ACTION FOR HEALTHY WATERWAYS – CONSULTATION

Have your say

The Government is asking New Zealanders for their views on proposals to stop freshwater health getting worse and to restore waterways to a healthy state in a generation. We have prepared a discussion document setting out the proposals, which is available on our website. We recommend you refer to the discussion document when completing your submission. You can find our discussion document at the following address:

We have engaged with a wide range of stakeholders to develop the proposals and are keen to hear your views on them.

We have grouped the questions from the discussion document by theme, but if you want to answer a specific question, please note the question number from the discussion document in your submission. You do not need to answer all of the questions. Supporting documents may also be attached to your submission.

Personal Information

* indicates required fields
Who Are We?

Rangitata South Irrigation Limited (RSIL) manages an irrigation scheme at Arundel delivering water to over 40 shareholders, covering 13,200 ha between the Rangitata and Orari Rivers (see map below).

Our shareholders are a mix of dairy, dairy support, arable, and sheep and beef operators. Since our scheme first started delivering water in 2014, we have ensured our shareholders operate their farms at Good Management Practice and above through the implementation of Farm Environment Plans and Audits.

The Canterbury Land and Water Regional Plan (LWRP) has also been operational in our area since 2012. The LWRP is a “hold the line” regional plan, which limits land use intensification, requires consents for farming activities and implementation of Good Management Practice nitrogen loss rates.
Canterbury Regional Council (CRC) have also recently notified Plan Change 7 of the LWRP, which introduces further nitrogen loss reductions for our shareholders.

The hydrology of the scheme command area is dominated by alluvial gravels and silts, where groundwater and river water are strongly connected\(^1\). Groundwater from the plains is fed from rainfall in the foothills and the Orari and Rangitata Rivers, which in turn flow into springs near the coast. Water quality in the lowland springs is therefore closely connected to land use on the plains and strongly correlated to water quality in groundwater.

While we recognise groundwater quality (and therefore lowland spring quality) has been declining over the past 20 years, it is important to note historic nitrate levels in the groundwater and lowland springs were around 4 ppm (Figure 1). It is also important to note groundwater quality has improved since the scheme became operative in 2014.

Figure 1: Example of Groundwater Quality Data for the Rangitata Orton Groundwater Zone\(^2\)

Our community has invested heavily in the development of the farming systems in our area. In total, Rangitata South Irrigation Scheme has spent $130M in consents, ponds and delivery networks over

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the last 20 years and our shareholders have invested a further $66M in on-farm infrastructure, including ponds and efficient irrigation systems.

With a reliable water source, our shareholders can commit to providing well paid work in our communities, supporting our schools and improving our community's overall wellbeing. The Orari area has an unemployment rate of 2.6%, compared to 7.1% for the rest of New Zealand\(^3\) with a higher average income ($33,600, compared to $28,500).

Given our experience and specific geographic context, we would like to provide feedback on some aspect of the proposed Freshwater package which affects our scheme and shareholders.

**About the Author**

Eva Harris is the Environment Manager of Irrigo Centre, an irrigation scheme resource sharing centre based in Ashburton. Eva has nearly 15 years resource management experience and holds a MSc (first class) in Applied Science, a PGDip (Resource Studies), and a PGDipSci (Chemistry) as well as completed the Kellogg Rural Leadership programme in 2017 with a project titled “Strategies for the Implementation of Sustainable Change Programmes”. Eva oversees the environmental programme for 6 irrigation schemes in mid-Canterbury, including the development and implementation of Environmental Management Systems, Farm Environment Plans and audits and extension programme for over 600 shareholders.

**General responses to the proposals**

**Proposals as a whole**

*p lease refer to questions 1-3 on page 19 of the discussion document*

Whilst RSIL supports the intent of the Freshwater package on a whole, we have concerns that the Essential Freshwater: Action for healthy waterways proposal does not recognise the Resource Management Act and the importance of managing the natural resources in a way and within timeframes that enable people and communities to provide for their social, economic and cultural wellbeing. We believe the proposal would also benefit from a greater emphasis on enabling catchment solutions which are relevant, targeted and based on risk as it would achieve outcomes more efficiently and with community engagement.

**Impacts and implementation**

*p lease refer to questions 4-6 on page 19 of the discussion document*

A bottom line of 1 ppm DIN will critically impact our thriving and vibrant communities without a corresponding improvement in ecosystem health. Setting a DIN limit of 1ppm will be counterproductive to the Government’s aim to “have put the wellbeing of New Zealanders at the heart of everything we do”\(^4\).

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We are particularly concerned that the impact of the proposed 1 ppm DIN bottom line hasn't recognised regional or spatial differences in ecosystems. There is no evidence to suggest that we would be able to achieve 1 ppm DIN in our lowland drains even with nitrogen loss reductions below that of pre-development land use in our catchment.

We are also concerned about the minimum 5 m setback from waterways and a lack of clarity around where the consents for intensification apply. We currently operate under the Land and Water Regional Planning framework in Canterbury, which already sets out a framework for managing intensification. Given the topography, climate and soils in our catchment, the setbacks required from our existing farm planning regulations will be sufficient to achieve the ecosystem health outcomes.

Lastly, we have considerable experience with Farm Environment Plans and audits of these. We do support mandatory implementation of Farm Plans and their audits, but we are not confident there is adequate lead-in time to develop the expertise required to implement this programme nationally within the proposed timeframes. We are concerned the impact these proposals will have on our ability to resource our current programme as the training and experience we have provided our staff will mean they are in high demand around the country, increasing our turnover and costs.

Questions on the proposed amendments to the National Policy Statement for Freshwater Management and ecosystem-health aspects of the proposed National Environmental Standards for Freshwater

Te Mana o te Wai

please refer to questions 9-12 on page 36 of the discussion document

RSIL support the clarity of a defined hierarchy of obligations but feel this is best served through amendment of Section 5 of the RMA, not a National Policy statement.

Water supports our people as much as our people support the water. We feel it is important to recognise the synergistic relationship between the health of our water with the health and wellbeing of our people. By setting the ecosystem health of the water above all else, we risk significant degradation of the wellbeing of the people and communities who should benefit the most from these proposals.

Proposed Relief

- The health of the water is equal to the health of the people
- Changes to the hierarchy of obligations should be through amending RMA

New planning process for freshwater and redrafted National Policy Statement

please refer to questions 17 on page 36 of the discussion document and questions 40-42 on page 53 of the discussion document

We support the need for improved planning processes to speed up the implementation of regional plans and the use of independent panels to hear and review submissions. However, our experience with operating under the ECan Act (2010) has meant planners have needed to truncate the consultation process and investigation of potential planning solutions. We have found this process has delivered poorer quality regional plans, with policies and rules created with fundamental flaws and unable to be challenged at Environment Court.
We support Barrhill-Chertsey Irrigation Limited’s submission which details their experience with the introduction of the Farm Portal in Plan Change 5 of the Land and Water Regional Plan.

We also support Canterbury Regional Council’s submission to avoid using Councillors as the community representatives on the independent hearing panels.

**Proposed Relief**
- Ensure Councillors are not included in panels to hear submissions
- Ensure significant matters of merit can still be appealed

**Nitrogen, phosphorus, and sediment attributes**

*please refer to questions 20-21 and 30-35 on pages 52 and 53 of the discussion document*

RSIL do not support the inclusion of Dissolved Inorganic Nitrogen (DIN) attribute. RSIL accepts the 1 ppm DIN limit is an appropriate limit for most waterbodies in New Zealand. However, due to natural physical features of some water bodies, and broad definition of rivers to define the limit, it is simply unattainable in some waterbodies and exceptions should be made on a case by case basis.

We support IrrigationNZ, DairyNZ and Canterbury Regional Council’s assessment of the inappropriateness of standardised limits for some attributes. In particular, we support the following comment from IrrigationNZ’s submission:

“In principle when setting national bottom lines, the following should be true:

- The attribute and its level should be effects based.
- For a single attribute to be set as a national bottom line, the resulting effect or risk of effect should be consistent across New Zealand.

It is our view that a number of national bottom lines do not meet the above principles while others do. The attributes that do in our opinion are:

- *E. coli* for contact recreation
- *Dissolved Oxygen (DO)* for ecological health
- *N Toxicity* for ecosystem health
- *Sediment effects on aquatic habitat*.  

It is our understanding the relative effects of the proposed national bottom line concentrations for DIN and DRP can range from benign to severe depending on the receiving environment and ecosystem health can vary widely with the same nutrient concentrations in different parts of the country.”

In our catchment, waterways are dominated by groundwater-fed lowland streams, which are tributaries of the Rangitata and Orari Rivers. Concentrations of attributes, such as Nitrate and Dissolved Reactive Phosphorus are completely dependent on the groundwater quality feeding into it. The groundwater quality is also sensitive to inputs from land use, therefore any reduction in

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5 We agree that sediment standards (both suspended and deposited) should be referenced to specific catchment sediment class via the River Environment Classification.

6 For instance, in rivers with warm temperatures and long accrual times.

7 Waipahi River at Cairns Peak has a median DIN level of ~1mg/L and a median MCI score of 108.3 while Waierwa at Maws Farm has a median DIN level <1mg/L and a median MCI score of 84.5. State of the Environment Surface Water Quality in Otago 2006 to 2017. ORC report available at [www.orc.govt.nz/media/6957/final_orc_soe_report_2006_to_2017.pdf](http://www.orc.govt.nz/media/6957/final_orc_soe_report_2006_to_2017.pdf)
Dissolved Inorganic Nitrogen (DIN) in the lowland streams will likely mean significant reductions in N loss from the land use activities in the entire groundwater catchment.

Prior to 1990, land use between the Rangitata and Orari Rivers was dominated by dryland extensive sheep operations, with some irrigated dairy and arable properties on the heavier soils. With the reduction in value of sheep meat and wool and a loss of government subsidies in the 1980s, sheep farming became uneconomic and farmers in the area sought out irrigation to enable land use change to build resilience and improve financial sustainability of their (mostly) family owned farms.

Monitoring of groundwater quality during this time generally showed nitrate levels\(^8\) between 3-10\(\text{ppm}\). While it is recognised land use change has impacted on nitrate levels in both the groundwater, this has not been seen in the ecosystem health monitoring of all the lowland streams.

RSIL support Canterbury Regional Council, IrrigationNZ and Amuri Irrigation Collective's submissions questioning the robustness of the science behind the 1ppm DIN limit, in particular the lack of consideration of the context of the physical nature of the waterbody. While there are general correlations between periphyton growth and elevated DIN levels, there is significant variation depending on the flows and bed of the waterway, availability of other limiting nutrients, and physical habitat. Due to these variabilities, we are concerned about the appropriateness of a single standardised national bottom line for a DIN attribute.

As an example of the poor correlation between DIN and macroinvertebrate health, the McKinnon’s Stream in our catchment is one of the lowland streams fed by the groundwater measured above and an important habitat for both native and game fish. Water quality analysis of the McKinnon’s Stream\(^10\) reported by Land Air Water Aotearoa (LAWA) shows Total Nitrogen levels in the worst 25% of measured waterbodies (5-year average of 4.55 ppm), but a five-year average Macroinvertebrate Index (MCI) score of 103, indicating good ecosystem health. LAWA also reports very low turbidity and phosphorus levels, which will also support ecosystem health outcomes.

The McKinnon's stream is a good example where ecosystem health of the waterway is not directly correlated with increased nitrate levels and is more likely to be impacted by other attributes, such as sediment. Improvements in ecosystem health could be achieved at little cost through maintaining water flows, addressing sources of bacteria and managing sources of sediment.

By comparison, implementing a national bottom line of 1 ppm DIN will mean the entire Rangitata-Orari catchment will need to substantially reduce nitrogen losses from their current land use activities to significantly below what occurred under extensive dryland sheep operations which dominated the area prior to 1990.

Changes of this nature will have a detrimental effect on the entire fabric of the community. Alternative land uses which could achieve these reductions in nitrogen losses, such as forestry, employ significantly fewer staff, have less annual turnover, spending less in the community for goods and services and are not suitable to be planted in many areas of the Hekeao Hinds Plains due to potential wind damage. A smaller population would mean smaller schools and fewer activities, providing fewer opportunities for connection. We know isolation and a lack of connection severely impact mental health, as well as stress and loss of identity. RSIL are concerned that these wider social impacts have not been fully considered when setting a national DIN bottom line, particularly when

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\(^8\) Note in the context of groundwater-fed lowland streams, Dissolved Inorganic Nitrogen (DIN) is equal to Nitrate-Nitrate (NO\(_3\)-N).


\(^10\) Measured at Wallace’s Bridge

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the science does not support a consequential improvement in ecosystem health in our catchment from this proposal.

An example of the potential impact of a 1 ppm DIN limit is attached in the document titled *Impact of 1 ppm on Hinds/Hekeao Plains.*
Figure 2: Groundwater Monitoring Data in the Rangitata South Irrigation Scheme Command Area 1990-2015

Proposed Relief – Option 1: Maintain and Improve DIN
Our preferred relief supports Canterbury Regional Council and IrrigationNZ’s submissions to set a national bottom line of current levels in a water body, with plans in place to improve where site-specific assessments identify more applicable limits for a waterbody.

Proposed Relief – Option 2: Permit Exceptions
RSIL support the inclusion of exception criteria, where a DIN limit can be set at a toxicity level or re-evaluated through a regional planning process in particular circumstances.

Proposed Relief – Option 3: DIN Limits by River Classification
Identify appropriate DIN bottom lines by river type. RSIL believe a classification system will provide certainty in planning processes and more refined limits, however, recognising a classification system still does not fully take into account the physical context of a particular waterbody and is therefore our least preferred relief option.

Flows and metering
please refer to questions 37 and 38 on page 53 of the discussion document
RSIL support IrrigationNZ’s position on water metering and telemetry requirements.

Drinking water, stormwater, and wastewater

Drinking Water National Environmental Standards
please refer to questions 43-45 on page 56 of the discussion document
RSIL support further clarification and standardisation of drinking water source protection zones along the lines of that suggested by the PDP 2018 report Technical Guidelines for Drinking Water Source Protection Zones. However, we have shareholders located within Canterbury Community Drinking Water Protection Zones and are concerned about how these proposals will impact them.

Our primary concern is the proposed controls on land use within Zones 2 and 3 as these zones could be comprised of significant areas of private land and catchments. Restrictions on land use within some areas could have far-reaching consequences.

Secondly, RSIL are concerned the NES has indicated they would define the type of activities that must be assessed as potential risks. By defining the land use activity as a risk out of context of potential pathways for contamination may mean landowners are subject to onerous limitations without a resulting benefit in the quality of the water supply.

Lastly, RSIL are concerned consents requiring public notification may be required for existing activities. Potential impacts of existing activities should be well known, with little doubt of the risks these activities present and how they should be managed. Public notification should only apply to consents for new activities where there is greater uncertainty of the potential impacts on the water supply.

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12 River type defined as one of the 9 river classes of the NZ River Environment Classification System
13 Microbial protection zone
14 Catchment protection zone
Proposed Relief – Drinking Water Supplies

1. A full economic assessment is completed prior to implementation of onerous controls on land use for existing activities within Zones 2 (microbial protection zone) and 3 (catchment zone).

2. The NES sets out a standardised risk assessment tool which must be used by councils to identify risks and activity may have on a water supply. This tool should take into consideration the land use activities and potential pathways for contamination.

3. Public notification is only required for new activities.

Improving farm practices

Restricting further intensification

*please refer to questions 51-53 on page 80 of the discussion document*

Effects on existing consented land use activities

RSIL support the introduction for restrictions in intensification where no controls have yet been implemented through regional plans. However, RSIL and their shareholders have been operating under Plan Change 2 and Plan Change 5 of the Canterbury Land and Water Regional Plan, which limits intensification and requires sediment, phosphorus and microbial contaminants to be adequately managed to minimise impacts on waterways.

Consented nitrogen loss limits effectively control winter grazing, dairy conversions and increases in irrigation area. Controls of other contaminants, such as pathogens and sediments, are addressed and audited through Farm Environment Plans.

Obtaining a separate resource consent in order to manage winter grazing, irrigation or significant changes in land use will merely increase cost and complexity, without any further benefits to the environment.

Proposed Relief – Consents for Intensification

RSIL propose Canterbury is excluded from these requirements and any other region with operational limits on nitrogen losses and audited farm environment plans.

Management of Intensification of Commercial Vegetable Growing Activities

RSIL have a significant number of commercial vegetable growers within our catchment and do not support the requirements for all operators to obtain resource consent for increasing their productive area.

Small market gardens often have a large number of short rotation crops, which are challenging to model as Overseer’s nutrient model’s assumptions become significantly less accurate for blocks less than 4 ha in size. An Overseer nutrient budget is also complicated, as the monthly modelling inputs cannot account for the short rotation crops grown (e.g. 6 weeks). Market gardens often only supply the domestic market; therefore, they will need to grow in order to ensure fresh produce is available at a reasonable price. Requiring consent and demonstration of no increase in contaminant discharges will likely prevent growers expanding at all, which will only increase the costs of fresh produce to consumers.

RSIL’s other concern is that these requirements do not take into consideration the risk the activity may have on the environment. The majority of RSIL/RSIL vegetable growers are located on deep soils, with no waterways and impacts from their activities will be considerably less than similar activities in more sensitive catchments. It would not be an efficient use of resources to go through a
consenting process to demonstrate no effects on waterbodies which are kilometres from the property.

**Proposed Relief – Commercial Vegetable Growing Operations**

RSIL support Option 2 – New operations to be managed above Good Management Practice, however only for properties greater than 4 ha with waterways and greater than 50 ha without waterways.

**Implementation Issues**

RSIL have been working with shareholders closely to improve their environmental performance over the past 5 years. From our experience, further clarity is required about the definition of “dairy-support” if an increase above 10 ha is to be a trigger for consent. From our experience, “dairy-support” consists of a considerable range of activities from intensive winter grazing, to rearing calves and replacement stock, to growing grains for feed, and it is often interchangeable within mixed livestock operations or arable systems.

RSIL are also concerned about blanket rules requiring consent for increases in a number of activities above 10 ha, without consideration of the risk the property actually presents to the environment. In sensitive catchments, allowing changes up to 10 ha may not address issues, however in other areas, such as the Canterbury Plains, 95% of properties do not have a natural water body and these changes can occur without any potential impact on surface water quality.

**Proposed Relief – Implementation**

RSIL seek to limit consents for “dairy-support” activities to only “intensive winter grazing” activities, which is defined by the Canterbury Land and Water Regional Plan as: “…the grazing of cattle within the period of 1 May to 30 September, where the cattle are contained for break-feeding of in-situ brassica and root vegetable forage crops or for consuming supplementary feed that has been brought onto the property.”

**Farm plans and Audits**

*please refer to questions 54-57 on page 80 of the discussion document*

We support the implementation of farm plans and auditing of the freshwater modules. All RSIL shareholder have completed farm plans and have had at least 2 audits. Feedback from the auditors and shareholders have indicated the process is engaging and helpful in improving on-farm performance.

Our main concern is the capability of industry to deliver compulsory farm plans by Certified Farm Planners by 2025. Our experience in this space means we are acutely aware of the challenges with attracting and retaining qualified staff to undertake these activities and recognise it can take between 2-5 years for an individual to become fully competent in this area.

We are also concerned about the requirement to ensure all farm plans are developed by a Certified Farm Planner. Not only will the qualifications and experience requirements severely limit the pool of people available to complete this work and increase the time needed to train new people into this area, but it will also reduce the engagement of the farmers with the process.

Farm plans are only one part of an Environmental Management System (EMS), where good practice requires a Plan-Do-Check-Act\(^{15}\) model of continuous improvement. A critical part of this process is

the Audit of the plan, as well as the review of the process in reflection of the feedback from the audit. Federated Farmers recently surveyed their members operating land use consents in Canterbury and found the biggest driver of change was the Audit of their FEPs. Our experience supports this view, with many shareholders strongly driven by wanting to do well in their audits and genuinely appreciative of the feedback an audit provides.

RSIL are therefore concerned insufficient thought has been given to the implementation of the auditing and extension process which will be fundamental to the success of the programme as a whole.

**Proposed Relief – Farm Plans**

We propose farm plans are simply prepared and registered on a catchment basis, targeting the highest risk catchments first within the following timeframes:

- **High Risk Catchments**: 31st December 2025
- **Medium Risk Catchments**: 31st December 2027
- **Low Risk Catchments**: 31st December 2030

With audits of these farm plans to be completed within 12 months of registration.

**Immediate action to reduce nitrogen loss**

*please refer to questions 58-64 on page 80 of the discussion document*

RSIL support DairyNZ’s submission on these matters, particularly an emphasis on Simple N Surplus as this is a more comparative metric for identifying a risk a property may have for nitrogen loss.

**Excluding stock from waterways and Setback Distances**

*please refer to questions 65-68 on pages 80 and 81 of the discussion document*

RSIL support DairyNZ’s submission on these matters. Our primary concern is the lack of consideration for the risk of run-off from a property with the minimum set back and the moving of existing fencing.

RSIL agree setbacks from fences are essential for capturing and filtering run-off from properties into waterways, however the size of these setbacks should depend on:

- Infiltration rate of the soils
- Risk of high intensity rainfall
- Slope of the land
- Sensitivity of the receiving environment

In some areas, this may mean a 5 m setback is insufficient, while in other areas a 5 m setback achieves no more improvement than a 1 m setback. On the Canterbury Plains, the risk of run-off into waterways is generally low as the soils are free draining, have low rainfall and the land is flat. In our catchment, setbacks of 1-2 m will adequately capture run-off.

We also refer to the Waimanu Farm Case Study (see attached), which estimates the costs of replacing

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16 Where water quality is deteriorating
17 Water quality in catchment not meeting bottom-line attributes and either improving or no trend
18 Water quality in catchment is meeting national bottom-line attributes and either improving or no trend
the fencing and extending the planting to a 5 m setback at $43 per metre of waterway, or $116,000 for the property. This is a significant investment for a farm that is unlikely to result in further improvements in water quality.

The proposed package also does not take into consideration the loss of good will with farmers who have invested heavily in their time and capital to adequately mitigate run-off on their property, but whom have an average less than 5m. Where risks are adequately addressed through Farm Environment Plans and Audits, farmers should only need to extend their setback areas when fences are due for replacement (e.g. 20 years).

Proposed Relief – Setback Distance and Fences
RSIL's preferred relief is for the NES to set setback limits based on a risk matrix, which takes into consideration the major drivers of run-off on a property. We proposed the following setbacks based on risk:

- Low Risk: 1 m
- Medium Risk: 3 m
- High Risk: 5 m

Furthermore, we propose existing fences with sufficient setback distances are only moved at the end of the life of that fence.

Controlling intensive winter grazing
Please refer to questions 69-70 on page 81 of the discussion document
RSIL support DairyNZ's submission on these matters.

Feedlots and stock holding areas
please refer to questions 71-75 on page 81 of the discussion document
RSIL support DairyNZ's submission on these matters.

Privacy Statement
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