subzones may have different topography, underlying geology, soils, climatic conditions etc. Consequently, there is a significant lack of justification for the proposed reductions required at the subzone level. Along with differences is geographic features, different farming practices can also result in different contaminant losses. This means that the same farming systems and practices occurring on different soil types and underlying geology or in different climates can result in different degrees of contaminant

⁵ Manawatū-Whanganui Region Catchment Nutrient Models: Model Updates. Supporting Regional Land and Water Management. August 2022.

⁶ State and trends for water quality in rivers, lakes, coastal and estuary sites in the Manawatū-Whanagnui Region. For the period ending 30 June 2022.

⁷ Ministry for the Environment. 2022. Guidance for implementing the NPS-FM sediment requirements. Wellington: Ministry for the Environment.

⁸ Regional modelling of *E. coli* to support implementation of the NPS-FM. Stage 2 Technical Report. July 2023.

loss. Therefore, reductions in contaminant losses for one subzone should not be modelled based on the 'nearest neighbour' due to lack of data available.

Not all best management practices or mitigations modelled by Horizons will be appropriate for every farm and therefore, it should not be assumed that these will all be implemented on every farm. These may not result in the desired outcomes and could in fact lead to unintended consequences. Sheep and beef farms are incredibly complex, as explained above. B+LNZ supports the use of good management principles, rather than a list of practices, and can provide further information on good management principles.

We understand that the NPS-FM requires local authorities to use the best information available at the time. However, it is imperative that Horizons Regional Council increases the number of water quality monitoring sites across the region and ensure that more catchments are monitored, building robustness. It is also important that flexibility is built into the updated One Plan, given the lack of spatial coverage that currently exists, as highlighted above. For example, interim targets could be considered to allow time for more monitoring sites to be established and larger data sets to develop. This may help to ensure that as monitoring data, science and trends evolve, targets can be re-evaluated to ensure that they are fair and achievable, whilst preventing unnecessary and dire economic, environmental, social, and cultural consequences which impact communities; both locally, regionally, and nationally.

B+LNZ has heard anecdotally from farmers that there are many nuances and unique pockets of land scattered throughout the region. Even going down to the smaller subzones, as the Council has done (noting our concerns about the modelling as mentioned above), does not adequately address the unique nature and environment of individual farming systems. Broadly, B+LNZ recommends reductions of contaminants and mitigations should be risk based and well-targeted. Farm environment plans could be the primary vehicle for tailoring appropriate risk mitigation actions, rather than harsh targets which are unlikely to achieve the desired results. This is because sheep and beef farming systems are complex and diverse. As described above, no two farms are the same. The reductions required and the mitigations which will be most effective will vary between farms.

As mentioned above, the required date for notification of the plan has been extended to 31 Dec 2027. B+LNZ hopes that the Council uses this time to address these significant concerns as far as possible. In Jan 2024 the Horizons website was updated to explain that the provisional targets were reviewed, and some errors were identified, which lead to some water management subzones having their targets and reductions required revised. While we appreciate that the Council has noted the errors, apologised, and amended some targets, this does not give us any further confidence in the modelling used and highlights the fact that this process has been rushed.

Natural form and character concerns

The aesthetics of a waterbody should not be placed in tier one (or tier two) of the Te Mana o te Wai hierarchy. Horizons has provided limited justification for the target attribute states and it seems that periphyton is being addressed to achieve the natural form and character value due to concerns of nuisance algae. B+LNZ does not support this interpretation of natural form and character value. Furthermore, this does not align with the long-term visions of communities which focus on the health of a catchment and species living in water bodies. This is overly stringent, particularly in highly modified catchments that produce food and fibre products.

The C band for periphyton (chlorophyll-a) has been determined to achieve the compulsory value of Ecosystem Health. B+LNZ consider that this will also provide for any aesthetic

requirements. Therefore, the use of a periphyton A or B bands for the purpose of achieving natural form and character should be removed.

Specific FMU concerns

The following are only a few examples of the nuances and unique circumstances throughout the region and should not be interpreted as all of the concerns facing those farming and living in these FMU's. B+LNZ strongly recommends that the Council engages directly with farmers and catchment community collectives/catchment groups throughout the region to gain a better understanding of the unique farming systems and impacts that these targets could have on the ground.

The Puketoi ki Tai FMU

There are only 2 water quality monitoring sites in the Puketoi ki tai FMU, yet the Councils Oranga Wai website states the name Puketoi ki Tai means "*from the range to the coast... highlighting the distinct features of the landscape*"⁹. This further demonstrates the inappropriateness and uncertainty of the modelling and proposed reductions required in this FMU.

The Whanganui FMU

This FMU covers a vast and diverse range of landscapes, including the National Park with water sources coming from Mount Ruapehu which are naturally high in phosphorus and other attributes due to its volcanic nature. This needs to be considered when setting target attribute states and the naturally occurring process allowed for in the NPS-FM (subpart 3, 3.32) must be utilised in these circumstances.

Many rural communities in this FMU have already seen large areas of land use change into pine trees and are worried that the proposed targets will exacerbate this further.

It should be noted that the Whanganui River Catchment Collective is already working with local iwi on many initiatives to make positive water quality improvements and uphold Te Awa Tupua, the personhood of the Whanganui River.

The Whangaehu FMU:

As mentioned earlier, the lag times in the central plateau are particularly lengthy (60-100 yrs for N)¹⁰ and with the Whangaehu river beginning from the volcano's crater lake, can be highly acidic. The volcanic geology in the headwaters of this FMU also means some streams have naturally high phosphorus levels. As with the Whanganui FMU, this needs to be considered when setting target attribute states and the naturally occurring process allowed for in the NPS-FM (subpart 3, 3.32) must be utilised in these circumstances.

The Waiopahu FMU:

The modelled scenarios of mitigations that Horizons has used for this FMU based on the technical report: The Waiopahu FMU Water Quality Model¹¹ neglect ("*for simplicity*") an

⁹ Horizons Regional Council Oranga Wai website

<https://storymaps.arcgis.com/collections/dd71368524a64ca88a76b10f20d963c8?item=3> accessed on 23 November 2023

¹⁰ McDowell, R. W., Monaghan, R. M., Smith, C., Manderson, A., Basher, L., Burger, D. F., ... & Depree, C. (2021). Quantifying contaminant losses to water from pastoral land uses in New Zealand III. What could be achieved by 2035?. *New Zealand Journal of Agricultural Research*, 64(3), 390-410.

¹¹ The Waiopahu FMU Water Quality Model A tool for simulating catchment nutrient management options August 2022.

important component of the research used to inform the provisional targets - environmental typology, which includes climate, topography, and soil type. It is unacceptable that the information and data provided has not been used as it was intended. This once more, demonstrates that this process has been rushed.

Conclusion

The picture being painted is frightening for many farming businesses. The Council's own modelling data is depicting that even with full adoption of mitigations and best management practices it is impossible to meet some of the targets. If targets cannot be achieved by good or best management practices, then the targets are unrealistic to begin with.

Against this background and considering the Governments intentions to amend the NPS-FM, B+LNZ urge Horizons to halt this planning process until the direction of the Governments freshwater reforms become clear. This will also allow Horizons to take the time required to address the concerns highlighted throughout this feedback, especially to complete robust, and accurate economic analysis and modelling, and importantly to engage further with rural communities who will be doing the grunt work to achieve any future water quality targets. The risk of misaligned fundamental planning concepts at the national and regional level is a significant concern and could lead to disastrous effects on sheep and beef businesses and the regional economy.