

Action for healthy waterways

Summary of submissions on national direction
for our essential freshwater



Ministry for the
Environment
Manatū Mō Te Taiao

New Zealand Government

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Acronyms

ASPM	Average score per metric
CRIs	Crown research institutes
DIN	Dissolved Inorganic Nitrogen
DO	Dissolved Oxygen
DRP	Dissolved Reactive Phosphorus
<i>E. coli</i>	<i>Escherichia coli</i>
ESR	Institute of Environmental Science and Research
FEPs	Farm environment plans
FLG	Freshwater Leaders Group
FMU	Freshwater Management Unit
FNU	Formazin Nephelometric Units
FW-FP	Freshwater Farm Environment Plan
GHG	Greenhouse gas
GIS	Geographic information system
GMPs	Good management practices
IAP	Independent Advisory Panel
IBI	Index of Biotic Integrity
IWG	Intensive winter grazing
LGNZ	Local Government New Zealand
LiDAR	Light Detection and Ranging
MAV	Maximum Allowable Value
MCI	Macroinvertebrate Community Index
MWLR	Manaaki Whenua – Landcare Research
NDA	Nitrogen Discharge Allowances
NEMS	National Environmental Monitoring Standards
NES	National Environmental Standards
NES-CVP	National Environmental Standard for Commercial Vegetable Production
NES-DW	National Environmental Standard for Sources of Human Drinking Water
NES-F	National Environmental Standards for Freshwater
NES-PF	National Environmental Standards for Plantation Forestry
NGOs	Non-governmental organisations
NIWA	National Institute of Water and Atmospheric Research
NPS-FM	National Policy Statement for Freshwater Management
NPS-IB	National Policy Statement for Indigenous Biodiversity

NPS-UD	National Policy Statement on Urban Development
NPS-UDC	National Policy Statement on Urban Development Capacity
NSI	Nationally significant infrastructure
NTUs	Nephelometric turbidity units
NZCA	New Zealand Conservation Authority
NZCPS	New Zealand Coastal Policy Statement
NZFAP	New Zealand Farm Assurance Programme
NZFPAG	New Zealand Fish Passage Advisory Group
NZFSS	New Zealand Freshwater Sciences Society
NZGAP	New Zealand Good Agricultural Practice
NZIPIM	New Zealand Institute of Primary Industry Management
QMCI	Quantitative Macroinvertebrate Community Index
REC	River Environment Classification
RIS	Regulatory Impact Statement
RMA	Resource Management Act 1991
RMLA	Resource Management Law Association of New Zealand
RMPs	Risk management plans
SNAs	Significant Natural Areas
SPAs	Source Protection Areas
SQMCI	Semi-quantitative Macroinvertebrate Community Index
SSC	Suspended sediment concentration
STAG	Science and Technical Advisory Group
TSS	Total suspended solids

Message from the Secretary for the Environment



In setting out to talk to New Zealanders about how we proposed to stop the degradation of New Zealand's waterways and return them to a healthy state, we wanted to hear from as many people as possible.

Water is essential to the life and health of our people. Our environment and economy depend on freshwater quality and supply. We are all affected by the decline in freshwater quality, and the response we received confirmed how strongly many New Zealanders feel about it.

Some 17,500 people and organisations – a ministry record – responded to the Government's Action for healthy waterways discussion document. The 17,500 submissions we received will be publicly released along with this document which provides a summary of topics and themes that came through.

In addition to this wealth of feedback, the Ministry convened four advisory groups which provided invaluable advice as well as an Independent Advisory Panel which has provided recommendations directly to the Government. Their reports have also been publicly released.

The consultation in October 2019 attracted hundreds of people to public town-hall style meetings around the country, where the Minister for the Environment and ministry officials presented the policy options. We worked with iwi, hapū and Māori associative groups, held workshops with primary sector groups representing the interests of agriculture, horticulture and forestry, regional and local councils and many others.

A very wide range of views were expressed. We had submissions from businesses, environment groups, academics, people living in rural areas, the tourism industry, iwi and other Māori groups, community organisations and young people. This document provides a summary of what we heard.

Key themes

Action for healthy waterways offered complex and far-reaching proposals for change. While many submitters supported the overall direction the Government is taking, there were divergent views on how to do so. This was expressed as a continuum ranging from more regulation to voluntary action.

Those in the dairy sector are concerned about the nitrogen and phosphorous caps. The sheep and beef sector worry about restrictions to adapt or intensify their farming systems. Many rural submitters wanted recognition for the work already being done to improve water quality. Māori groups and environmental groups are keen for stronger regulation and improved council resourcing and performance. Māori have a particular interest in ensuring their wider rights and interests in relation to water are taken into account.

There was widespread support for the concept of Te Mana o te Wai. By sustaining the integrity and health of the water and protecting its mauri, we then ensure our own health and wellbeing. If we first look after the water, the water will look after us.

Next steps

The insights, concerns and information provided in these submissions have played an important role in helping Government make its final decisions. The new regulations including a revised National Policy Statement for Freshwater Management and new National Environmental Standards for Freshwater are the result.

Our aim is to restore our waterways to full health. We thank all of those who have contributed to the discussions. The result will have far-reaching impacts for the health and wellbeing of us all and for future generations.

A handwritten signature in black ink, appearing to read 'V Robertson', with a stylized flourish at the end.

Vicky Robertson
May 2020

Consultation process

From 5 September to 31 October 2019, the Ministry for the Environment (the Ministry) consulted on a range of proposals to stop further degradation of freshwater resources and begin reversing past damage. This included proposals to:

- set and clarify national direction for planning
- take a broader approach in managing all aspects of ecosystem health
- improve farm practices.

These proposals will underpin a new National Policy Statement for Freshwater Management (NPS-FM), National Environmental Standards (NES), and regulations under section 360 of the Resource Management Act 1991.

The purpose of this document is to inform:

- further policy development
- the report and recommendations of the Essential Freshwater Independent Advisory Panel
- the Minister for the Environment's final decisions on the above proposals.

Independent Advisory Panel

The Minister for the Environment (the Minister) appointed the Independent Advisory Panel (IAP) to prepare a report and recommendations on the submissions and proposals in terms of section 46A(4)(c) of the Resource Management Act 1991 (RMA).

After the consultation closed, the IAP received successive versions of this document, along with the submissions, to inform its work.

The Minister will consider the IAP's report and recommendations before deciding how to proceed with Action for healthy waterways proposals, and whether to make other changes.

For more information about the IAP and its membership, please see the [Ministry for the Environment's website](#).

Other feedback

The consultation also sought feedback on other matters, including:

- a new freshwater planning process under the RMA
- regulating to better support the delivery of safe drinking water, and to improve the management of stormwater and wastewater.

The processes for these proposals, and submissions on them, are different from the main process above.

A new freshwater planning process

This document does not summarise submissions on a new freshwater planning process under the RMA.

This proposal requires amendments to the RMA and is being considered by a select committee.

Improving the delivery of safe drinking water, and the management of stormwater and wastewater

We consulted on several high-level proposals as part of the Three Waters Review. They included:

- a new NES for Wastewater Discharges and Overflows
- risk management plans for wastewater and stormwater
- new metrics for wastewater and stormwater
- guidance on stormwater management.

These proposals will be considered as part of the Three Waters Review process, which is separate to developing the rest of the Action for healthy waterways proposals.

Any regulatory or legislative changes under the Three Waters Review will require further consultation, and the public will have another opportunity to consider proposals before changes are made. Any changes under the RMA (eg, NES) would follow the processes in the RMA. Any changes progressed through legislation (eg, a new Water Services Bill) would follow due process including consultation at select committee stage.

Matters outside the scope of this document

Some submissions referred to matters beyond the scope of Action for healthy waterways.

Many offer insights into wider problems with freshwater management, and may influence final decisions, or inform future work programmes. Key topics are Māori rights and interests, and the allocation of freshwater resources (water takes, and permissions to discharge contaminants).

This document does summarise these submissions, but the level of detail reflects the fact that proposals will change – and that this document is not intended to inform final decisions on any legislative or regulatory changes.

Reading this document

The document is structured around separate (but closely linked) proposals to create:

- a new NPS-FM
- NESs
- regulations under section 360 of the RMA.

For example, submissions on stock exclusion are summarised in a section recording key issues and themes. The same applies to proposals to define new attributes and national bottom lines, and so on. Proposals are grouped according to how closely they are related. Many submissions also comment on wider resource management issues, and matters we did not consult on as proposals – for example, water bottling, and addressing rights and interests in freshwater. They will help to inform current and future work on these matters.

The overview summarises common themes and issues, and focuses on the most significant (eg, severe or common issues).

Level of detail

This document is a summary, to consider alongside the actual submissions.

Many submissions, particularly from larger organisations (eg, local government, industry bodies, research institutes), provide a lot of information and raise diverse issues. It is not possible to include all of this in a summary. Instead, this document identifies key issues and themes, to inform the IAP's report and recommendations.

Submissions often give new information on the impact of proposals, and drafting suggestions. We note this, but do not attempt to reproduce it in full. However, these submissions will be considered in detail as part of ongoing impact analysis and drafting.

Still, we will provide all submissions for consideration to the IAP before the Minister makes final decisions. All submissions will be publicly available.

Public meetings and hui

The consultation included a roadshow involving 17 general public meetings, another eight focused on the primary sector and rural community, and 16 hui for iwi/Māori around New Zealand.

For a schedule of the meetings see the Ministry's website.

Statements from these meetings will supplement the points in submissions.

General issues and themes

There is widespread support for the Government's objectives and for the need to improve water quality. There is also general acceptance of the Government's strategy to focus first on water quality (rather than quantity).

Feedback from Māori generally supports the package as far as it goes, while emphasising that the Crown needs to urgently commit to addressing Māori rights and interests in freshwater. Some iwi groups continue to push for full co-development of policy.

We heard divergent views on how to improve water quality. Many in the rural community call for voluntary, ground-up approaches. Many other stakeholders, Māori, and some farming leaders and companies, say this has not worked and we need stronger regulation.

Among those supporting stronger regulation, there is general support for most parts of the package. Some would like to see less reliance on freshwater farm environment plans (FW-FPs) and more use of centrally and regionally set rules and regulations applying to farmers.

Sectors with low nutrient discharges (especially the beef and lamb sector) are concerned that the package tends to reward high discharging activities by letting them carry on, and penalises low dischargers by 'locking them in' at current discharge levels. There is a perception that the Government supports a grandparenting approach to allocating resource use privileges.

Many stakeholders are concerned that councils either will not or cannot deliver what is required and that more support from central government is needed.

Many farmers express concern that:

- urban areas must also pull their weight
- economic impacts of nitrogen bottom lines have not been modelled
- this adds yet more cost and compliance burden on them
- this will drive mass conversion of farms to forests (with consequences for rural communities)
- in some areas the nitrogen bottom lines are unachievable
- some proposals are impractical
- the package is too much 'one size fits all'
- the consultation period was too short.

Specific concerns

Participants in meetings and hui addressed specific elements of the proposals:

- proposed nitrogen bottom line (1 mg/litre):
 - its impact on vegetable production, especially in Pukekohe and Horowhenua
 - the potential economic impact across the country and in some regions, especially Canterbury
- stock exclusion:
 - proposal to move established fences to a distance of five metres on average over 15 years
 - five-metre average setback requirement – is this justified given the loss of productive land
- interim controls on land-use change and FW-FPs – and whether these effectively lock in current low discharging land users
- FW-FPs – who will pay, and how will they be enforceable and achieve catchment goals
- what support land owners will get to achieve water outcomes
- councils and iwi already struggle with capacity in implementing the NPS-FM. Concern that these changes will add pressure; calls for support from central government
- Māori rights and interests and allocation – will have significant impacts on freshwater issues; address these promptly so that councils, iwi and communities can make effective and enduring plans
- interim controls on irrigation – could prevent the expansion of low discharging crops like avocados, pipfruit and stonefruit
- confusion about how to calculate stock-carrying capacity at the farm and paddock scale (the stock exclusion trigger for beef cattle and deer in the hill country)
- mandatory stock exclusion for all wetlands regardless of size
- does the Ministry for the Environment need to rationalise the number of attributes put forward by the Science and Technical Advisory Group (STAG).
- definitions for stock exclusion (size of streams, drains, measure an average setback, stream banks etc)
- selecting thresholds for when winter grazing is permitted or requires a resource consent.

Key statistics

We received about 17,500 submissions on Action for healthy waterways.

Of these, about 3300 were unique – the remainder were forms based on organisation templates.

Of the unique submissions, about one-quarter were from individuals. Over half (about 61 per cent) were from the agricultural sector.

Of the roughly 14,000 form submissions, the bulk – over 12,000 – are largely supportive or seek stronger regulation. These are from Forest & Bird, Greenpeace New Zealand, Fish & Game New Zealand and ActionStation. About 1300 submissions, from DairyNZ, Beef + Lamb New Zealand and Federated Farmers, make up most of the remainder. These support the objectives in principle, but express mixed views on the merits of the proposals. Many unique comments express opposition. About 50 submissions from Horticulture New Zealand also express support in principle but offer mixed views.

The breakdown of form submissions by group is as follows (all numbers are approximate):

- Forest & Bird: 5100 – largely support (or want stronger)
- Greenpeace New Zealand: 3500 – largely support (or want stronger)
- Fish & Game New Zealand (WLG + national): 2200 – largely support (or want stronger)
- ActionStation: 1400 – largely support (or want stronger)
- Beef + Lamb New Zealand: 700 – mixed, support in principle, many unique comments are opposed
- DairyNZ: 500 – mixed, support in principle, many unique comments are opposed
- ‘Sphagnum moss’ industry supporters: 200 – only talk about wetlands
- Federated Farmers: 150 – mixed, support in principle, many unique comments are opposed
- Horticulture New Zealand: 50 – mixed, support in principle.

Key issues and themes

This section outlines the issues and themes raised through submissions. This includes issues frequently raised, or that seem significant for the proposals, and themes that cut across multiple proposals.

The aim is to help readers understand how sections on specific proposals fit together. It is not intended to limit the scope of issues and themes that the IAP will consider, or when Ministers are making final decisions.

Overarching themes

An important theme is that New Zealanders need to change the way we do things, to improve freshwater quality.

There is widespread support for the Government's objectives of improving water quality and halting further degradation, but submitters do not agree about how to do this.

There are different views on the degree of top-down regulation versus supporting on-the-ground farm action. There is a widespread desire for 'enforceable limits' particularly from environmental non-government organisations (NGOs) and Māori, linked to the need for councils to perform better. Many in the rural sector prefer voluntary approaches, and express concerns about the impacts of change.

Many submitters support Te Mana o te Wai as a framework, though some question whether putting the health of the water first is appropriate, or lawful.

Sector themes

The main concerns for each sector are set out below.

Māori and environmental non-governmental organisations

Strong regulation and better council performance and accountability is critical. This includes strong support for the possible new nitrogen and phosphorus attribute tables, and a general desire for urgent action.

Māori and the Crown to address wider rights and interests issues as soon as possible, especially proprietary interests, governance and decision-making.

Local Government New Zealand and Federated Farmers

- Water quality issues are overstated.
- The case for such widespread reform is not made.
- Practical on-the-ground action is largely what is needed.
- Timeframes for implementing changes are challenging.

Rural submitters

- More recognition of the work already being done to improve water quality.
- Fairer attribution of the causes of environmental harm (eg, to sources such as urban population growth and non-agricultural animals including birds).

Dairy sector

- The main concern is the nitrogen and phosphorus attribute tables.
- They oppose, or are uncertain about, proposals to move fences.
- They largely support most other proposals, but suggest some changes.

Sheep and beef sector

- Restricted ability to adapt/intensify their farming systems.
- Concern about the proposed sediment bottom lines.
- Many consider that estimated costs for farmers, especially in the hill country, have been highly understated.

Vegetable growers

- Concerned they will be forced to reduce output in existing areas, but restrictions in other catchments will prevent moving/increasing production elsewhere.

Tourism Industry Aotearoa

- Suggests including a national tourism value.
- While ecosystem health and human health for recreation are closely aligned, freshwater planning and decisions about land use may not adequately address impacts on tourism (particularly given tourism's contribution to exports and economic activity).

All stakeholder groups and tangata whenua

- Clarify the role of action plans in managing appendix 2b attributes.

Nearly all sectors and interests

- Concern about the exemptions for hydroelectricity schemes.

Allocation

A number of stakeholders note that issues about allocating water resources, including permission to discharge nitrogen to freshwater, need to be resolved.

Maintaining current state and being ‘fully allocated’

As a consequence of maintaining current state, Local Government New Zealand (LGNZ) and some industry organisations such as DairyNZ and Fonterra submit that New Zealand becomes ‘fully allocated’ in the sense that opportunities for additional resource use are limited (eg, they will be unable to grant new consents that will affect water unless headroom is created or effects individually offset). They consider this has implications for the future, including how communities grow and adapt (eg, increasing demand to discharge stormwater and wastewater), and councils’ ability to provide for social, cultural and economic wellbeing.

LGNZ’s submission describes wider implications (pages 13–16 of the submission), cited by many local government submissions. These include the inability to:

- provide for future growth and new resource use, including for difficulties in creating headroom or implementing offsetting; accounting and associated challenges that individual applicants will face as a result
- make strategic choices and trade-offs
- provide for underdeveloped Māori land.

LGNZ considers the impact of these proposals are not widely understood or discussed, and require further analysis by central government. It suggests solutions that will go some way towards addressing their concerns.

It appears a number of regional council share this view. They either cite the LGNZ submission, or express similar concerns – for example, requesting a more balanced wellbeing approach and the ability to weigh these factors against environmental outcomes.

Some submitters note that the Government’s future allocation policy is likely to address these matters, and ask for urgent action.

New bottom lines

Concerns include:

- the proposed dissolved inorganic nitrogen (DIN) bottom line is likely to be too ambitious for many waterways, and there has not been enough impact analysis
- the relationship between DIN and environmental harm (eg, to macroinvertebrates) is not clear in all situations
- the proposed dissolved reactive phosphorus (DRP) bottom line is lower than what naturally occurs in many waterways.

Suggestions include further analysis to determine an appropriate DRP bottom line.

There is also strong support for DIN and DRP bottom lines from many sectors and interest groups (largely outside the agricultural sector).

Agricultural proposals

Many feel that the proposals should recognise existing efforts to improve water quality, and that the regulations should not punish ‘early movers’.

Some consider fencing waterways too restrictive, and that a more targeted approach would be practical and impactful. On the other hand, many favour strengthening the proposals, especially to cover smaller streams and drains.

Some recommend removing the FW-FP proposals; others favour stronger national and regional rules. Fonterra and DairyNZ support mandatory FW-FPs but have concerns about how existing certified farm planners could form robust FW-FPs given the current capacity and timeframes to implement proposals in the NES.

There is widespread concern over the level and quality of impact analysis at farm, regional and national level.

There is a concern that the package would force static or reduced nutrient use, even in catchments without water quality issues.

Implementation

Most submissions generally support the intent to implement freshwater proposals in an effective and timely manner.

We analysed about 10 per cent of submissions addressing implementation, and noted these common issues:

- timeframes
- capacity of councils to act on the proposals within these
- the burden of implementation for the primary sector.

Lack of capacity

Across the primary sector, the main issue is the lack of rural professional capacity to help prepare farm plans and fence waterways within the timeframes. Submitters asked for flexibility if farm plans and fences do not comply.

Sheep and beef and dairy businesses commonly ask for funding and information to help with implementation. Sheep and beef businesses in particular are concerned that costs might be disproportionate for low emission farms.

Horticulture is particularly concerned about the accuracy of Overseer when measuring nutrient losses. They would like more funding and research into Overseer or other tools. This is a primary concern for dairy.

The most common suggestion is more financial support and guidance. Councils also ask for more time to create their plans, with extra funding and resources to help meet compliance, monitoring and enforcement.

Iwi and hapū are uncertain of councils' capacity to account for local Māori values and interests in their plans. Councils share this view, and wider concerns about being able to act on the proposals.

Many submitters also suggest that the Government run local initiatives and give communities more self-determination in freshwater management.

Impacts of the proposals

This is an overview of the main concerns about the impacts of the proposals from submitters. It is based on reading and analysing 10 per cent of the 4406 submissions that referred to impacts.

Methodology

We grouped the submissions into individuals (members of the public), Māori, academic community, government entities, civil society organisations, the primary sector and non-farming businesses.

The primary sector was divided into five groups: dairy, sheep and beef, horticulture, forestry and mixed.

We randomly selected and analysed a set of 10 per cent of submissions for each group (including the primary sub-groups), and collated common themes. This overview highlights themes relevant to more than one group.

Overall support

About 12,200 submissions (out of 17,500) express strong support for the proposals' impact. Submissions analysed in this sample do not provide detail about the positive impacts expected.

Limited impact

Many NGOs believe the proposals do not go far enough. A significant number in the primary sector suggest that the policies would only marginally improve water quality, because they believe it does not address issues such as city wastewater disposal or forestry sedimentation.

Māori are concerned about whether the proposals would improve water quality and protect ancestral land for their tamariki and mokopuna. Some question whether mahinga kai and water quality would improve, particularly if Māori interests are not actively represented in local and national decision-making.

Too costly for the benefits

A large majority of the sample consider the environmental benefits are not proportional to the economic and social costs, particularly for proposals which they expect would only create marginal improvements due to regional issues.

Lack of flexibility

Several groups consider the proposals ineffective because they take a one-size-fits-all approach, or do not give enough consideration to regional variations in soil and terrain, leading to excessive costs.

Too costly for councils

All groups have strong reservations about the capacity of councils to act on the proposals. They note that:

- councils lack enough staff, budgets or resources
- rates or fees for consent holders would have to rise to finance the increased compliance, monitoring and enforcement
- this would flow on to ratepayers and consent holders.

More than one group query the social, economic and cultural impacts on farming families with debt or on low incomes, and how the cost of monitoring and compliance would affect them. Submitters also believe that, in general, the large burden on councils would lead to more complex compliance and consent processes for land owners.

Too costly for farmers and rural communities

The primary sector feels that the proposals underestimate the costs and workload of farmers, causing concern that many would go bankrupt or be forced to sell, or that financial pressures would affect the mental health of farmers.

A significant number believe policies on intensification and nitrate loss lack the flexibility to conduct some activities. The horticultural sector stresses that nitrate loss proposals would limit the ability to rotate crops, which is seen as crucial to optimise production and avoid pests.

Most from the primary sector sample, particularly horticulture, believe the proposals would also harm the national economy and the wellbeing of communities, due to reduced food production and higher food prices, a decrease in farmland value, or a decrease in exports.

Local governments are also concerned about the financial impact on their communities, believing that the costs of compliance would be high enough to stunt regional economic growth and reduce spending in local businesses. Both primary sector and local government submitters believe communities could shrink, as unemployed workers move out of the region for better work opportunities.

Unfair distribution of costs

Most of the primary sector sample consider the intensification rules to be:

- unfair to new farmers or those who could not afford to intensify before
- grandparenting high intensity farmers and locking low intensity farmers into their current land use.

This is a recurrent concern for sheep and beef farmers, and for Māori land owners who are yet to fully use their land due to historical barriers.

A significant number from the primary sector feel it would be unfair to pay to implement policies when their farms already have clean waterways. Those who have already protected the environment voluntarily feel they should not pay for further changes.

Te Mana o te Wai

What is Te Mana o te Wai?

Te Mana o te Wai relates to the essential value of water as a precious resource. This concept highlights the importance of sustaining the integrity and health of the water before providing for human use, through a three-tiered hierarchy of obligations.

- The first obligation is to the water itself, to protect its health and its mauri.
- The second is providing for essential human needs, such as drinking water.
- The third is for other uses.

This can be better framed to capture our national aspirations for freshwater, and to make them more effective in local planning.

Our proposals aim to:

- clarify and reframe the concept in the NPS-FM, to firmly underpin the policy
- clarify the links to other parts of the NPS-FM
- restructure the NPS-FM to give councils greater direction on Te Mana o te Wai and the outcomes the Government expects.

In discussions with communities and tangata whenua, require councils to set a long-term vision for the water.

Overview

Over 5290 submitters commented. This includes:

- over 400 unique submissions
- 4890 pro-forma submissions prepared by:
 - Greenpeace New Zealand (3500)
 - ActionStation (1340)
 - Horticulture New Zealand (50).

The above figures are approximate.

Views vary between submitter type, while some issues are common.

A large number support Te Mana o te Wai as a framework for councils to manage freshwater.

Feedback on the hierarchy of obligations

This received the most mixed feedback. For more on the hierarchy, see p. 29.

- Iwi/hapū and Māori groups, individuals and NGOs mostly support the hierarchy.

- Some councils are concerned that it does not align with their obligations under the RMA and LGA.
- Others request a clearer definition of the three tiers.
- Some express concerns about the social and economic impact. Some district and city councils wanted the 'essential health needs of people', especially in terms of their responsibility to provide human drinking water, to have the same priority as the 'health and wellbeing of water', or to include drinking water and sanitation.
- Some farmers are supportive, while others are concerned about the impact on the industry.

Other feedback:

- amend the hierarchy, and raise 'essential human needs' to the level of 'health and wellbeing of water'
- define the tiers (eg, what constitutes an essential human health need?).

Iwi and hapū

Iwi and hapū call for stronger decision-making for Māori provisions. Some stress the vital role of tangata whenua in interpreting and applying Te Mana o te Wai, given that it is a Māori concept. Many highlight the importance of engaging and resourcing tangata whenua.

Together with individuals, iwi and hapū believe Te Mana o te Wai should be fully embedded in the NPS-FM and in the freshwater management system, and say some policies appear inconsistent with the concept or do not go far enough. They recommend retaining the integrity of the concept itself through drafting and implementation.

Council capability

Submissions highlight the need to:

- develop councils' understanding of Te Mana o te Wai
- apply mātauranga Māori to freshwater management, particularly to ensure appropriate action on Te Mana o te Wai.

Guidance

Some submitters say the expectations in practice remain unclear. Individuals, councils and iwi and hapū want support, guidance and resourcing for councils, tangata whenua and communities.

Long-term vision

Most support the vision as a step in the right direction. Some would like clarification, for it to be effective. Others wonder whether it is necessary and would have the desired impact.

Other feedback

Some state that the new timeframes present challenges, particularly as engagement takes time and there will be a need to quickly build capability in councils, iwi and hapū.

Some policies appear inconsistent with, or do not go far enough to uphold Te Mana o te Wai or the hierarchy of obligations. These include:

- exemptions for hydroelectricity
- policies relating to trout and salmon
- some of the agricultural package proposals.

Other policies appear consistent and will help put Te Mana o te Wai into practice:

- ecosystem health policies
- compulsory Māori value.

Rights and interests and allocation should be addressed, to give effect to Te Mana o te Wai.

Main issues and themes

Support and resourcing

A high number of submitters stress that support and resourcing are vital for effective implementation. Crucial would be clarifying the policy intent, and support for understanding Te Mana o te Wai and how it applies in practice.

The National Institute of Water and Atmospheric Research (NIWA) supports the concept, but notes that 'substantial guidance will be needed from the Ministry to support implementation of the Te Mana o te Wai principle'.

Some are concerned that implementation may be an issue, based on council current engagement practices and the groups they are likely to engage with.

Other support issues:

- limited council capability in te ao Māori (the Māori world) and how it applies to freshwater management
- the cost for councils to implement the proposals
- limited capacity for many iwi/hapū and Māori groups to engage in the process, and to advise or lead in supporting councils
- meeting the new timeframes and engaging tangata whenua and communities within the timeframes.

The Resource Management Law Association of New Zealand Inc (RMLA) notes that for the long-term vision and other requirements in the NPS-FM, the Government may want to provide guidance on the timeframe. Choose Clean Water requests more guidance for regional councils that are struggling to give effect to Te Mana o te Wai, which 'is likely due to the fact that commercial interests are vastly more resourced than community members or groups, and these interests are far more powerful during regional planning processes than the public'.

Climate Justice Taranaki recommends systemic support for Māori and the wider communities 'in terms of legal, technical and/or financial resources, for their effective participation in shaping policies and decision-making to achieve what's being proposed in the action plan'.

Councils also call for guidance. Tauranga City Council, for example, has requested further guidance on considering competing priorities.

Drafting issues

Iwi/hapū and Māori groups question the fundamental concept section of Te Mana o te Wai, and recommend changes to how it is articulated, or further engagement with iwi to ensure it is expressed appropriately. One submitter notes that:

It appears that in an effort to clarify what Te Mana o te Wai means within the NPS-FM, the concept has been sanitised and risks meaning less in practice. [...] Te Rūnanga have concerns that in trying to clarify and translate into English the national significance of Te Mana o te Wai and recognition has been reduced, as has the emphasis on mauri and hauora.

Te Mana o te Wai would be more clearly described by their inclusion within a framework that comprises mauri, mana and wairua o te Wai.

A few submitters have raised concerns about a requirement that Te Mana o te Wai would need to be interpreted by tangata whenua and communities. Some are concerned that this would cause uncertainty about interpretation, or what to do in practice. There are concerns that this direction could be taken to mean that the framework itself could be redefined.

Other feedback on drafting:

- retain the Te Tiriti o Waitangi (Treaty of Waitangi), or elevate it in a separate section
- clarify the difference between Te Mana o te Wai as a concept and as a framework
- refer to Te Mana o te Wai in the 'matter of national significance' section, as in the current NPS-FM
- include Te Mana o te Wai in the objective of the NPS-FM, along with the hierarchy of obligations.

The hierarchy of obligations

While most support the concept of Te Mana o te Wai in principle, a number disagree with the hierarchy. A number are partially in support, and suggest some amendments.

A positive shift

A high number support the obligations. Most supporters are individuals, hapū/iwi organisations and environmental NGOs. A smaller number of businesses, local authorities and government organisations also support them.

Supporters note that people's health depends on the health of the environment, and that in some contexts in New Zealand, water has been degraded at the expense of other uses.

They see the obligations as essential for giving effect to Te Mana o te Wai. They believe it would result in positive changes in freshwater management, such as avoiding offsetting ecological health against other values.

NIWA notes that the obligations ‘can assist in the provision of technical advice on water quantity and quality issues, by reducing the need to simultaneously balance environmental, human health and social, economic and cultural needs.’

Significant social and economic impacts

Others note that the obligations do not seem appropriate to contemporary New Zealand, and over-simplify the reality. A high number see them as requiring high-level protection or restoration of the waterbodies, or as an ‘avoid’ type of policy. They foresee significant consequences, preventing further urban development, development of hydroelectric, food and other industries, or other activities to do with waterbodies. Some mention consequences for existing users and user rights.

Submitters are concerned about the impact on the economic and social wellbeing of communities, particularly as uses for water is the third priority in the hierarchy, and wellbeing is the third priority in objective 2.1 of the draft NPS-FM. Some note the impacts on the availability of water to support people’s essential needs, such as drinking water, and the human impact of drought or other emergencies.

Many submitters request further impact analysis and a thorough section 32 cost-benefit analysis of the hierarchy.

Ambiguity and uncertainty

Some submitters highlight the lack of definition for the three tiers of the hierarchy. Many ask what would be considered a healthy waterbody (ie, how to meet the first priority) and note that the hierarchy does not set clear limits.

The feedback includes:

- define the second tier of the hierarchy (essential health needs of people or essential human needs)
- clarify an ‘essential human need’ or an ‘essential health need’. These could include drinking water and sanitation; others claim that food production or fresh produce are essential to health.

Without more definition, the second tier would be open to debate at the local level. Horticulture New Zealand’s form submissions, for example, state that it is unclear how to address social, economic and cultural wellbeing in a sustainable way. We received about 50 of these forms.

Some disagree with setting a national hierarchy, as it could limit a catchment-tailored approach. They suggest prioritising these matters at the catchment level with tangata whenua and communities.

Others query whether the first and second priority should be separate. They suggest viewing human essential needs and the health and wellbeing of water as equal in the hierarchy. Some water service providers note that access to drinking water should be at the same level as the first priority.

Some disagree that the needs of the water would override those of people, stating our wellbeing depends on using water. One submitter agrees the balance should favour water quality, but notes that the hierarchy appears to take the balance to an extreme.

Inconsistency with the RMA may affect local authorities

Councils, NGOs, individuals and businesses note that the hierarchy appears inconsistent with the RMA. Some local authorities and water services state that it may either be inconsistent with, or prevent local authorities from meeting, other obligations including to:

- maintain water services under the Local Government Act 2002
- balance the four wellbeings under the Local Government Act 2002
- provide an adequate supply of drinking water under the Health Act 1956
- provide lifeline utilities under the Civil Defence and Emergency Management Act 2002, or emergency works in section 330 of the RMA.

Many are concerned that objective 2.1, which sets similar priorities, did not refer to sustainable management or clearly connect to Part 2 of the RMA. Social and cultural wellbeing of people and communities appeared to have been moved down to the third level. Some, including local authorities, believe that management of water should be about balancing social, cultural, economic and environmental matters, which they consider would be more in line with the purpose of the RMA.

Others seek clarity on how the proposals fit within sustainable management requirements of the RMA and other legislation. They recommend that Objective 2.1, for example, refer to sustainable management, to Part 2 of the RMA, or to economic wellbeing alongside cultural and social wellbeing in the third priority. Others were comfortable with the hierarchy, subject to legal advice that it meets the purpose of the RMA.

[We] express caution as to how consistent [the hierarchy] is with part 2 of the RMA. We consider it to be potentially inconsistent with years of case law, that has reinforced a reasonable judgment and balancing of values approach is needed. – Federated Farmers

[We seek] clarification of the consequences of not being consistent with Te Mana o te Wai in specific circumstances where consistency will result in unacceptable risk to human life and health. WDC seeks confirmation that unacceptable risk to human life and health will not be compromised by Te Mana o te Wai. – Whakatāne District Council

Framework and concept for councils to act on

Change ‘consider and recognise’ to ‘give effect to’

Most appear to support Te Mana o te Wai as a concept for freshwater management and a framework that councils must give effect to.

A small number, including the Environmental Defence Society, the Catalyst Group and Perception Planning, favour ‘recognise and provide for’ rather than ‘give effect to’. The Environmental Defence Society believes that ‘recognise and provide for’ is more appropriate as it aligns with the RMA part of section 6(e) which requires ‘the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga: be recognised and provided for’.

Many support Te Mana o te Wai as a concept that emphasises holistic ecosystem health and integrated management.

Greenpeace New Zealand supports the elevation Te Mana o te Wai and the hierarchy of obligations. About 3500 people used this form submission. In ActionStation's submission, 1340 people support the Te Mana o te Wai framework and hierarchy.

Stronger decision-making to align with Te Mana o te Wai

A large number welcome the stricter requirements for engaging with tangata whenua and communities because of the Te Mana o te Wai policies.

A consistent theme, however, is the absence of stronger decision-making provisions for tangata whenua. Some stress the need to resolve the greater role implied by mana whakahaere, to fully give effect to Te Mana o te Wai. Submitters are disappointed that decision-making had been decontextualised from Te Mana o te Wai. This is a shared view, particularly among iwi/Māori submitters, environmental NGOs, research institutes and some individuals.

Many support the Te Kāhui Wai Māori¹ and Wai 2358² recommendations for stronger decision-making, such as co-management, co-governance and co-design.

Te Rūnanga is concerned that the pNPS-FM and pNES will not enable Te Mana o te Wai to be achieved as envisioned by Ngāi Tahu as the decision-making power ultimately remains with the regional councils and/or central Government under the current framework.

As Te Mana o te Wai is a te ao Māori concept, there is concern that this would require high-level iwi engagement to give it full effect.

One submitter notes that:

Requiring Local Authorities to give effect to Te Mana o te Wai will require significant contribution from iwi/hapū across the planning framework.

They also comment that only iwi, hapū and kaitiaki holding ahikaā should be able to authorise using Te Mana o te Wai in freshwater management.

Many want stronger wording in section 3.3 and in the Te Mana o te Wai policies in the draft NPS-FM on tangata whenua roles and interests.

Water New Zealand supports Te Mana o te Wai, but submits that:

There is more that lies behind te mana o te wai. If we are to adopt the concept of Mana in relation to water, we also need to consider the involvement of iwi and hapū in decisions about te wai.

¹ Kāhui Wai Māori – *Te Mana o te Wai: The health of our wai, the health of our nation: Kāhui Wai Māori report to Hon Minister David Parker* www.mfe.govt.nz/publications/fresh-water/te-mana-o-te-wai-health-of-our-wai-health-of-our-nation-k%24%81hui-wai-m%24%81ori

² Waitangi Tribunal – Wai 2358 Stage 2 report on the National Freshwater and Geothermal Resources Claims https://forms.justice.govt.nz/search/Documents/WT/WT_DOC_152208791/Freshwater%20W.pdf

Forest & Bird comments that the policies appear to make tangata whenua ‘passive recipients of regional council engagement’, and asks whether the policies should be drafted ‘in a way that enables tangata whenua to exercise kaitiakitanga in an active way’.

Manaaki Whenua – Landcare Research states that decision-making power and directives remain with the councils and there could be a risk that tangata whenua and communities be limited to discussion. It considers that without stronger iwi and hapū involvement in governance and decision-making, councils will not be able to ‘give effect’ to a Māori concept, or ‘honour the mana and mauri of the waterbodies of those iwi and hapū’.

Canterbury Aoraki Conservation Board considers the directives to ‘engage with’ tangata whenua are weak. They suggest stronger words, such as ‘partner with’.

Greater Wellington Regional Council notes that ‘equity in participation must be addressed’, including to incorporate mātauranga Māori.

Councils are applying similar frameworks

A handful of submitters note that similar frameworks exist and are being developed or already in use. For instance Ngai Tahu have used Ki Uta Ki Tai as a methodology for implementing Te Mana o te Wai. As proposed in the NPS-FM, Ki Uta Ki Tai is a component of Te Mana o te Wai.

Ngāti Māhino Iwi Authority also refers to Te Tūāpapa o ngā Wai o te Arawa as a framework encapsulating Te Mana o te Wai for ngā waiariki o Te Arawa.

Some refer to Te Mauri o te Wai, rather than Te Mana o te Wai. Although they support the proposal to give effect to the framework, they note that there may be other frameworks with a similar purpose.

Some seek assurance that these changes would still allow for local expression.

In Tāmaki Makaurau, mana whenua have determined that the local expression of Te Mana o te Wai korowai is ‘Te Mauri o te Wai’. [...] The two concepts – te Mana o te Wai and te Mauri o te Wai – have the same aspirational goal and the same hierarchy of obligations, with the latter being the locally specific way of expressing the aspirations of the former.
– Auckland Council.

Some address this in the context of the long-term vision and Te Mana o te Wai – particularly where frameworks or long-term visions are created and applied through Te Tiriti o Waitangi (Treaty of Waitangi) settlement legislation. An example was Te Ture Whaimana Vision and Strategy. Although Te Ture Whaimana prevails over the provisions in the NPS-FM, the submitter wonders how the vision would apply in nearby catchments.

Embed Te Mana o te Wai in the NPS-FM and freshwater management

Some note that some of the Essential Freshwater policies are inconsistent with the concept. They request that inconsistencies in general with Te Mana o te Wai be resolved, but these submitters do not point to these specific policies.

A high number of these, particularly individuals, businesses, councils, iwi/Māori submitters, comment that the exemption for hydroelectric schemes appears inconsistent with Te Mana o te Wai.

The Western Bay of Plenty District Council comments:

[W]e agree with the comments of the advisory groups that [the exemption proposed for six major hydro energy schemes] does seem to undermine the very principle of Te Mana o te Wai.

Muriwai Valley Farm Enterprises:

There should not be exceptions for hydro-schemes. It should be possible to manage the freshwater resource without damaging or degrading it – this is surely the principle of Te Mana o te Wai. You cannot have exceptions and exemptions for commercial uses.

Others say some of the Essential Freshwater policies do not go far enough.

One submitter notes that:

While [the organisation] strongly support Te Mana o te Wai as a basis for all policies and decisions about freshwater management; it is essential that this is implemented throughout the rest of the proposed changes (ie, around exemptions for certain activities like large scale hydro schemes).

Ngāti Kearoa Ngāti Tuara considers that:

The concept of Te Mana o te Wai as fundamental to the freshwater planning process is weakened by its lack of visibility in implementation methods in the proposed NES and regulations.

Long-term vision

Fewer submitters comment in detail on the long-term vision. The feedback is positive overall, with some suggesting clearer policy to make it more effective.

On the right path

There is overall support for the long-term vision as a step in the right direction. One submitter states that it would be ‘essential to changing and maintaining public acceptance of and continuing support for the proposed changes to the regulatory regime’. Many agree it will contribute to upholding Te Mana o te Wai, and encourage people to think more long-term.

A long-term vision regarding te mana o te wai has been missing for a long time. There is much more to do but the provisions in the Action for healthy waterways proposals makes a good start. – Water New Zealand

One submitter believes the vision may not have the desired effect on the health of the waterways, but supports holding councils to account. Many others comment that the effectiveness of this policy would depend on the implementation, such as how councils apply the hierarchy of obligations, and the level of engagement with tangata whenua and communities.

Clarify the vision policies

Submitters are uncertain as to whether the vision would have a lasting impact on the health of waterways.

Comments include the following.

- It is unclear how the long-term vision would fit into the context of the NPS-FM.
- Substitute it with a short-term vision, or include a timeframe, similar to the 80 years of the Te Ture Whaimana – Waikato Vision and Strategy, or some interim requirements.
- The RMLA considers that while the concept of a vision exists in Te Tiriti o Waitangi (Treaty of Waitangi) settlement legislation, the word ‘vision’ may ‘be viewed as aspirational (which is laudable) but overlooking the practical steps required (management approach) to get there’. The RMLA believes the links between the long-term vision and the other timings in the NPS-FM are not clear.
- For the vision to be effective, it should be clearer and stronger.
- To address this issue, Greater Wellington Regional Council and Fish & Game New Zealand suggest regional councils must include the long-term vision as an objective in the Regional Policy Statement, to ensure objectives, policies and rules in plans are consistent with that vision. Greater Wellington Regional Council and others suggest developing a long-term vision at a catchment or sub-catchment level, rather than having one for the whole region:

Greater Wellington [Regional Council] supports the inclusion of a long term vision that gives effect to Te Mana o te Wai but we submit that this should be enabled to be at the catchment or sub-catchment level. A regional-level vision will most likely be generic and difficult to implement.

Strengthening Māori values

Policy summary: two proposals

New Zealand's freshwater management system, as directed by the NPS-FM, does not fully enable Māori to participate in freshwater management and freshwater planning processes. This is demonstrated by Māori values and measures of health not being adequately identified, reflected or incorporated into regional freshwater planning processes, or considered a priority against other biophysical compulsory values or attributes.

We consulted on two proposals to address this problem. These two proposals are not mutually exclusive and could work together.

Proposal 1: Raise the status of mahinga kai¹ to a compulsory value in the NPS-FM

Regional councils would manage for this value everywhere, including by identifying attributes locally.

Proposal 2: Strengthen the priority for tangata whenua freshwater values

Tangata whenua values in freshwater planning would have higher priority, by building on current requirements.

Kāhui Wai Māori views

Kāhui Wai Māori's report, *Te Mana o te Wai: The Health of our Wai, the Health of our Nation*, calls for mandatory Māori measures of wellbeing in the NPS-FM, as part of requirements for councils to set values and desired outcomes, and then to limit resource use to achieve these.

Kāhui Wai Māori primarily supported proposal one, and only supported proposal two as a supplement to proposal one. It recommended that attributes for Māori values be developed locally by tangata whenua rather than being set nationally.

Overview

In total, 3851 submitters commented on the proposals to strengthen Māori values. This included:

- 397 unique submissions
- 3454 pro-forma submissions from Greenpeace New Zealand.

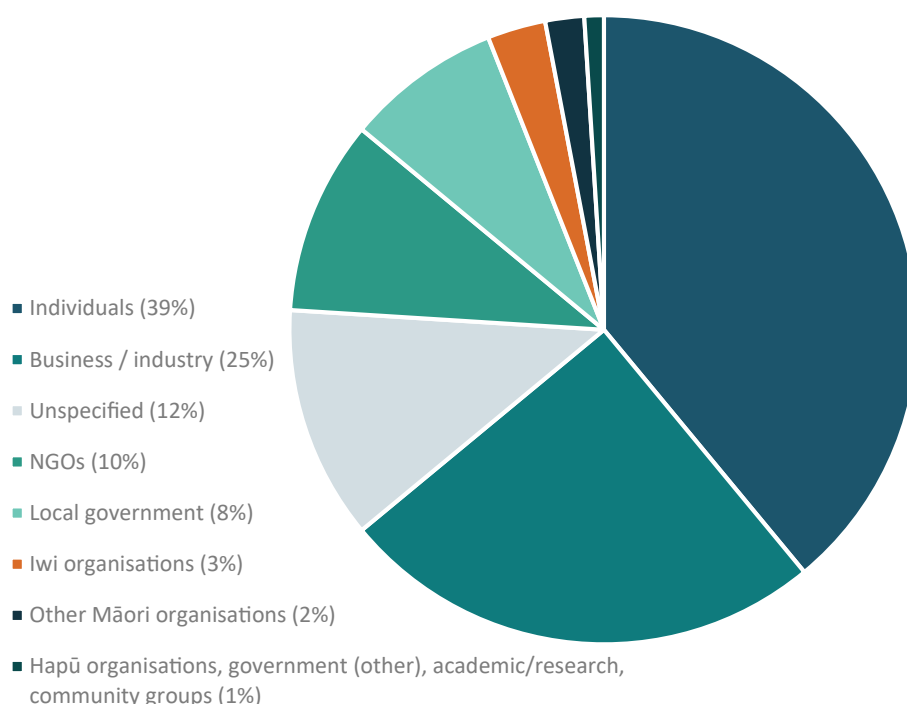
The submissions show that New Zealanders overwhelmingly support strengthening Māori values in the NPS-FM. Most support raising mahinga kai to a compulsory value (proposal 1). A smaller number support both proposals. There is very little support for proposal 2 alone, as submitters believe it is too unclear in its current form.

Greenpeace New Zealand's form submission supports proposal 1. The substantial number of signatories pushes the numbers in support of the proposals, and proposal 1 in particular, so close to 100 per cent that it reduces the meaningfulness of the other figures. To ensure that the voice of unique submitters is not lost, figures are included below for the unique submissions by themselves, followed by an assessment of how the figures change when the Greenpeace New Zealand submissions are included.

Diverse range of submitters

The 397 unique submitters self-identified as shown in figure 1.

Figure 1: How submitters identified themselves



Note: NGOs = non-governmental organisations.

Some iwi and hapū appear to have identified as a category other than iwi, hapū or other Māori organisations. This may reflect the disappointment some Māori expresses at the lack of a 'Te Tiriti o Waitangi (Treaty of Waitangi) partner' category on the Ministry's online submissions tool.

The Greenpeace New Zealand submissions did not include self-identification.

Overwhelming support for strengthening Māori values

Of unique submitters, 66 per cent support one or both proposals, and 20 per cent oppose (table 1). A further 14 per cent neither support nor oppose, or do not state whether they support them or not.

Table 1: Support for strengthening Māori values

Support / oppose / neither	Unique submissions only	
SUPPORT (66%)	Support both proposals equally	32%
	Support proposal one only	25%
	Support both proposals but prefer proposal one	2.5%
	Support proposal two only	3.5%
	Support both proposals but prefer proposal two	0.5%
	Did not clearly indicate which proposal(s) they support	2.5%
OPPOSE (20%)	Oppose the proposals	20%
NEUTRAL (14%)	Neither support or oppose, or did not clearly state	14%

When the Greenpeace New Zealand form submissions are included, the number in support of one or both of the proposals increases to 97 per cent, 96 per cent of which favour proposal one. Opposing and neutral submissions are reduced to 1.7 and 1.3 per cent respectively.

What did New Zealanders say about the proposals in their submissions?

The issues raised by submitters generally fell into one of three categories: implementation support, refinements to the proposals, or seeking clarity on the intention of the proposals. A detailed assessment of these issues is set out below.

The most common issues raised by unique submitters, in order of the number of times they were raised, were:

- tangata whenua will need to be sufficiently resourced to implement the proposals (65 submitters)
- tangata whenua and regional councils must work together to identify, develop, implement and monitor Māori freshwater values for their awa (38 submitters)
- implementation support tools, such as guidance and kaupapa Māori frameworks and resources, are required (33 submitters)
- regional councils will require additional resourcing to implement the proposals (24 submitters)
- additional direction is required in the NPS-FM to achieve the proposals, in particular in section 3.3 of the new NPS-FM (22 submitters).

A common theme across many submissions (both those concerned with these proposals as well as the package more broadly) was that the Government must work with Māori to develop a robust and durable settlement of Māori rights and interests in freshwater.

The Greenpeace New Zealand form submission did not include any comments or suggestions on the proposals, other than supporting elevating mahinga kai to a compulsory value. However, some of the signatories commented that the Crown needs to do more to uphold Te Tiriti o Waitangi in respect of freshwater.

Feedback from tangata whenua during the public consultation hui

As part of the general consultation on the package, senior officials hosted several hui with tangata whenua in September and October 2019 to discuss all aspects of the package. A dedicated session with Māori freshwater technical experts was also held on 23 October 2019.

The kōrero that we heard at these hui about the two proposals was closely aligned with what was said in written submissions. Some of the key points are listed below.

- Hui attendees generally support the proposals, particularly proposal 1 but some hui attendees thought proposal 2 was unclear.
- Tangata whenua must play the lead role in identifying, developing, implementing and monitoring Māori freshwater values for their awa. Without this, the risk is that these concepts will be filtered or watered down by councils and local communities.
- Tangata whenua need to be adequately resourced so that the funding burden does not fall on them, and Te Tiriti o Waitangi (Treaty of Waitangi) settlement money should not have to be used to participate in freshwater management processes. Regional councils will also need to reprioritise their resources and build their in-house capacity to implement either proposal.
- The proposed NPS-FM does not clearly or adequately define what 'engagement' or 'involvement' of tangata whenua means, which leaves it open to interpretation.
- Mātauranga Māori should play a central role in the process of identifying, developing, implementing and monitoring Māori freshwater values.
- The proposals should be evaluated for consistency with existing Te Tiriti o Waitangi (Treaty of Waitangi) settlement commitments, in particular, co-governance arrangements.
- The language in the NPS-FM needs to be clear and directive on how councils exercise their discretionary powers, including the sections of the RMA that relate to transferring authority or entering into joint management arrangements.
- The Government still needs to address Māori freshwater rights and interests more broadly, in particular, governance and allocation.

What did those opposed say?

The main reason for opposing the proposals was that they allegedly favour Māori values and interests over those of non-Māori. These submitters argue that all New Zealanders share (or should share) the same freshwater values, and that there is no need for a separate compulsory value or values for Māori.

Many in this group misunderstood the proposals. For example, about half thought they would grant Māori ownership or proprietary rights to freshwater. A smaller number believed private land owners would need to provide access to mahinga kai sites on their property. One submitter thought that the proposals were an attempt to establish mataitai (customary fishing reserves).

Some are concerned about a negative impact on the economy. They note that productive land might have to be retired to meet mahinga kai standards, and suggest that in this case there should be funding for land buy-back. One submitter asserts that mahinga kai is too subjective to measure accurately, and that it is more appropriate to set for water quality standards that protect mahinga kai.

One submitter does not believe the proposals go far enough to recognise the partnership role guaranteed to Māori under Te Tiriti o Waitangi (Treaty of Waitangi).

Several iwi and hapū do not support the overall package on the basis that the Crown had failed to uphold its Te Tiriti o Waitangi (Treaty of Waitangi) obligations by not engaging with them in developing these proposals. They do not comment specifically on the proposals to strengthen Māori values.

Specific issues and themes

Support for implementation

Tangata whenua will need resources

The most common comment is that tangata whenua will need substantial and ongoing resourcing, either from regional councils or central government, to meet their obligations under the proposals. They highlight that tangata whenua who currently participate in freshwater management do so voluntarily, or by drawing on Te Tiriti o Waitangi (Treaty of Waitangi) settlement resources.

They note that the current lack of resourcing is unfair, and will likely affect the success of the proposals. As one submitter puts it:

Iwi/hapū need to be fully funded and provided with analysts, lawyers, data and full resourcing to enable them to fulfil the kaitiaki roles you are handing to them. All too often I've seen government hand over massive portfolios of work to Māori who are unfunded and forced to do this work in a voluntary capacity with no funding. Let's not set them up to fail yet again.

All the categories of submitters raise this theme.

Include guidance and kaupapa Māori frameworks

Many request clear guidance from central government, including:

- identifying and assessing Māori freshwater values, objectives, attributes and monitoring methods
- how to incorporate these values into regional council decision-making
- how tangata whenua and regional councils can partner to implement the proposals, and the NPS-FM
- the appropriate use of mātauranga Māori
- how to measure mahinga kai in a nationally consistent way
- how mahinga kai species factor into the new fish passage proposals
- clarity on the purpose of the proposals.

Some also request frameworks and platforms to help identify Māori freshwater values locally, in line with mātauranga Māori. These submitters, mainly Māori organisations and iwi/hapū, point to models such as the Mauri Compass and the Cultural Health Index that could form part of a toolkit.

Local government asks for guidance on how to manage overlapping mana whenua interests, especially where their views and values are in conflict.

Regional councils will need more resources

Local government, business/industry, NGOs, and iwi organisations say that regional councils will need additional resourcing beyond their ratepayer base.

One local government submitter suggests that the Government could engage with regional councils to develop direct and meaningful support, including how to advance the proposals on tangata whenua values, mātauranga Māori monitoring, resourcing iwi/hapū and the connection to Te Tiriti o Waitangi (Treaty of Waitangi) settlements. Iwi organisations, NGOs, and business/industry note that regional councils will also need to build their capacity in te ao Māori, te reo me ona tikanga and mātauranga Māori. The proposals may not be achievable by 2025 without support.

Some submitters believe the proposals will not be achievable by 2025 without significant implementation support.

Local government stress the need for meaningful and comprehensive engagement with tangata whenua to build an information base for planning, which they estimate would take two years. However, this would need to be ready by mid-2021 to meet the 2025 deadline, and would have to happen in parallel with the Freshwater Management Unit (FMU) identification process. One submitter recommends extending the deadline from 2025 to 2030 where required.

Tangata whenua should play a role in monitoring

These submissions were mainly from iwi and hapū organisations. Suggestions for monitoring include:

- training programmes for Māori in methods of monitoring freshwater health and mahinga kai
- resourcing for iwi and hapū to develop their own monitoring and assessment databases
- applying methods of monitoring mauri.

These submissions tie in with comments on the role of tangata whenua in freshwater management and the importance of mātauranga Māori.

Refinements to proposals

Tangata whenua and regional councils must work together

The second most common point after resourcing for tangata whenua is that tangata whenua should play a lead role in identifying, developing, implementing and monitoring Māori freshwater values for their awa, rather than simply being 'engaged' with regional councils alongside the general community.

This would include identifying values, attributes and target attribute states, setting limits and monitoring performance. All groups raise this point.

They argue that enabling tangata whenua to do this would acknowledge their role as Te Tiriti o Waitangi (Treaty of Waitangi) partners and mana whenua, and recognise their unique knowledge of what they value about their awa. As one submitter puts it:

In strengthening Māori values, there needs to be clear direction to councils that implementation of the proposals means working with mana whenua as Te Tiriti o Waitangi (Treaty of Waitangi) partners in an active and shared decision-making role, not as part of a pan-community engagement exercise. It also needs to be clear that this needs to be resourced by councils as core work, and not a peripheral add on.

Some recommend that tangata whenua be involved in governance and decision-making for their awa.

A smaller number do not support this point. They argue that regional councils should include Māori values alongside others in their general community engagement.

Additional direction in the NPS-FM

Some submitters recommend further changes or additions to the NPS-FM. This includes detailed technical advice on specific sections, and more general suggestions about the wording. These submissions mostly concern the role of tangata whenua in implementing the NOF in Part 3 of the NPS-FM as it relates to Māori compulsory values.

All groups raise this theme, although Māori organisations and iwi/hapū more predominantly raise concerns about freshwater governance.

The common thread is that tangata whenua must play a lead role in identifying, developing, implementing and monitoring Māori freshwater values. Suggestions include:

- specifying in Part 3 that tangata whenua and regional councils must work together to identify Māori freshwater values, outcomes, attributes, objectives/target attribute states, limits, action plans and monitoring methods (or adding a new clause that states this)
- amending section 3.3 to involve iwi and hapū as partners in identifying and reflecting tangata whenua values, and ensuring they are resourced for this
- adding a new section that allows Māori to identify additional compulsory values at a later time
- adding a new section that includes step-by-step directions for regional councils to support iwi/hapū to develop mātauranga Māori-based tools and frameworks
- designing a table setting out the key elements of mahinga kai which iwi and hapū can populate at a regional level
- defining 'involving' tangata whenua as reflecting the Tiriti partnership
- providing ways to protect culturally sensitive information, such as the location of mahinga kai
- specifying instances where mahinga kai may not be feasible.

Other submissions include:

- adding direction to give precedence of existing freshwater co-governance legislation (and associated mechanisms in regional policy statements and plans) over the proposals in the new NPS-FM
- amending section 3.21 to state that kaupapa Māori-based assessments must also be part of the assessment of reports on the state of waterbodies
- Amending section 3.7(5) to note that regional councils must include environmental outcomes in their regional plans rather than as a specific objective.

- some also recommend changes to the governance of freshwater. They call for a revision of section 3.3 to specify a direct, co-governance role in freshwater decision-making, in particular:
 - that iwi and hapū must be directly involved in freshwater decision-making
 - that Māori values, rights and interests must be recognised and provided for in freshwater decision-making
 - that councils must actively seek opportunities to enact section 33 (transfer of authority) and section 36B (joint management agreements) of the RMA with iwi and hapū.

Amend the definition of mahinga kai

Several submitters do not believe that some aspects of the current definition were within regional councils' control, and recommend 'Intergenerational knowledge transfer' was most commonly mentioned as being beyond what councils can be expected to control. Others say the second part of the definition – 'kei te ora te mauri' (the mauri of the place is intact) – is unclear and should be removed. Another suggests simplifying the definition to 'indigenous freshwater species that have traditionally been used as food, tools or other resources'. These submitters are mainly businesses or local government, with one iwi organisation.

A small number say that limiting the definition to 'indigenous freshwater species that have traditionally been used' might be too narrow, as it does not include introduced species. Conversely, one submitter suggested that mahinga kai should only be compulsory at historic sites.

A small number suggest that the definition include a focus on recreational activities or freshwater safety.

However, roughly the same number support the existing definition. Their points include:

- it is already familiar to regional councils and is being actively used in some regions
- 'kei te ora te mauri' is a crucial part of the definition
- mahinga kai is an indicator across a range of values, including waiora, wairua and waiata
- mahinga kai should be defined locally.

Mātauranga Māori should play a key role

Some submitters note that mātauranga Māori would need to play a central role in addressing Māori freshwater values. Some highlight the need for resources to develop expertise in mātauranga Māori, or training programmes run by wānanga and universities.

Hydroelectricity generators may affect mahinga kai

Some note that hydro schemes would affect their ability to harvest mahinga kai or undermine any compulsory Māori values. Some seek clarity on the obligations of hydro schemes to meet these values. One suggested the schemes must comply with the Te Mana o te Wai hierarchy and be consistent with the values. These submissions come from a mix of individuals and iwi/hapū organisations.

One business/industry is concerned that the requirement to maintain or improve freshwater will prevent hydro and electricity distribution where mahinga kai is concerned.

Consider national attributes or bottom lines

Some note that considering nationally defined attributes would ensure consistency, and guarantee that Māori compulsory values have the same weight as the other compulsory values. Some say that this would make it more likely that the Māori values can be identified and implemented by 2025. The submitters identify as business/industry, NGOs, local government and iwi organisations.

In contrast, one iwi organisation stresses that defining attributes nationally would undermine the whole concept of mahinga kai.

Consider other options

A small number of NGOs, local government and iwi organisations suggest other options than the two proposals. These are:

- amalgamating the two compulsory mahinga kai values with the fishing value to create one non-compulsory value that reflects the outcomes sought by Māori and non-Māori for access to and safe harvest of freshwater species
- creating a new national value – mahi mara – recognising that water use and discharges are essential in food production
- creating a new kaitiakitanga value
- raising wai tapu to a compulsory value, with the same status as wāhi tapu in the RMA.

Clarify the intention of the proposals

Lack of detail

Some submitters claim there is not enough detail to decide whether they would support the proposals. Just under half of these asked for a further round of public consultation once this had been added. This theme is raised predominantly by business/industry submitters.

Proposal 2 is unclear

Some suggest that Proposal 2 is too open to regional interpretation, unlikely to be achievable by 2025, or likely to be complicated and labour-intensive to apply. One calls for clarification of how it would work in practice, the status of any 'tangata whenua values', how regional councils will incorporate these in plans, and how tangata whenua will be supported to participate.

Clarify the link between the proposals and other values

Some seek clarity on the relationship between the proposals and other values and aspects of the NPS-FM, including 'other national' Māori values in the NOF.

Several query how any new Māori compulsory values would relate to ecosystem health and essential human health needs, particularly in the context of the Te Mana o te Wai framework. Some propose ways to clarify this:

- include human health measures as attributes for the mahinga kai value
- create a new 'essential human health needs' compulsory value
- give ecological health priority over all other values, including Māori compulsory values

- make mahinga kai an indicator of the aquatic life component of ecosystem health, rather than a standalone compulsory value.

Two local authorities request that the proposals do not override work already done in their regions to apply Māori freshwater values with tangata whenua.

Other themes

Below is a summary of less common suggestions.

- Specifically exclude freshwater allocation.
- Clarify how any new Māori compulsory values would relate to existing Te Tiriti o Waitangi (Treaty of Waitangi) settlement obligations (such as co-governance).
- Reflect Māori compulsory values (especially mahinga kai) in resource consents, farm environment plans, and fish passage regulations.
- Consider the future state of New Zealand's rivers, addressing factors like climate change.
- Analyse further the likely impact of the proposals.

Threatened species

Many native species have significant biodiversity value. Despite their importance, three-quarters of New Zealand's native freshwater fish species are threatened or declining. Freshwater management in regional plans may improve some aspects of water quality and protect aspects of the habitat, but the objectives and minimum flows may not meet the needs of threatened species in that unit.

Proposals sought to add a new compulsory value for threatened species³ to appendix 1 of the NPS-FM, to ensure regional planning provides for this value.

Overview

Over two hundred and nine submitters commented on adding a new compulsory value for threatened species.

Submitter Type	Approximate percentage of total submissions received
Individual	25%
NGO – Environmental Group	25%
Farming Business	17%
Business / Industry	8%
Iwi / Hapu / Māori Affiliated	7%
NGO – Sector Representatives, Primary Industries	7%
Academic / Research	1%

No pro-forma submissions⁴ comment on this proposal.

Type of support	Approximate percentage of total submissions received
Support	75%
Qualified Support	10%
Neutral / no discernible position	10%
Oppose	5%

Iwi/ hapū/Māori-affiliated submitters generally comment on partnership and involvement in planning and implementation, and about te ao Māori.

Almost half the local government submitters comment on the definition of threatened species, with additional comments seeking further clarity, guidance and support.

Business/industry generally support the proposal but have some concerns about the impact on their operations.

³ Threatened species are defined as 'taxa that meet the criteria specified by Townsend et al (2008) for the categories Nationally Critical, Nationally Endangered, and Nationally Vulnerable Species'. The definition applies to all taxa, not only fish.

⁴ Prepared by organisations that sent pro-forma submissions.

Individuals, NGOs and community groups, while largely supportive, make varied comments. These include requests for public education, a definition of habitat management, and broader protections, such as rahui (bans placed on areas or resources) and international conventions on conservation.

Almost half the submitters with farming interests are concerned about the presence of salmon and trout and their impact on ecosystems/indigenous species. Comments on this are split across both sides of the debate – those who want equal protection for them, and those who consider them counter-productive to safeguarding indigenous fish.

Main themes and issues

Councils want guidance about species, and clarity on their obligations

Councils seek guidance on identifying, monitoring and reporting on threatened indigenous species and their habitats, and guidance on the existing NPS requirement to measure the health of indigenous flora and fauna.

Feedback from different groups is listed below.

Local Government New Zealand: Some councils are confident their existing plans adequately address threatened species, while others would need to provide more information during the consultation process. The main concerns are the logistics/scheduling/capacity constraints from having to discuss limits or action plans at the same time as monitoring the new attributes.

South Waikato District Council: It is unclear whether regional councils themselves would have to restore and enhance populations of indigenous fish if objectives are not met.

Environment Southland: Clarify whether the proposal relates to nationally as well as regionally threatened species. If the latter, there may be implementation and timing issues as regional threat classifications for Southland have not been completed. The proposal is not clear on how to consider mobile threatened species. If whole river systems require detailed habitat mapping, there are significant implementation times and costs.

Northland Regional Council: Disagrees with the statement that 'basic conditions [for threatened species] relate to aquatic habitat, water quality, and flows and levels, but may also include specialised habitat or conditions needed for only part of the life-cycle of threatened species.' To be clear, basic conditions should include the absence/low population levels of introduced pest plants and animals and sustainable management of fishing, matters that are largely beyond the influence of the RMA yet affect proposed new attributes (ie, macroinvertebrates, fish, and submerged plants).

Otago Regional Council: Regional plans could include or map the habitat of threatened species. Also, regional councils need support to identify attributes and monitoring methods for threatened indigenous flora and fauna.

Description of threatened species

Twenty-four submitters comment on the description of the value and seek changes as follows:

Apply the definition to freshwater species, or those that rely on freshwater habitat

Greater Wellington Regional Council: The compulsory value should apply to all threatened species that rely on freshwater systems, not just freshwater fish, river-nesting and wading birds as well as freshwater plants and invertebrates. Add: 'all taxa that rely on freshwater habitat that meet the criteria specified by ...'.

Nelson City Council: Broaden the description to the 'habitats of threatened species' as per its draft plan. Other non-water factors may significantly harm species, such as predation and pest competition, genetic and disease issues, and terrestrial habitat and connectivity. Habitats may need more active management, such as fish passage and improving modified streams.

Toi Moana: The description should clearly not include terrestrial species, which the NPS-FM Indigenous Biodiversity should address.

Include at-risk species as well as threatened (as per the NPS for Indigenous Biodiversity)

New Zealand Freshwater Sciences Society (NZFSS): Councils should have to consider the habitats of at-risk and declining species. This is because populations are declining nationally, and enhancement and restoration of their habitats must also consider climate change risks. If the habitats of at-risk species in national decline are not better protected through regional plans, more species will be elevated to threatened status.

Royal Forest and Bird Protection Society of New Zealand (a strong supporter of the new value): Extend it to include at-risk species and clearly cover spawning habitat for all indigenous freshwater fish.

Provide direction for regionally threatened species

Auckland Council: Extend consideration to species of a lesser threat but regionally significant status, as well as species which are important for ecosystem functioning. Regional councils could then incorporate additional values in appendix 1B to help councils manage the adverse effects on these species.

Include all indigenous species

Te Runanga o Ngati Mutunga: All indigenous species are taonga (precious resources) and part of a holistic ecosystem, and therefore all need the same level of protection.

The National Wetland Trust of New Zealand: Aquatic ecosystems do not exist in isolation from terrestrial systems, and many species interact across the boundary. The term 'aquatic life' could exclude terrestrial species that have important interactions with aquatic habitats. For example, pekapeka-tou-roa (long-tailed bats) forage over linear aquatic habitats, feeding on insects emerging from their aquatic phase, while tui pollinate harakeke (flax) in wetlands, and terrestrial plants contribute food to aquatic species. Conversely, some terrestrial plant and animal species including microbes, invertebrates and plants can degrade waterways and may also need managing. The Trust proposes the broader phrase, 'biota, eg, fish, birds, mammals and other species that rely on or interact, either positively or negatively, with freshwater systems'.

Non-RMA factors affecting threatened species

Some comment that fish populations are sensitive to matters that local authorities cannot completely control, and not necessarily related to the quality or quantity of water.

Others express concern about hydropower schemes affecting the flow of migratory species, upstream and down.

Federated Farmers, Northland Regional Council, and some individuals: Trout and other exotic fish are a significant threat to indigenous fish and could not be controlled under the RMA.

Te Runanga o Ngai Tahu: The Government should ensure all the pieces of legislation on indigenous species 'work together'.

The tension between safeguarding threatened indigenous fish and protecting the habitat of trout and salmon

Some submitters feel introduced species such as trout and salmon should have the same level of protection as indigenous species. However, most, including farming communities, say this would harm threatened species.

Nelson Marlborough Fish & Game: Update the current draft NPS-FM to provide more specifically for trout and salmon as a value, in line with their protection under the RMA

It would be helpful to have direction in the NPS-FM or RMA reform on interpretation of 'have particular regard to ... protection of the habitats of trout and salmon' (RMA section 7(h) and 'the intrinsic value of ecosystems' 7(d). The Court in the Lindis Appeal Hearing Decision considered that while 'protection' is a strong word, equivalent to 'safeguard', section 7 matters are to be paid 'particular regard', not ensured.

Without mention of trout and salmon, most future water allocation and minimum flow arguments may well give significantly more weight to the economic use of water, due to the Lindis precedent. This will be detrimental for *both* indigenous species/ecosystems and the nation's valued trout fisheries. It is contrary to the principles of Te Mana o Te Wai and life-supporting capacity of ecosystems. The Conservation Act and freshwater fisheries regulations appropriately address the interaction of salmonids with native fish.

The Environmental Defence Society: Supports the increased measures and bottom-lines to provide for indigenous species. Recognises that trout and salmon are highly valued, not only for recreation and as a food source, but for the benefits from their management – they are often described as the canaries in the goldmine.

Section 7(h) of the RMA 1991 and para 1.3 of the Cabinet Paper: Restoring New Zealand's Freshwater and Waterways, seek the protection of trout and salmon habitat. The draft NPS-FM does not address this. For rivers identified in the Sports Fish and Game Management Plans:

1. include trout and salmon alongside indigenous species in the definition of a healthy ecosystem
2. include trout and salmon as a positive species (to provide for their habitat) in the Fish Index of Biotic Integrity
3. apply more stringent deposited sediment standards in spawning reaches (as suggested in the STAG's deposited sediment attribute note).

Federated Farmers: Protecting trout and salmon raises a contradiction that may affect Māori values and Te Mana o te Wai (specifically Te Hauora o te Wai) as galaxiids are a taonga species. Trout and salmon are predators of galaxiids to the point of localised extinction in many cases where there is access.

Other comments

Waste Management NZ: Direct regional councils to plan for situations when adverse effects on threatened species are unavoidable but where the effects can be remedied, mitigated, offset or compensated.

Iwi/Māori organisations: Clarify the hierarchy of obligations to foster indigenous species at regional level.

Rotomā No. 1 Inc: Affected whānau or hapū should develop a cultural values-based matrix. Include this in policies that determine how to protect threatened freshwater species. Local government should resource mana moana-mana whenua, hapū and iwi to participate effectively in this process.

Improved management of ecosystem health

A range of proposals aim to sharpen the focus on ecosystem health. This summary focusses on those related to:

- clarifying and better describing the ecosystem health value
- environmental outcomes and council reporting
- fish passage (NPS-FM and NES)
- new attributes and bottom lines managed through action plans (excluding sediment, DIN and DRP, which are covered separately).

Other sections of this document deal with submissions on fish passage, the loss of wetlands and stream ecosystems, and a new threatened species value.

The intent is to broaden the view of those addressing our waterways, to ensure they consider all five components that contribute to the health of a freshwater ecosystem. These are: aquatic life, habitat, water quality, water quantity and ecological processes.

Overview and general themes

In total, 516 submitters commented on the proposals. Table 2 highlights common issues and the number of submissions. Nutrient and sediment attributes are addressed in separate sections.

Table 2: Common issues and numbers of submissions on the proposals

Policy and mechanisms		
Issue	No.	%
Ecosystem health value description	14	3
Environmental outcomes	22	4
Report card	30	6
Adaptive management and action plans	115	22
New attributes		
Issue	No.	%
Macroinvertebrates	138	27
Fish Index of Biotic Integrity, salmonids, inanga habitat	132	26
Dissolved oxygen	58	11
Ecosystem metabolism	31	6
Lake submerged plant health (LakeSPI)	30	6
Missing attributes	23	6

Other themes

- Submissions generally support the broader approach, with five components of ecosystem health.
- Opinions are divided on trout and salmon, possibly due to a misunderstanding of policy.
- Agricultural organisations tend to prefer fewer attributes and more scope for council discretion. Councils and LGNZ are generally concerned about additional monitoring costs.
- LGNZ considers that not all attributes should apply in all catchments, preferring council discretion. Some individual councils disagree to a greater or lesser degree.
- There were suggestions on drafting, often to remove ambiguity.
- Submitters generally support councils having to describe environmental outcomes, report, and use adaptive management or action plans.
- Some research organisations believe legislation may hamper flexible management, saying this should be outside the existing plan making system. Some advocate for reform of the system to accommodate it. The NZFSS and some NGOs advocate for mandatory action plans in regional plans, to ensure transparency and a process for challenging them.
- Submissions also underscore the interconnectedness of measures of ecosystem health. The Wise Response Society suggests adding the concept of ecological function alongside ‘ecological processes’ in the explanation of ecosystem health.

Drafting and definitions

NZFSS states that the language, terminology and structure of the draft NPS-FM and proposed NES require a lot of work to ensure clear and consistent implementation. This includes:

- inconsistencies in the sampling and statistical specifications across the 23 attribute tables, including some that do not specify these
- whether the due date for action plans is 2025 (LGNZ).

Ecosystem health value description

Many submitters, including scientific organisations, support the framework for ecosystem health developed by Clapcott et al (2018). This has five components: aquatic life, water quantity, water quality, habitat and ecological processes.

The NZFSS and the Cawthron Institute support adding attributes to represent these components. They note that while some do not have a long history of use in applied resource management in New Zealand, they are critical to the management of healthy ecosystems.

LGNZ considers it inappropriate to describe a healthy ecosystem as being in a minimally disturbed condition. But it supports setting the ‘A band’ for all attributes at a near natural/minimally disturbed condition.

Some recommend including trout and salmon in the definition of ecosystem health because they are highly valued, and the RMA requires councils to consider them. The Cawthron Institute suggests the ecosystem health value provide for them where they ‘do not threaten the extirpation of indigenous species’. No submitters commented on the fishing value in appendix 1B (Other values that must be considered), which identifies trout and salmon.

A few do not support all components or attributes, preferring a minimum set focusing on contaminants. DairyNZ supports three of the five components (water quality, biology and water quantity), but not managing ecosystem metabolism as a separate component. They consider this to be covered by the other 'higher level' attributes such as macroinvertebrates, which integrate 'lower level processes' by including dissolved oxygen monitoring. They are unsure of the value of the habitat component.

LGNZ does not consider all the attributes appropriate in all catchments, and for others (FishIBI, LakeSPI, ecosystem metabolism) that there is not enough supporting science relative to the risk of creating perverse outcomes and imposing unnecessary costs. It supports attributes that recognise local contexts.

The Cawthron Institute and others believe the definition allows too much room for interpretation. This includes:

- the term 'appropriate' in the context of 'appropriate indigenous aquatic life', which might be used to maintain degradation
- definition of habitat, which should include suitable water depths and velocities
- the term 'minimally disturbed condition' does not distinguish between human and natural disturbance. The Cawthron Institute suggests 'minimal human alteration/disturbance'.

Minor amendments include explicitly stating that connections to groundwater are a component of habitat.

New management approach

Environmental values and outcomes

NZFSS generally supports councils setting environmental outcomes for waterbodies in regional plans. This will provide clear direction and more integrated management of freshwater resources. They want a better definition of minimum requirements for environmental outcomes in the draft NPS-FM.

The Cawthron Institute calls for both regional and action plans to specify environmental outcomes and target attribute states at the sub-catchment scale.

LGNZ considers the term 'environmental outcomes' unnecessary, preferring 'planning objective'.

Report card

NIWA supports the 'report card' approach for regional councils.

Regional councils would have to 'provide a single ecosystem health score (by reference to the five components of Ecosystem Health) for each FMU in the region' (s 3.21(4)(b)). The NZFSS is concerned that this could be interpreted as a single score on its own (ie, one number or grade for each FMU), which would not enable transparent reporting and could be easily 'misused politically or misunderstood by the public'. They suggest rewording 3.21(4)(b) to require scores for each of the five components, and to assist councils with a national health score card.

Adaptive management and action plans

Many (eg, NIWA, MWLR, LGNZ, DairyNZ, the Cawthron Institute) note that section 3.14 of the NPS-FM (managing some attributes by monitoring and responding with action plans) describes adaptive management, and support this.

Other points

NIWA: Identify it in policy as ‘adaptive management’.

LGZ and DairyNZ: It is a sensible way to deal with complex biological systems, which have multiple stressors and high uncertainty.

LGZ: Prepare plans by catchment, rather than by attribute. LGZ assumes that action plans can be prioritised according to regional council timeframes.

MLWR: Consider legislative barriers in the reform of the RMA.

NIWA: Develop a legislative framework with flexibility in setting limits.

Cawthron Institute: Regularly evaluate and update action plans. Do not incorporate them in regional plans in a way that makes them to the same statutory variation as regional plans.

A number of submitters seek clarity on how to hold councils accountable to their action plans, and how they fit within wider planning and consenting processes. Some submitters (eg, NZFSS) say action plans should be part of regional plans, rather than a document that sits outside the planning process. This would also address a concern that they would lack transparency and be difficult to critique and challenge. NZFSS notes the need for limits on resource use and regulatory methods where there is a clear evidential link between these and outcomes.

Adaptive management and action plans

A number of scientific organisations (NZFSS, NIWA, Cawthron Institute) note inconsistency in the statistics (eg, annual median), and monitoring frequency. NIWA suggests removing the details on sampling requirements and referring instead to a standalone guidance document.

A frequent theme among scientific organisations is the need for further guidance on representative monitoring at the FMU scale.

Implementation

NZFSS: There is an urgent need to build capacity nationally for qualified people to measure and monitor the environment, to support regional councils and communities. Currently, some consultancies – which specialise in freshwater quality monitoring – report increasing demand for services such as Macroinvertebrate Community Index (MCI) assessments.

Exclusions for natural state (section 3.23)

Many support section 3.23. Some note that the policy requires required improvement ‘to the extent feasible’. The concern is that this is vague and difficult to determine. Some want councils to be able to aim only to maintain (Environment Canterbury).

New attributes

Macroinvertebrates

The vast majority of submitters support a measure for macroinvertebrates in the NPS-FM. Some support the three proposed metrics (x, y, z); others question the need for them. Some believe these would increase complexity without improving ecosystem health. Several recommend guidance on assessing the attribute state across the three metrics, eg, what to do if the metrics yield different scores.

NIWA makes detailed recommendations about the directions for sampling and metric calculations in hard and soft-bottomed waterways.

Some support a bottom line of 90 for the MCI attribute.

We received a submission from Dr John Stark, a freshwater macroinvertebrate ecologist prominent in the development of the macroinvertebrate measures in the 1990s, including the MCI and Quantitative Macroinvertebrate Community Index (QMCI). Dr Stark runs a consultancy based in Nelson. He largely opposes the macroinvertebrate attribute tables on the basis that they direct councils to do expensive quantitative monitoring which is unnecessary for their purposes. It is only advocated by research scientists and those at NIWA who want detailed information for their own purposes. This applies to the QMCI and Average score per metric (ASPM) attributes. He is also concerned that:

- There are capacity constraints for quantitative assessments.
- It is unnecessary for macroinvertebrate measures to be diagnostic, only that they be sufficient to identify areas of concern.
- One set of bands is not suitable for all river ecosystem types. He suggests multiple bands for different types, areas and River Environment Classification (REC) classes, or defining them as a departure from the reference condition.
- The proposed shift in the attribute bands from the quality classes recommended by Stark & Maxted is questioned (eg, D band is 90, rather than 80).

Dr Stark supports the use of rolling averages rather than single values. He recommends directing councils to use the MCI only.

The Tasman District Council expects that the fixed count method will increase costs by a multiple of two to three, compared to the coded abundance method it has used for almost 20 years but which would not be suitable to calculate the QMCI or ASPM. It considers the benefits of these attributes do not justify the cost. Its current approach would allow calculation of MCI, Semi-Quantitative Macroinvertebrate Community Index (SQMCI), and the abundance of sensitive Ephemeroptera (mayfly), Plecoptera (stonefly) and Trichoptera (caddisfly) taxa.

The Hawke's Bay Regional Council recommends applying different macroinvertebrate standards in depositional streams.

FishIBI

Of those who mention fish, most recognise the importance of monitoring and managing fish, and support a measure of species diversity and population health in the NPS-FM. However,

some councils and science organisations are not in favour of the proposed FishIBI as a specific measure. They question its suitability for all types of habitats, and some recommend developing a national attribute. Other science organisations including the NZFSS support including fish as a national attribute but do not specify a measure.

Some submitters (eg, Tasman), while supporting the FishIBI, suggest an 'observed over expected' measure would be more appropriate. They want explicit direction for councils to use this measure.

Some note that the survey methods are overly labour intensive for habitats with few fish species, such as hill country areas; guidance on balance surveys would be helpful.

Salmonids

Various submitters comment on the level of protection for salmonids. Several believe that salmonids should be treated as an exotic species and not have special protection, given their known impact on indigenous species. Others want more emphasis on protecting trout and salmon (Fish & Game New Zealand, Cawthron Institute, Environmental Defence Society – trout more protection).

Some make detailed comments on how to include trout and salmon (eg, Cawthron Institute).

NIWA states that while salmonids' need for relatively good water quality is understood, negative interactions between salmonids and native fish species are also well documented. In some places native species, including rare and threatened species, will be harmed if access to their habitats is facilitated for salmonids. 'Caution is required in promoting habitat for salmonids at a national level, and guidance about where it is suitable and unsuitable.'

Dissolved oxygen

River dissolved oxygen

There is general support for expanding the dissolved oxygen attribute to apply in all rivers rather than at the site of point source discharges only. Many note that dissolved oxygen is essential for aquatic life and is an important indicator of ecosystem health.

Some organisations (eg, Fish & Game New Zealand, NZFSS, Cawthron Institute) comment that the minimum intervention for managing dissolved oxygen in all rivers should be as a limit. (The proposal is that limits must be used downstream of point source discharges, and action plans in rivers generally.)

Several submitters want more guidance on monitoring, including of site selection. NIWA considers the 'one-day mean minimum' statistic an error, favouring a 'one-day instantaneous minimum'.

Councils support including dissolved oxygen as an attribute but point out the increased cost of monitoring. LGNZ's recommend allowing for flexibility in monitoring so that instruments can be moved between monitoring sites, reducing costs.

Hawkes Bay Regional Council made a detailed submission about variability of dissolved oxygen in different ecosystem types.

- The proposed attribute should not apply to low energy depositional rivers (as they also recommended for the macroinvertebrate attribute) because oxygen is ‘naturally’ lower; comparing them to wetlands and estuaries.
- ‘Streams left behind when wetlands are drained will be depositional’ (this suggests they consider these within their idea of natural).
- Use per cent saturation as a measure instead of dissolved oxygen concentration.

Tasman District Council supports the inclusion of dissolved oxygen in all rivers.

- Exclude predominantly groundwater-fed rivers from the attribute table. The table (and objectives) should apply all year (not just summer).
- Getting seven consecutive days of data would be difficult, due to storm and flood events; the preference is a three-to-four day statistic during stable weather.

Lake dissolved oxygen

Councils support measuring lake dissolved oxygen, and note that some lakes will have naturally low dissolved oxygen concentrations. They support the action plan approach. LGNZ note that preventing anoxia in deep eutrophic lakes may require ‘unnatural interventions’ that ‘may not always result in an overall improvement for holistic lake health’.

The NZFSS supports the STAG recommendations for dissolved oxygen at the bottom of lakes. For seasonally stratified lakes, it supports a mid-hypolimnetic dissolved oxygen attribute to protect for aquatic life directly and prevent the episodic release of nutrients from lake beds in anoxic conditions.

NIWA recommends deferring the attributes pending further data analysis. It notes the STAG report has ‘extensive comments and caveats’ about a lack of data impeding development of the attribute table.

DairyNZ supports the attributes in principle, but has some concerns.

- Is the science robust enough for lake bottom dissolved oxygen (DO) to be a national attribute? It could be a monitoring requirement only. (They did not indicate what response the monitoring should trigger.)
- The mid-hypolimnetic DO is driven by providing for the needs of salmon for cooler water, implying that this was not a requirement of indigenous species and therefore not in scope of the ecosystem health value (due to salmon being detrimental to native fish, and explicitly excluded from the proposed Fish Index of Biotic Integrity IBI attribute).

Ecosystem metabolism

Some submitters recognise the importance of ecosystem metabolism as a health measure, while others question its usefulness compared to the other attributes.

Some believe our knowledge behind the measurement and management of these attributes is still evolving, and that the measure is not ready to be included as an attribute with numerical attribute bands and a bottom line. Others support STAG’s recommendation of a full attribute table with numerical bands and a bottom line.

Lake submerged plants

There is some support for including lake submerged plants, either in the proposed attribute table, or as a monitoring requirement.

Councils raise concerns about using LakeSPI as a national measure, noting that:

- it is unsuitable for many shallow lakes
- it would unnecessarily raise monitoring costs
- the restoration techniques are unproven.

NIWA and regional councils made detailed submissions on the timing of surveys; both believe that annual surveys are not required and NIWA suggest using the LakeSPI method at an interval of 3–10 years, based on risk.

Missing attributes and other aspects

Several organisations note the absence of attributes for heavy metals, groundwater and benthic cyanobacteria. They recommend further urgent work on these. Some call for emerging contaminants to be investigated (eg, Tasman), as another aspect with significant implications for significant human and ecosystem health.

Some organisations recommend including various measures of river habitat as attributes, because they are useful indicators of the effects of many human activities. It is noted that regional council staff are already routinely collecting some physical habitat attributes, as part of State of Environment monitoring.

Submitters note there is no specific mention of groundwater ecosystems. Some want this to be addressed either in this proposal, or future versions of the NPS-FM.

A sediment attribute

Sediment is one of the most severe stressors of freshwater (and ultimately coastal) ecosystems. Management to date has been inadequate. Levels of suspended sediment are above the proposed national bottom line in parts of most of New Zealand's catchments. We have set in stream sediment thresholds to protect ecosystem health. These are proposed in the draft NPS-FM in Appendix 2: for suspended sediment (2a); for deposited fine sediment (2b); and their classification systems (2c).

Overview

Over 10,000 submitters comment on sediment attribute proposals. The vast majority of these submissions came from pro-forma documents from Forest & Bird, Fish & Game New Zealand and Greenpeace New Zealand, as well as individual submissions from ActionStation, which supports the proposals. Te Tiriti o Waitangi (Treaty of Waitangi) partners are largely supportive.

About 900 individual submissions came mainly from small farming businesses and individuals as well as other stakeholder types. Detailed feedback came from regional councils, Crown research institutes (CRIs) and research institutes, primary sector groups and some energy generators.

Themes and issues

Suspended sediment

1. The appropriateness of suspended sediment as an appendix 2a rather than appendix 2b attribute, and the robustness of the evidence behind the proposed bottom lines and bands.
2. The attribute indicator, proposed as turbidity measured by Formazin Nephelometric Units (FNU).
3. Attribute assessment timeframe and specific assessment statistic.
4. Technical support for successful implementation by councils, and technical and financial support for land managers who will make changes on the ground to comply with the policies.

Deposited sediment

1. The appropriateness of deposited sediment as an appendix 2b attribute rather than a monitoring requirement or appendix 2a attribute.
2. The precision of bottom lines and bands, and the robustness of the evidence behind them.
3. The appropriateness of the monitoring method in naturally soft-bottomed streams.

Environmental classification systems

1. Deposited sediment bottom lines too lenient in some classes.
2. Some rare groups in the REC are not covered in the attribute classification system.
3. The complexity of the environmental classification system.

Suspended sediment as an appendix 2a attribute and the robustness of bottom lines and bands

Te Tiriti o Waitangi (Treaty of Waitangi) partners and stakeholder groups (other than many primary sector businesses, hydropower generators, and a few councils) explicitly support suspended sediment as an appendix 2a attribute.

Primary sector firms and hydropower generators question the evidence on which the bottom lines and bands are based. Federated Farmers state that bottom lines and bands are too close to predicted pre-human states. DairyNZ comments in detail on the proposed bottom lines and questions the method on which they are based. They state that it would be more defensible either to:

- use the bottom lines and bands derived from the extirpation analyses reported in Franklin et al (2019), or
- set bottom lines at a five Nephelometric Turbidity Unit offset from predicted reference state, as in international literature and the outputs of Depree et al (2018).

Suspended sediment indicator

NIWA, LGNZ, the New Zealand Forest Owners Association and several regional councils, among others, consider the proposed indicator, turbidity, to be inappropriate for the suspended sediment attribute for three main reasons:

1. turbidity is a proxy for suspended sediment rather than a direct measurement
2. the challenges in monitoring turbidity, particularly the variation in readings from the same or similar instruments at a site
3. the inability of industry, catchment groups, or citizen scientists to effectively support policy implementation, given the challenges and expense of monitoring.

These submitters would prefer visual clarity, or either total suspended solids (TSS) or suspended sediment concentration (SSC). Also, several councils suggested that if turbidity is to be the indicator, the measure should be the commonly used nephelometric turbidity units (NTUs). However, the National Environmental Monitoring Standard (NEMS) for turbidity describes use of FNU.

Many others make substantive comments on technical aspects, including NZFSS, DairyNZ and the Cawthron Institute. Several regional councils do not explicitly recommend a different attribute indicator.

Assessment timeframe and specific assessment statistic

Regional councils, several research institutes, and CRIs note that the specific attribute assessment statistic is missing from the table and that the assessment timeframe is unclear, given the potential to use high-frequency measurement for turbidity. Councils state that the short timeframes (two years) and small differences in band thresholds could lead to frequent band 'state-switching' (moving between bands).

Technical and financial support

Councils and CRIs in particular note the need for technical support to implement the attribute effectively. This includes:

- guidance on implementing the attribute given its classification system in the FMU planning context
- further research and guidance on integrating suspended sediment measures – the analytical framework that links suspended sediment measures with loads
- supporting NEMS for TSS or SSC and their relationship to turbidity, visual clarity and total loads for limit-setting
- guidance on monitoring networks, given the environmental classification system
- national certification schemes and training for erosion management in the primary, construction and development sectors
- limit-setting to account for downstream receiving environments, especially estuaries.

Individuals and farming businesses express a strong desire for government financial support to offset the cost of reducing erosion and sediment loading.

Deposited sediment as an appendix 2b attribute

Except for environmental NGOs, most support deposited sediment as an appendix 2b attribute. Some primary sector groups and councils state that it should be a monitoring requirement only, or a monitoring requirement with action plan – comparable to including the MCI in the current NPS-FM.

Some bottom lines too lenient

Several regional councils, including Environment Canterbury, as well as NZFSS and the Cawthron Institute, note that monitoring information shows substantially lower deposited sediment than the predicted reference state for some classes. This is as reported in Franklin et al (2019), the basis for the proposals. They submit that this discrepancy makes the deposited sediment bottom lines too lenient.

Precision of bottom lines and bands

A range of submitters consider the bottom lines and bands too precise. They state that the monitoring method has a typical error of 5–10 per cent, so differences under this range are not meaningful.

DairyNZ recommends using a far simpler classification system, such as that recommended in Depree et al (2018) that included only bottom lines. DairyNZ describes the recommendations from Depree et al (2018) as more defensible, given DairyNZ's critique of the method used to derive bottom lines and bands used in Franklin et al (2019).

Appropriateness of the monitoring method

Several regional councils note that the attribute is inappropriate for naturally soft-bottomed streams because of the prescribed indicator and monitoring method. They suggest either using a different indicator or allowing regional flexibility for those river systems.

Environmental classification systems

Generally, submitters support the environmental classification systems. However, NIWA, forestry sector groups and several councils state that these do not cover some relatively rare climate, topography and geology groupings in the REC. Also, submitters note that the complexity of the systems will create challenges in implementation, particularly in the FMU planning context. They state it would be particularly challenging to implement the attribute where rivers switch between classes across relatively short distances.

Councils, sector groups and CRIs state that the number of classes for suspended and deposited sediment classification systems could be reduced without compromising the intent.

Other comments

Below are suggestions from various submitters.

1. Councils: Adopt the sediment attributes on a provisional basis, then reassess and formalise after a trial period.
2. The Fish & Game New Zealand council and other organisations: Amend the deposited sediment attribute to include specific standards for salmonid spawning reaches.
3. Primary sector organisations and councils: Amend the specific exceptions regime for the attribute. Include new exceptions for peat drainage areas underlain by iron pans as well as streams with naturally high suspended sediment loads stemming from local climatic and geological conditions. Remove the exception for naturally coloured brown-water streams.
4. Numerous submitters note the challenges of:
 - managing erosion in relation to high precipitation events and their relationship with in-stream sediment
 - linking in-stream sediment levels with receiving environments' ecological state and impacts.

Nutrient attributes

High nutrient levels promote algal growth, put pressure on the health of macroinvertebrates and fish, and are toxic at higher concentrations. There is concern that existing attributes to manage algal growth and toxicity may be insufficient. The Science and Technical Advisory Group (STAG) propose new attributes in appendix 2A of the NPS-FM Dissolved Inorganic Nitrogen (DIN); and Dissolved Reactive Phosphorus (DRP).

We recommended stricter provisions for managing nitrates in the NPS-FM. We also recommended a programme of work to further address the issues:

- establish certainty about the best approach for setting new nutrient thresholds
- assess at a catchment and farm scale the benefits and impacts of the current NPS-FM provisions and new thresholds

- increase the transparency and rigour of the implementation of the current periphyton bottom line and publish guidance on the process for councils
- progress research to further our understanding of the influences on ecosystem health in soft-bottomed rivers
- publish guidance for councils with nutrient criteria to achieve periphyton biomass objectives in different types of rivers.

We noted that introducing the attributes is a major decision with far-reaching consequences and Ministers will not take final decisions until this analysis is available.

Overview

Submissions show mixed responses to the proposed DIN and DRP attributes. Of the written submissions:

- nearly 700 express an opinion on the DIN attribute. About 30 per cent support it, and 70 per cent oppose
- over 570 express an opinion on the DRP attribute. About 33 per cent support it, and 67 per cent oppose.

We also received over 11,300 form submissions.

- In support: about 10,700 form submissions from Greenpeace New Zealand, Fish & Game New Zealand, Wellington Fish & Game and Forest & Bird. They support the STAG's attributes as they are. Fish & Game New Zealand (1414 submissions) also supports incorporating default nutrient criteria for periphyton in the NPS-FM.
- Opposed: about 600 form submissions from DairyNZ, Horticulture New Zealand, and Beef + Lamb New Zealand. They advocate for a more catchment-specific approach to setting nutrient objectives.

Table 3 summarises the issues.

Table 3: Summary of responses to the proposed dissolved inorganic nitrogen (DIN) and dissolved reactive phosphorus (DRP) attributes

	Generally support	Generally oppose
Submitters	Environmental non-governmental organisations Academics Some councils (eg, Christchurch City Council) Fish & Game New Zealand Some health providers Some iwi organisations Some individuals, including farmers Many science organisations (Cawthron Institute, Scion, New Zealand Freshwater Sciences Society, Institute of Environmental Science and Research)	Most councils Local Government New Zealand Agricultural sector individuals and organisations National Institute of Water and Atmospheric Research
Based on	The toxicity attributes in the National Policy Statement for Freshwater Management are not sufficient for ecosystem health and the new attributes would address that.	Most who oppose the DIN and DRP attributes support a catchment-based approach with tailored objectives.

	Generally support	Generally oppose
	The risk of nitrate in drinking water, and the benefits of a stricter DIN bottom line for managing drinking water at a safe level.	<p>Many question the validity of the evidence used to develop the attributes, pointing out variation in the correlations between DIN, DRP and ecosystem health components.</p> <p>Many think the economic and social costs of meeting the bottom lines would be substantial and outweigh the environmental benefit.</p> <p>Some think the attributes do not adequately account for natural variability in nutrient concentrations (eg, because of catchment geology).</p>

This section of the summary of submissions also contains information on the following:

- Some submissions commented on the STAG’s recommendations to remove the ‘productive class’ in the existing periphyton attribute, and to include a table with default DIN and DRP criteria for managing periphyton in different river types in the NPS-FM. Most support the change; a few councils oppose it.
- Some submissions highlight the need for a benthic cyanobacteria attribute.

Support for the dissolved inorganic nitrogen and dissolved reactive phosphorus attributes

Many note that the nutrient attributes in the NPS-FM are insufficient for protecting ecosystem health, and support the new ones that STAG propose.

NZFSS: ‘Limiting resource use to halt and reverse the uncontrolled discharge of nutrients into water is important to ensure that resource use is sustainable into the future and freshwater ecosystems and connected waterbodies are healthy.’

The Institute for Environmental Science and Research (ESR): ‘We support the proposed attributes as relationships between aquatic life and nutrients are based on correlations not direct causation. So in some circumstances biotic indicators may not warn of high nutrient levels eg, where a nutrient limit prevents nuisance growth but other nutrients may still be high.’

Many in support note that where natural processes exceed the attribute states, there is provision in both the existing and draft NPS-FM to manage this through an exception for naturally occurring processes.

Some iwi groups support the attributes. Te Rūnanga o Ngāi Tahu supports national bottom lines for nutrient pollution and the stronger focus on ecosystem health. They recommend recognising ‘each catchment’s ability to cope with these pollutants’, in accordance with Te Mana o te Wai.

Some councils are supportive (eg, Porirua City Council and Christchurch City Council).

Porirua City Council: Bottom lines for nitrogen and phosphorous are integral to ensuring overall healthy freshwater resources. Wastewater collection and treatment infrastructure renewal programmes are intended to progressively address nutrient levels, which would have cost impacts.

Christchurch City Council: Support the bottom lines for DIN and DRP proposed by STAG, but also recommend that councils should be able to set limits tailored to catchment conditions.

Health impacts

Several submitters note the connection between nitrogen concentrations in water and risks for human health related to drinking water.

We support a bottom line for nitrates in groundwater to protect people's health, where there is no drinking water supply and people are on self-supply and also to protect future use of the resources and use of springs to augment water supply. – Institute for Environmental Science and Research.

Of those that mention health impacts, NGOs, healthcare providers and providers of drinking water support the DIN attribute, noting new research on the link between nitrates and colorectal cancer.

While the current NZ MAV [Maximum Allowable Value; 11.3 mg/L nitrate-nitrogen] is based on studies linking nitrates to methemoglobinemia ("blue baby syndrome") a recent high quality Danish cohort study of drinking water nitrate exposure⁵ found statistically significant increases in colorectal cancer risks for populations with long term exposure to drinking water above 3.87 mg/L. While evidence continues to gather on the significance of this and other studies, a precautionary approach is warranted. – Hawkes Bay District Health Board.

On the other hand, one submitter is concerned that the attributes would reduce the availability of fresh produce, which would affect people's health.

Other comments

Response Trust and Water New Zealand: Recent research on the effects of nitrate in drinking water on the risk of colorectal cancer would, in time, necessitate greater restrictions on nitrate concentrations in drinking water supplies.

Public Health Association of New Zealand: 'The time lag as nitrate makes its way from soil into aquifers, means that nitrate levels are going to go up in fresh and drinking water regardless of what we do, for a long time to come due to the intensification of land use over the last decades. Given the long term impact for years to come, we strongly support the precautionary approach and suggest an immediate and rapid reduction to mitigate this likely lag.' It recommends a bottom line of 0.5 mg/L.

Water New Zealand: 'It is difficult to avoid nitrate when it is a contaminant in drinking water. The significance for drinking water supplies is that removal of nitrate from water is very difficult and requires the technologies of ion exchange or reverse osmosis which are very expensive. While the effect of nitrates on human health was once considered to be limited to a small number of vulnerable infants, there is now increasing evidence that nitrate contaminated drinking water may have much wider human health implications at much lower levels. For this reason, restricting nitrate levels in fresh water and groundwater, water that is

⁵ Schullehner J, Hansen B, Thygesen M, Pedersen CB, Sigsgaard T. 2018. Nitrate in drinking water and colorectal cancer risk: A nationwide population-based cohort study. *International Journal of Cancer* 143(1):73–79. Retrieved from www.ncbi.nlm.nih.gov/pubmed/29435982 (March 2020)

currently used for, or in future may be used for drinking purposes, is an important measure required to protect public health.'

Regional Public Health: Horticultural growers would find it difficult to meet the bottom lines. This could lead to reduced availability of fresh fruit and vegetables and the associated adverse impact on health. A health impact assessment is needed.

Nutrient objectives tailored to catchments

Generally, councils and the agricultural sector (industry bodies and individuals) oppose a single national attribute for DIN and DRP. Many from these groups support catchment-specific objectives.

LGNZ: 'In hard-bottomed rivers, nutrients can be managed to influence periphyton growth. In soft-bottomed and spring-fed rivers, macrophytes are the dominant growth and because these can obtain nutrients from the water column and sediments, managing nutrients in the water is a less effective means of managing them. In these situations the eutrophication requires managing in different ways, such as shading or sediment reduction.'

Fertiliser Association of New Zealand: 'Establishing a single national DIN target will result in councils having no flexibility to consider what approaches will be effective to manage ecosystem health in specific catchments and will mean that they will no longer be able to meet their obligations under the RMA to consider approaches that will be most socially and economically viable for individual catchments'.

Many support nutrient attribute tables that are tailored to river type, as for the sediment attributes. Several state that groundwater that is naturally high in nitrogen would prevent some spring-fed rivers from achieving the DIN bottom line. They recommend exempting spring-fed rivers from the attribute.

Several point out examples of rivers where the MCI was above the minimally acceptable state, despite the nutrient concentrations being worse than the bottom line. Environment Southland: 'There are a number of systems in Southland which have nutrient values 2–3 fold higher than the suggested bottom lines however, have "acceptable" MCI outcomes (ie >90 and periphyton beneath the proposed bottom lines). These systems do not justify stringent requirements on nitrogen'.

LGNZ and DairyNZ make detailed suggestions about alternative approaches that would strengthen and clarify existing provisions for managing nutrients in the NPS-FM, and would not include the proposed attributes. NIWA suggests that if direct measures of ecosystem health are being met (such as macroinvertebrates), the DIN and DRP attributes should not have to be met.

Science issues

As noted above, many science organisations (Cawthron Institute, Scion, NZFSS, ESR) and individual scientists make positive submissions on the DIN and DRP attributes.

Detailed submissions criticising science aspects of these attributes were made by DairyNZ, LGNZ, Bay of Plenty Regional Council, NIWA and the Fertiliser Association of New Zealand. Several other organisations also recommend basing the attributes on better or more thorough evidence.

Many believe that reaching the bottom lines for DIN and DRP would not improve ecosystem health in all cases. For example, Greater Wellington Regional Council wrote: 'There are a number of areas nationally where improving nitrogen and phosphorous concentrations to above the bottom line does not improve ecosystem health. In many places, a wider response beyond just managing nutrients is required.'

NIWA outlines the detail needed, such as:

- data sources and metadata, implications of averaging predictions from dissimilar statistical models, intercorrelations among the response variables, implications of averaging criteria across an order-of-magnitude range
- whether environmental or regional classes were tested
- rationale for the eight response variables, including evidence that the states of these variables are directly related to DIN or DRP concentrations.

Irrigation New Zealand believes that:

- 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.

Other science issues:

- whether the balance of N and P was taken into account.
- other influences on macroinvertebrate and fish community health (eg, habitat, sediment, connectivity), and their importance compared to nutrients.
- whether the 95th percentile is an appropriate statistic for measurement.

Relating to the policy proposals as a whole, several submitters (eg, NZFSS, ESR) are concerned about the absence of targeted regulation for groundwater.

Regional issues

The LGNZ submission includes many regional case studies on the environmental and economic impact of the DIN and DRP attributes (eg, Auckland, Bay of Plenty).

Several submissions note the applicability of the DIN and DRP bottom lines in relation to particular regions, such as Southland and Taranaki. For example:

Monitoring results suggest that despite nitrogen being elevated, other indicators for stream health are good. There is little or no correlation between nutrient concentrations and in-stream macroinvertebrate health in Taranaki. Part of the reason may be that Taranaki's rivers are swift flowing and it is only a matter of hours before water moves from the top of the catchment to the sea. As regards phosphorous, Taranaki's volcanic soils are naturally high.

LGNZ notes that the DIN bottom line is stricter than limits in the recent Canterbury Land and Water Regional Plan regarding spring-fed plains and hill-fed lower streams. For example, the Selwyn Waihora, Hinds and Waitaki sub-regions have nitrate limits at 6.9 mg/L (spring-fed plains and rivers) and up to 3.8 mg/L (for hill-fed lower streams). They argue that such limits have been set after consideration of risk, effectiveness and cost. They conclude that the DIN and DRP attributes would lead to overemphasis on driving down nutrient concentrations when ecosystem health depends more directly on other factors.

Local Government New Zealand case studies

LGNZ included regional case studies, which showed a varied response to the DIN and DRP attributes. Some councils estimated that large proportions of waterways would be worse than the bottom lines, and that substantial nutrient reductions would be required to meet bottom lines when compared to the current state (eg, Auckland, Waikato, Taranaki). Other councils (eg, Greater Wellington, Bay of Plenty) estimated that these attributes would not need substantial further load reductions above what is in the current NPS-FM.

Impacts of the attributes

Cost impacts

Several agricultural organisations and LGNZ give extensive information about the cost of the STAG's proposed DIN and DRP attributes. They conclude that reaching the bottom lines would require large-scale changes in land use from pastoral farming to production forestry, which would substantially affect the economy and rural communities.

These conclusions were critiqued in an economic analysis from the Environmental Defence Society, and the Environmental Protection Trust released an alternative analysis of the spatial impact. These both contend that the impact would not be as severe as predicted by DairyNZ and LGNZ.

Social impact

Many submissions detail the large cost at the farm scale. For example, FarmRight states:

In order to illustrate the impact that would arise from a significant reduction of nitrogen losses, we have conducted an analysis on one of our managed farms. For the purposes of the analysis, it has been assumed that the farm will be required to reduce nitrogen outputs by 50% in order to meet the proposed DIN bottom line. The analysis indicates that approximately 100ha (33%) of the farm would need to be retired, with cow numbers reducing from 950 to 500. The financial impact of this over a five year period is an earnings before interest and taxes reduction of approximately \$1m, which highlights that the financial viability of this operation would be significantly put at risk. This would inevitably lead to the loss of jobs, with the analysis indicating that 2.5 labour units would need to be removed from the farm. The severity of the negative impact that the widespread loss of jobs would cause in rural communities must be considered when setting a DIN bottom line.

Social and mental health impact

Several submitters outline the social and mental health issues that would follow the cost impact. Many who oppose the attributes note their impact on the wellbeing of people and communities. They believe the attributes are at odds with an approach that looks after people's wellbeing. For example, MHV Water Ltd says:

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'.

Impact on wastewater treatment

District councils and other dischargers of wastewater comment that the attributes would lead to significant costs by requiring improved wastewater treatment. For example, Waitaki District Council writes:

Although most of our wastewater treatment plants have recently been upgraded to meet increased requirements, they would be unable to achieve the proposed bottom lines and would need further upgrading at significant additional cost to our ratepayers. This is of concern given that we have a relatively small ratepayer base with lower than average household incomes. In addition, we have concerns about industry capacity and capability to undertake the required upgrade design and construction. Like other councils, we currently struggle to source the required number of appropriately qualified and skilled engineering consultants and contractors, so have serious concerns about the additional pressure these requirements will place on already stretched resource.

The Meat Industry Association states that they would not be able to meet the costs of upgrading their treatment plants to an adequate level to comply. They are particularly concerned that the DRP attribute was not set at a level indicating adverse environmental impacts.

Whether the ammonia and nitrate toxicity tables should stay

Most submitters believe that the new STAG DIN attribute table would make the existing nitrate toxicity table redundant.

Some submitters (eg, DairyNZ, NIWA, Fonterra, LGNZ) support retaining the nitrate and ammonia toxicity attributes, but adjusting the bottom line to a level that would protect 90 per cent of species (currently it protects 80 per cent). NIWA recommend using updated ammonia and nitrate toxicity values currently under development.

Periphyton attribute and productive class

A few submitters comment on STAG's proposal to remove the productive class in the periphyton attribute table. Most, including NGOs, science organisations and DairyNZ, support the proposal. For example, NZFSS comments:

Allowing periphyton to exceed the national bottom line for six months of a three-year period (17% exceedance) by an unspecified amount (eg, no maximum allowable biomass limit applies to the exceedance of the bottom line) does not protect ecosystem health or freshwater values.

Some believe that councils should be able to apply higher frequency exceedance criteria where justifiable because of natural conditions (eg, climate, hydrology, nutrients). Councils currently making use of the productive class (eg, Greater Wellington Regional Council) recommend retaining it.

The existing attribute is based on periphyton biomass. Some, including NZFSS, recommend introducing periphyton percentage cover as an attribute.

A small number noted that STAG's proposal could include a default table of DIN and DRP criteria for managing periphyton in different river types in the NPS-FM. Some support the proposal, while others support retaining the tables as guidance.

Escherichia coli for swimming

Proposal

The NPS-FM currently requires the state of freshwater in terms of *Escherichia coli* (*E. coli*) (an indicator of faecal contamination and risk of infection) to be improved everywhere and for all regional councils to set a target for swimmable rivers and lakes. However, there is public concern that amendments in 2017 lowered the 'swimmable' threshold in the NPS-FM below the widely accepted one in the *2003 Microbiological Water Quality Guidelines for Marine and Freshwater Recreational Areas* (the 2003 guidelines).

The 2017 amendments were complex and not well understood. We propose:

- strengthening and clarifying the standard for sites where people swim most often
- setting a national bottom line for *E. coli* at the top of the D grade in the 2003 guidelines.

Councils must develop action plans to ensure that *E. coli* levels do not exceed this bottom line.

Why we need higher *Escherichia coli* standards

The high levels of *E. coli* in many rivers and lakes indicate that there is an unacceptable risk of infection or illness for people who are in contact with the water, particularly where there is a high incidence of swallowing or inhaling water and water vapour.

In 2017, 6482 cases of campylobacteriosis were notified to district health boards, which is similar to the previous 10 years (except in 2016, when there was a water-borne campylobacteriosis outbreak in Havelock North). As with previous years, recreational water contact was the fourth most commonly cited risk factor. Recreational water contact is also cited as a risk factor for salmonellosis (1119 cases), giardiasis (1648 cases), and cryptosporidiosis (1192 cases). Health professionals estimate the actual number to be at least 10 times higher than the notified cases.

Overview

About 12,000 submitters comment on proposals for a higher standard for swimming. They comprise 596 unique submissions and 11,425 pro-forma submissions.

Pro-forma submissions

We received the following pro-forma submissions:

- 5093 from Forest & Bird: Support new measures for improved water quality, especially sediment, *E. coli* and nitrates. Want a future where our local streams and rivers are safe for kids to swim in, eels can migrate to their ancestral waters and our amazing freshwater fish and river birds can return in abundance.
- 3454 from Greenpeace New Zealand: Support strict bottom lines on *E. coli*. Action plans are not a strong enough requirement for councils for this attribute.

- 1407 from Fish & Game New Zealand: We need proper safeguards to protect our waterways from further pollution and exploitation, so they are safe for swimming, fishing and gathering food. The new *E. coli* standards for primary contact sites should apply everywhere, year round. Primary contact is more than just swimming.
- 499 from DairyNZ: Support strategies and actions towards swimmable waterways.
- 972 from Beef + Lamb New Zealand: Support the need to address issues such as sediment, *E. coli* and winter grazing.

Form submissions from the Vegan Society and Horticulture New Zealand do not comment on *E. coli* or related proposals.

Issues and themes

Summary

- General support for higher standards in places where people swim, and for applying these more widely; some concerns about effectiveness and other impacts.
- Mixed support for action plans rather than limits to achieve the higher standards, their usefulness in tracking faecal sources and targeting solutions, and enforceability.
- Technical issues with drafting and implementation (two tables for *E. coli*, surveillance monitoring, definitions, and the relationship with other attributes and swimming target).
- Scepticism about the targets and effectiveness of the higher standards.
- The attribute table thresholds are based on the 2003 guidelines, which need a review.

Overall support for higher standards where people swim

There is widespread support from all sectors for higher standards at primary contact sites during summer.

There is also support for applying the *E. coli* standard to areas for gathering mahinga kai, or recreational uses such as fishing.

Many individuals, environmental NGOs and Māori feel the direction does not go far enough and that higher standards should apply everywhere, and year round.

There is concern about the poor quality of urban streams and coastal beaches, and that they should be improved because they are closer to where many people live. New Zealand College of Public Health Medicine states that the national bottom line still leaves a high risk of infection, and Choose Clean Water wants it raised to 260 *E. coli* per 100 ml.

Many individuals are concerned about human sewage in waterways, and that significant faecal contamination comes from wild animals, particularly ducks. Some feel that restrictions on stock access to water would help, others that it would be unnecessary, or only needed in summer. Some iwi ask for more controls on activities causing diffuse sources of *E. coli*, particularly when next to swimming spots.

Some councils comment on the difficulties and impacts of meeting the national bottom line in some catchments. Councils from the Bay of Plenty all say that most failures to comply there are due to high rainfall, and that it seems inappropriate to address these before other water quality priorities. Some individuals question the level of enforcement by councils.

Action plans rather than limits

Councils generally feel that action plans offer more flexibility in addressing faecal contamination. Plans could be adapted to include emerging information, such as faecal source tracking, which could identify whether the source is wildlife, ruminants or human.

Public health agencies support action plans because sites with unpredictable water quality require more targeted investigation and intervention, rather than regular monitoring.

Some suggestions for action plans are to restrict campers at unmonitored sites, increase public toilets, and place stricter requirements on upstream wastewater plants.

Greenpeace New Zealand says that action plans are not enough, and to hold regional councils to account if water quality declines.

Some environmental NGOs, businesses and Māori say the plans would not be enforceable and would achieve little.

Technical and drafting issues

Two tables for *E. coli* (the existing table 11, and the new proposed table 23)

The proposed attribute table for *E. coli* (table 23) in the draft NPS-FM is in addition to table 11 in the draft NPS-FM, which has *E. coli* attribute bands that apply throughout an FMU. LGNZ comments that table 11 now needs reworking to remove the double-up with the 95th percentile. Two councils recommend reworking or deleting table 11.

Some iwi call for a bottom line in table 11 as in table 23. In their report to the Minister, the Freshwater Leaders Group (FLG) recommend reviewing the adequacy of the existing *E. coli* attribute and how to apply it.

Councils believe that two tables make reporting difficult because samples for an FMU are collected monthly and assessed at least every five years against the *E. coli* target state, whereas samples for a primary contact site would be collected weekly and assessed at least every three years against the target for the primary contact site (assuming at least 60 samples). Taranaki Regional Council stated that table 23 should replace table 11 because it applies to places and times where people don't swim.

Councils asked for direction on which dataset to use to calculate the 95th percentile for the whole FMU. One notes that the data to calculate for primary contact sites should not use samples collected regularly whatever the weather and flow conditions. Some feel that reporting requirements for all NPS attributes should be over several years.

Surveillance monitoring

Some councils support surveillance sampling and reporting as an interim approach until a robust model for freshwater is developed. They state that monitoring alone can only show the water quality on the date and time it was sampled, and so has limitations for managing health risk. Auckland Council and Greater Wellington are moving away from sampling to a predicted risk approach. This is to address concerns about relying on weekly monitoring of *E. coli* as a public health safeguard.

LGNZ and some councils call for more consistency with the 2003 guidelines. This would recognise the high costs of sampling (including follow-up sampling during weekends and public holidays). In their report to the Minister, the FLG recommended that the Government set out how to monitor, report and enforce *E. coli* and other attributes for human health.

Councils feel that the duty to notify the public about the unsuitability of water for swimming should remain with district health units or territorial authorities. Others comment that the public is not adequately informed about when the water is not safe. The Public Health Association of New Zealand says there is a need for public education programmes about people's choice of areas and times to swim.

Definitions of primary contact sites and the bathing season

Various submitters raise the following issues:

- the definition of primary contact sites is wide
- councils should choose the bathing season because of the regional differences in climate and recreational uses
- the higher standard should apply more widely than primary contact sites because collecting mahinga kai, fishing and whitewater rafting all present risks of ingesting or inhaling water and occur year round (many iwi and environmental NGOs)
- it is unnecessary to constantly improve water quality when it is already 'excellent'. (The proposed NPS-FM requires that 'for attributes relating to the value Human Contact, [the target attribute state must] be above the current state of that attribute'. This is likely to be a drafting error where the intent of policy A6(b) was not carried over.)

The relationship with other attributes and the swimming target

Some iwi note that other pollutants, toxic algae, weeds and access are also affecting the suitability of the water for recreation and mahinga kai. Other submitters ask for attributes for water clarity and weeds, although one council states that they shouldn't need to physically manage sites to remove slippery or unpleasant weed growth.

Scepticism about the targets and effectiveness of higher standards

Around 10 per cent of the individual submitters feel that wildlife, especially ducks, contribute to faecal contamination but are not regulated. Some cite recent reports from Environment Southland about wild fowl causing significant contamination in Southland's rivers.

Other comments

- Focus more on poor wastewater treatment (around 7 per cent of individual submitters).
- Water quality is better today than in the past; it clears up after rain, and if ecosystem health was prioritised then swimmable rivers would follow.
- Significant infrastructure on extreme flows may affect the suitability of a waterbody for swimming, along with toxic cyanobacteria in rivers downstream of hydro dams.
- Cyanobacteria in rivers is a greater health risk than pathogens.

Update the attribute table thresholds

The attribute thresholds are based on the 2003 guidelines, which need a review. The NZFSS supports the proposed approach as an interim measure until a new Quantitative Microbial Risk Assessment updates the *E. coli* thresholds. Sharing this view are: local government, Te Hunga Rōia Māori o Aotearoa (the Māori Law Society), DairyNZ, public health agencies, Choose Clean Water and environmental NGOs.

New Zealand College of Public Health Medicine calls for re-examination of the national bottom line by a panel including public health and microbial expertise.

Beef + Lamb New Zealand states that the link between *E.coli* and pathogenic risk is very poor.

Two councils raise the issue of naturalised *E. coli* in the environment.

ESR asks for an urgent review of the relationship between indicator and pathogens to determine the risk of illness.

River flows and water levels

Proposal

Amend the NPS-FM, requiring regional plans to:

- set out clear environmental outcomes for river flows and water levels
- put the needs of the waterbody first in choices about minimum flows and allocation limits
- adopt environmental flows
- take allocation limits that do not frustrate environmental goals for any connected waterbody.

Why changes to regional plans are being recommended

Current regional plans generally have no measurable outcome against which to test whether their environmental flows/minimum flows and total take limits are effectively safeguarding the ecosystem health of the waterbody.

Regional rules often do not explicitly recognise the connections between waterbodies, and rarely state whether existing water permits will be required to comply with new minimum flows and allocation limits.

Environmental flows/minimum flows and total take limits in regional plans have not been developed to give effect to Te Mana o te Wai.

This problem is becoming more critical because there is increasing pressure on what will be scarcer water resources in some regions. Councils and central government will need to review the take limits in waterbodies that are over-allocated. If the limits are not related to relevant and defensible environmental flows, the review process will be expensive and very disruptive for water permit holders, or could allow them to continue to take, dam or divert water despite adverse environmental effects.

The proposals are set out in sections 3.11 and 3.12 of the proposed NPS-FM.

Overview

About 6387 submitters comment on flows and levels in lakes, rivers and groundwater. This includes 485 unique submissions and 5902 pro-forma submissions.

Pro-forma submissions:

- 5093 from Forest & Bird: 'Safe rivers for our amazing native fish – many of our native fish swim up and down streams to complete their life cycles. They need clean water and plenty of it'
- 698 from Wellington Fish & Game: Requests 'good flow year-round'
- 60 from Fish & Game New Zealand: Trout 'should have flows that provide for their populations'. 'Opposes the exemptions for hydro-electricity [...] Hydro-generators can provide environmental flows'

- 51 from Horticulture New Zealand: Supports maintaining ‘the quality and flows of our waterways, and improving them when they are degraded’.

Form submissions from Federated Farmers, Greenpeace New Zealand, the Vegan Society, Beef + Lamb New Zealand, and DairyNZ, did not comment on flows.

Issues and themes

- The need for more guidance on setting flows.
- Recognise other values alongside ecosystem health and the essential health needs of people; in particular, the values hydro-power generation and recreation.
- How to recognise the hierarchy in Te Mana o te Wai, especially in providing for the essential health needs of people.
- Suggestions for improving the drafting for a better connection between setting flows and levels, total take limits, and other policies.
- Communities will face high costs in setting new minimum flows and limits where existing minimum flows have been hard won, vs the view that existing minimum flows are inadequate and should be reviewed.
- Concerns about the effects of the Manapouri Power Scheme on flows in the Waiau River.

Specific issues and themes

Guidance on setting flows and definitions

The need for more guidance on setting appropriate flows was a common theme across all submitter types. The regulatory impact statement highlighted it as necessary to help councils review their environmental and minimum flow regimes in regional plans.

Submitters, especially regional councils, ask for guidance about:

- suitable methodologies for setting flows in rivers and levels in groundwater
- understanding surface water groundwater relationships, including recharge areas
- standardised measurement type for water availability, type of waterbody (surface water versus groundwater) and timing (seasonal, frequency)
- setting total take limits, maximum allocations, variability and addressing over-allocation
- setting take limits for rivers and aquifers where environmental data are limited, including how to address flow variability in a default limit-setting process
- setting instream outcomes that recognise climate change
- taking account of seasonal variations
- prioritising water use during droughts, and efficient use of water (including domestic use)
- the use of matauranga Māori to set ‘cultural flows’, to avoid flows and levels that fail to meet Te Mana o te Wai.

Recognise other values – in particular, hydro-power and recreation

Environmental groups and the power generators raise this issue. Both suggest amendments to ensure that all relevant values are considered and applied, such as hydro-generation, white water, cultural/matauranga Māori.

Some environmental NGOs note there has been little consideration of minimum flows for recreation, swimmability and amenity values. Excessive water allocation and reduced flows have a pronounced impact on the whitewater values of freshwater resources.

Recognise the hierarchy in Te Mana o te Wai, especially people's health needs

This issue is largely a concern of city and district councils because they must provide domestic water, including during droughts.

Others include hydro companies who note that electricity is an essential need, and farmers providing stock water for animal welfare, or using water for food production and safety requirements.

Strengthen the link between setting flows and levels, total take limits, and other policies

Some groups raise concerns about drafting the policies and how they are connected. They call for better integration of flows, levels and take limit policies. Some suggest amendments for what to consider when setting the minimum/environmental flow and the total take limit, and to ensure that rules about minimum flows include direction on which water permits to suspend.

Costs of setting new limits vs inadequate minimum flows

Submitters question how to write new rules in regional plans within the timeframe, including where plans already have rules. Some suggest prioritising degraded waterways that have been identified and monitored, and leaving the healthy waterways.

A hydro-generator states that for catchments with recently set, effective environmental flows, these should be considered reliable, without re-litigation under the NPS-FM process.

On the other hand, some individuals note that it should be easier to review consents to comply with new rules or to restore ecological health if impacts are greater than predicted, and that the adequacy of existing consented minimum flows should be reviewed.

Manapouri Power Scheme impact on Waiau River flows

There are concerns about the health of the Waiau River because of the diversion of most of its flow to Deep Cove. Submitters state that without holding more water in the Waiau, the proposal will not improve the health, and be a cost to water users in the catchment with no improvement. Another issue is that without retaining more flow, there would be salt water incursions upstream of the Waiau delta.

The Guardians of Lakes Manapouri, Monowai and Te Anau are concerned that allowing exceptions to national bottom lines would limit their ability to address the complex issues of lake water flows into the river.

The Waiau River Care group include the views of around 50 schoolchildren, who each wrote about why the river was important to them.

Ki te mate te awa, ka pena ano ona tangata. If the River dies, so too will its people.

– School student

Submissions by sector

Below are the general views of the sector groups. Their points are included in the themes above.

Twenty-four iwi/Māori organisations and Kahui Wai Māori

- Support the improvements to setting minimum water flows and reporting on water use.
- Support setting environmental flows and levels based on environmental outcomes.
- Support the requirement to set flows and levels for all waterbodies. Suggest including all freshwater bodies (wetlands, geothermal water, etc).
- Māori note the importance of including the definition of ‘cultural flow’ in the environmental flows and levels. This should be informed by matauranga-a-iwi to maintain the mauri of the waterbodies. Include matauranga Māori values and monitoring in any assessment model for minimum flow for any awa. This would begin with a discussion of rights and responsibilities before any allocation of water can proceed.
- Some note the relationship between flows and rights to water. For example:
- A water permit does not provide a right to water above the right to that water by the water itself or another use that is life dependent. It is important to resolve mana whenua’s water allocation rights alongside the proposal.
- A first in, first served allocation/resource consent process does not equitably address all values and interests in freshwater, as it does not allow for comparing or prioritising permit applications.
- Where permits are granted to a lessee of land in an over-allocated catchment, that takes the rights away from the land when the lease expires.
- The need for direction on managing the obligations in Te Mana o Te Wai when there is conflict between the health of the waterway and the other uses, in particular, permits for water supply.

Eight regional councils

- Guidance on appropriate flow setting methodologies and recognising Te Mana o Te Wai.
- Technical concerns and suggestions about the drafting and definitions.
- More direction in the NPS-FM on sampling for ecological attributes at low flows (particularly extreme low flows) to help set appropriate environmental limits.
- Extend the flow-setting direction to wetlands.
- More flexibility to allow for compliance with all values in a catchment (such as the Waiau).

Twenty city and district councils (excluding unitary authorities)

- How to apply the hierarchy of Te Mana o te Wai to providing drinking water to their communities.
- Competing obligations for future growth in the NPS for urban development against the direction for 'take limits'.
- How regional councils will implement measures to deal with over-allocated water resources.

Forty-four environmental non-governmental organisations and community groups

- Concern about definitions for environmental flows, levels, ecological flows, and take limits.
- More direction in the NPS-FM to ensure an appropriate environmental flow regime. Minimum flows and allocation are often some of the most fraught discussions between stakeholders and user groups.
- Review resource consents in terms of allocation. This cannot wait till consents expire.
- More transparency for proper auditing, reporting and analyses of water use.

Thirteen primary sector organisations

- Primary sector organisations support the direction for setting flows. Many comment that minimum flows should be based on solid-science and consider socio-economic impacts. Some concerns were about timing and implications of decisions on environmental flows.
- The relationship of low flows and poor water quality.
- The consequences of restricting water takes from connected waterbodies.
- The need for exemptions from restrictions, and the effects on the horticulture industry during drought when volume, reliability, and timing are critical.
- The South Island Eel industry states that managing rivers through minimum flow setting has been a big problem for eel survival. When floods and freshes are truncated, eels cannot use their feeding habitat, and they disappear.

Six hydropower operators

The six hydropower generators (Meridian, Genesis, Trustpower, King Country Energy, Mercury, and Westpower) comment on flows, and raise concerns about the impact of the flows on hydropower generation.

Minimum flow requirements will affect hydroelectric power generation, have a cumulative effect on schemes with multiple generators in a series and present a total loss of generation.

Any imposed changes to flow, flow variability, or lake and reservoir levels will adversely impact the reliability of New Zealand's electricity supply system, through the potential loss of the significant contribution to peaking and baseload supply. Even if the new policies required a 10 per cent increase in minimum flows at only three of the six hydro schemes for exceptions, this would cause a drop in output of 477 GWh – roughly equivalent to the estimated total annual generation of Mercury's Turitea stage 1 windfarm.

This group supports bespoke flow arrangements in rivers, to address flow flexibility and environmental issues and achieve a positive outcome for generation and the environment. But they are concerned that there is a real risk that hydro-electric generation will not be identified as a value in an FMU and therefore will not have an environmental objective.

Twelve other government agencies and three hundred and fifty one individuals

- District health boards highlight the importance of freshwater and flows for wellbeing of ecosystem as well public health.
- Scientific agencies note the importance of data collection and information.
- Water conservation boards and fish and game councils comment on the need for appropriate settings of flows to protect rivers from over-allocation, and provide for all stages of the aquatic life-cycle.

Very few ask for central government to set default flows (such as 50 per cent of mean annual low flow). Others prefer basing decisions on solid science and community consultations.

Other points:

- farming requires a reliable and sustainable supply of water with flexibility for seasonal variabilities
- continue to improve water usage efficiencies and management of water resources
- water take restrictions will affect food production.

Exceptions for hydroelectric generation

Background

Hydroelectric generation currently provides most of our electricity and has a critical role in the wider electricity system due to its size, flexibility and potential to store large amounts of energy. Because it can alter flows, hydro storage can significantly affect downstream environments and freshwater ecosystems. The current NPS-FM has an exceptions mechanism – regional councils can maintain water quality below a national bottom line if it is necessary to secure the benefits of hydroelectricity infrastructure listed in its appendix 3. This has never been populated, and hydro-generators remain deeply concerned about the regulatory risk and uncertainty this creates for them when renewing resource consents (beginning in 2025), and the risk to national security of supply.

Proposal

We propose to list the six largest hydro schemes in the new NPS-FM – Waikato, Waikaremoana, Tongariro, Waitaki, Manapouri and Clutha. This would ensure that about 90 per cent of New Zealand’s hydroelectricity capacity is subject to the exceptions mechanism to provide for security of supply, and regional councils would have clear direction on how to approach other existing schemes.

Regional councils would be required, when making plans or setting limits, to consider the importance of not adversely impacting on a scheme’s capacity and responsiveness.

Regional councils will still be required to maintain or improve water quality in all waterbodies including, to the extent possible, those captured by this proposed change. All hydro schemes would remain subject to the RMA and resource consent requirements. Their consents typically include flow regimes and complex conditions designed to manage their environmental impacts, and the proposed exceptions will not lead to declines in water quality. Any future infrastructure would have to be built and operated in a way that manages adverse effects on the environment and would not benefit from the exception.

Overview

In total, 1481 submitters comment on proposals to allow for exceptions for hydro schemes:

- 497 unique submissions
- 943 pro-forma submissions from Fish & Game New Zealand
- 12 councils
- 29 iwi/hapū and other Māori organisations.

Greenpeace New Zealand, DairyNZ, Wellington Fish & Game, Horticulture New Zealand, Beef + Lamb New Zealand, and Federated Farmers do not comment on the possible exception for hydroelectricity generation. The Forest & Bird pro-forma submission (an extra 4138 individual submissions) does not mention the exceptions – though they did include that ‘[native fish] also need rivers and streams free of barriers’.

Main issues and themes

- Fairness. Hydro-generators should do their fair share to improve water quality.
- Environmental degradation. The exceptions framework would lead to lower water quality in waters affected by exempted hydro-infrastructure.
- Lower Waiau River and Manapouri schemes. The quality of the Lower Waiau River would degrade. It would not be possible to increase the minimum flows or the frequency and size of the flushing flows.
- Safeguarding renewable electricity schemes. A small number (including the owners of the infrastructure potentially affected) refer to the policy's difficult balancing act between the interests of renewable schemes as a way to reduce emissions, and achieving good water quality.
- Te Mana o Te Wai. The proposal is inconsistent with the concept of Te Mana o Te Wai.

Specific issues

- Competition. Business NZ, Trustpower, Westpower and others comment on the potential advantage to businesses with listed schemes. This would create an uneven playing field for competitors. They state an exemption for select listed schemes is inconsistent with the National Policy Statement for Renewable Electricity Generation and, to an extent, the RMA, as both treat all hydro-generators equally; 'the contribution of renewable electricity generation, regardless of scale, towards addressing the effects of climate change plays a vital role in the wellbeing of New Zealand, its people and the environment'.⁶
- Smaller schemes. Westpower and other small generators outline the benefits of the decentralisation and self-sufficiency of smaller schemes: reducing dependence on national grid and energy loss in transmissions, in turn reducing the impact of larger schemes and resources. They call for extending exceptions to all schemes that are 'environmentally friendly'.
- Framing the issue. Meridan, Genesis and others want to remove the word 'exception' from the clause title, as it implies complete exception from the requirements of the NPS-FM. They recommend reframing to recognise the value of renewable electricity generation and the importance of climate change. Some also seek clarification of the relationship between the NPS-REG and the NPS.
- Conflict with purpose of RMA. Contact, Genesis, Mercury, Meridian, Trustpower and Transpower note that the wording of the NPS-FM is directive, in particular the objectives hierarchy. This gives more weight to the consideration of waterways above other matters, which is inconsistent with RMA section 7(i) and (j) (to which the RMA gives equal weight).
- Te Tiriti o Waitangi (Treaty of Waitangi) claims. Iwi submitters and some hydro-generators want to include local existing settlement frameworks such as Waikato-Tainui's Te Ture Whaimana and Te Awa Tupua, which have legal precedent and obligation above the NPS-FM. Mercury consider Te Ture Whaimana o Te Awa a 'local Te Mana o Te Wai'. Therefore Te Mana o Te Wai has already been incorporated, and there is no need to repeat the process of engagement and amendment to regional policy statements.
- Compensating for hydro scheme impacts. The Independent Electricity Generation Association, Waiau River Care Group and others note that policy 3.22 (4) would place

⁶ National Policy Statement for Renewable Electricity Generation 2011.

an unreasonable burden on other resource users to fix water quality issues caused by hydro schemes. One states this would exacerbate the urban/rural divide.

- Extent of national direction. Some call for more flexibility for regional councils (eg, Environment Southland). Conversely, others want more direction from central government, to protect electricity assets (eg, Meridian).
- Interpreting exceptions. Councils such as South Waikato District Council have different interpretations of the exceptions. Some state it is in direct conflict with and undermines Te Mana o Te Wai, making it difficult to understand the policy framework. Others such as Waikato Regional Council are supportive, and interpret the draft provision as consistent with the NPS-REG, allowing councils discretion and to engage with iwi, stakeholders and community.
- Case-by-case. The NZFSS notes that a more appropriate way to determine exceptions would be for the Government to assess them on a case-by-case basis.
- Clarity of policy. Environment Canterbury suggests clarifying that the targets below the national bottom line should only apply if the waterbody's metrics are already below this line.
- Cumulative effect. Genesis calls for consideration of cumulative effects on output generation, as the Tongariro scheme collects from many streams.
- Impacts:
 - an effective loss of 50–390 GWh
 - this would affect the Waikato scheme downstream
 - this cumulative loss could lead to return to fossil-fuel thermal generation.
- Removal of smelter. A couple suggest shutting down the Tiwai Point Aluminium Smelter to free up electricity and lessen the need for this policy.
- Offsets. Most notably regional councils prefer an effect management hierarchy system. This would set target attribute states below national bottom lines, but would have to offset these.
- Impact analysis. The Sapere Report (put forward by Trustpower) claims that the 2015 Halliburton RIA assessment report is based on out of date and insufficient data, and should not be used. Environment Southland strongly disagree with the Interim Regulatory Impact Analysis for Consultation which states, Not having to improve to meet bottom lines may also reduce the impacts on the catchment community that would otherwise have felt from the requirements to meet bottom lines. They call for independent impact analysis to demonstrate this claim and the rationale for exemptions. Other councils and LGNZ note that the full impact on local communities may not be fully explored.
- Extending exceptions. A few councils mention adding municipal water supply catchment infrastructure to the exceptions. Others state that extending exceptions may lead to other infrastructure being exempted and exploited for commercial gains, undermining Te Mana o Te Wai.
- Fish & Game New Zealand claims that the exception for the large hydro could exempt 50 per cent of all flow of rivers in New Zealand.

Specific issues and themes

Hydro-generators should do their fair share to improve water quality

The vast majority of submitters do not consider it desirable or necessary to treat hydro infrastructure differently from other uses of resources. Many say they want better water quality and cite instances of degradation caused by hydro schemes. Some argue that it is unfair to prioritise one industry over another – that this is less justifiable in light of the partial privatisation of New Zealand’s state owned enterprises.

I strongly oppose the exemptions for hydro-electricity and forestry. Hydro-electricity generators should do their part, like everyone else. Overseas, hydro-generators can provide environmental flows and fish passage, and still be profitable and stable. Exempting hydro and forestry, also creates a bad precedence whereby industry pulls rank over the environment. If we can’t live within our environment, then we need to change our ways. – Fish & Game New Zealand pro-forma submission

Exempting hydro schemes could cause lower water quality

Many see the proposal as providing a complete exemption from the requirements of the NPS-FM. They say it significantly undermines the intent of the NPS-FM. Examples include the Lower Waiau River, the Waikato River and Lake Manapouri.

Ministry note: The proposal was not intended to overrule the requirement for a regional council to maintain or improve water quality. This means that much of this concern is unfounded (but caused by the way the proposal was expressed).

Lower Waiau River and Manapouri scheme

Many highlight the effect of the Manapouri power scheme on the Lower Waiau River. They point to the significant work done to improve water quality, and see this policy change as undoing that. Environmental Southland wishes to retain methods that allow for compliance with all values in Waiau catchments.

Safeguarding renewable electricity schemes

Some (including the owners of the potentially exempt infrastructure) see significant value in the policy change. They note that:

- it resolves an ambiguity in the NPS-FM
- it would bring some security to their ability to generate electricity
- regional councils retain their limit-setting discretion.

Hydro-generators want:

- to include output along with generation capacity, to ensure it is not drastically affected by regional councils’ limit-setting
- clarity on whether the exception also applies to environmental flows, levels, fish passage, infilling, indigenous biodiversity and wetlands which potentially can affect the generation output and capacity.

They note that the exceptions are interpreted as only applying to the structure, not the scheme or activities. The exceptions do not mention damming, diverting, use and discharge of water. These require resource consent, which could be affected.

Others clarify exactly how the policy would work and its significance (commenting that other submitters had incorrectly viewed the policy as stronger than it would be in effect).

Protecting Te Mana o Te Wai

Some iwi and individuals consider the proposal inconsistent with Te Mana o Te Wai. Bottom lines should apply everywhere, to honour this concept.

Other iwi recognise the need for exemptions but want specific consultation about the waterbodies in their rohe.

Maintaining or improving water quality

A core objective of the current NPS-FM is to maintain or improve water quality. However, a combination of policy direction and the definitions used means that regional councils could still permit water quality to decline within attribute bands (defined ranges) and lock in any declines that occur prior to implementing the NPS-FM.

We propose that the new NPS-FM require regional councils to set more specific outcomes (ie, for measures of ecosystem health and other values) to at least maintain water quality at its current state (rather than within a range). Current water quality would be based on the date the new NPS-FM comes into force. The timeframe and scale would allow for natural variation and future transfer of allowances, ruling out the risk of a slow locking-in of declines.

Overview

Issues and themes

- Support for, and opposition to, maintaining the current state of fresh water and ecosystem health.
- Clearer definition of maintenance, improvement and degradation.
- Maintain water quality as at 1991, rather than from the amendment starting date.
- Representative monitoring and spatial scale.
- Cost impact of monitoring and reporting.
- Target attribute states (to maintain, or otherwise) should not have to be set at physical monitoring sites.
- Lag times and the 'load to come'.
- Wider implications of maintaining current state and being fully allocated.
- Robustness of information for determining current state.
- The role of modelling.

Submitter types

Submissions from scientific organisations, environmental NGOs, industry bodies and local government (particularly regional councils) tend to give the most detail. Readers seeking more information should read these submissions where possible.

Detailed drafting suggestions

Overall, drafting suggestions aim to improve clarity, avoid unintended consequences and give effect to policy positions.

Many include suggestions for:

- the temporal and spatial application of requirements to maintain
- definitions

- directions to identify current state and set target attribute states
- monitoring and reporting requirements (see definitions; 1.7; 3.8; 3.9; and 3.21 of the proposed NPS-FM).

It is not possible to cover them all here – please refer directly to the submissions.

General support

Almost all support the Government’s objective of halting further declines, and maintaining or improving freshwater and ecosystem health.

They generally raise issues about how proposals attempt to achieve this, including the issues below. Some submissions, particularly from environmental NGOs, want proposals to go further (eg, requiring improvement rather than just maintenance).

Only a small number comment on proposals that specify how regional councils will report on whether freshwater has been maintained (see 3.21 of the proposed NPS-FM). Almost all of these support reporting in principle, but some are concerned about the additional burden on regional councils (in addition to new attributes requiring monitoring) and how this will be resourced.

Relationship between values, attributes and maintenance

Industry organisations want a focus on ecosystem health and values that apply in a broader way, rather than on specific attributes to measure whether they are being provided for.

They are concerned about the growing number of attributes, generally perceive them as reductionist, and many view requirements to maintain all attributes as needlessly strict where ecosystem health could be provided for in other ways. Beef + Lamb New Zealand notes that maintenance and restoration are more appropriately shaped by the end goal, which is ecological health and the full suite of national and local values. Many appear to prefer fewer and more integrated measures of ecosystem health (such as MCI), and more flexible ways to manage them (ie, action plans rather than limits on resource use).

This issue may also be seen as grandparenting of rights to use natural resources – by recognising the scarcity of resources without adjusting the allocation of rights. For more detail on grandparenting, see the section titled Interim Control of Intensification.

Fish & Game New Zealand suggests some drafting changes to identify current state as more than just attributes (focused on water quality). This would capture other factors such as flows, habitat and species to maintain ecosystem health in a more meaningful way.

Local government and industry question whether the values the NPS-FM seeks to maintain (and the hierarchy it implies through Te Mana o te Wai), match the purpose of the RMA. They see the RMA’s purpose as broader, providing also for social, cultural and economic values. They want consideration of resource users, people and communities when setting target attribute states. For more detail on this issue, see the section titled Te Mana o Te Wai.

Implications of maintaining current state and being ‘fully allocated’

LGNZ and some industry organisations such as DairyNZ and Fonterra submit that, as a consequence of maintaining current state, New Zealand becomes ‘fully allocated’ in the sense that opportunities for additional resource use are limited (eg, they will be unable to grant new consents that will impact on water unless headroom is created by reducing the effect of existing land uses).

They foresee implications, including:

- how communities will grow and adapt (eg, increasing demand to discharge stormwater and wastewater)
- how councils will provide for social, cultural and economic wellbeing.

LGNZ submission

For full details of LGNZ’s discussion of implications, see their submission, pages 13–16. This is referenced by many local government submissions. Their points include the lack of provision for:

- future growth and new resource use, including creating headroom, and difficulties for consent applicants, for example in offsetting and accounting
- flexibility and inability to make strategic choices and trade-offs
- under-developed Māori land.

LGNZ believes these impacts are not widely understood or discussed, and require further analysis by central government. It suggests solutions that will go some way towards addressing their concerns.

A number of regional councils appear to share this view. They either cite the LGNZ submission, or express similar concerns – for example, requesting a more balanced wellbeing approach was common and the ability to weigh those against environmental outcomes, and see current land use being locked in place as a result.

Some note that the Government’s future allocation policy work will likely address these issues, and ask for urgency.

One Northland council notes that maintaining water at its current state ‘is likely to preclude (or at least make it very difficult) new uses and development of land that will result in increases contaminant losses to water’, and that this leaves limited opportunities for land owners to maximise highly productive land (subject to separate proposals to protect these soils).

Specific issues and themes

Maintaining the current state of freshwater and ecosystem health

Many submissions appear to accept, or tacitly support, the proposals to maintain the current state of freshwater. Some environmental NGOs (eg, Game New Zealand, Forest & Bird New Zealand), regional councils (eg, Greater Wellington and Waikato), and industry (eg, Horticulture New Zealand, Irrigation New Zealand) explicitly support maintaining current state – subject to issues discussed in more detail below (or elsewhere in this document) and a range of improvements.

However, most focus on specific issues such as definitions, monitoring requirements, and the robustness of data (see more detail below).

LGNZ is concerned about the wider implications of maintaining fresh water and ecosystem health (without necessarily opposing the proposal). This is discussed separately below. Council concern appears mixed – from explicit support, to positions similar to LGNZ (eg, allowing for growth).

A small number, including Northland Regional Council and Federated Farmers, want to keep the requirement to maintain freshwater within attribute bands (ie, in direct opposition to proposals). The Environmental Defence Society, and Taranaki Regional Council appear to suggest maintaining freshwater at current state, unless it is already in the A band, in which case it should be maintained (and allowed to vary) within that band.

The Cawthron Institute seeks more focus on water quantity. They see this as being of equal importance to ecosystem health, yet treated cursorily in comparison.

Clearer definition of maintenance, improvement and degradation

NZFSS, Fish & Game New Zealand and NIWA note that the NPS-FM includes definitions of maintenance, improvement and degradation of water (including statistical requirements for accurate and consistent estimations. NZFSS and Fish & Game New Zealand recommend, at minimum, basing maintenance on a specific method for detecting ecologically significant trends (based on the likelihood of trends). Auckland Council seeks more detail on trend analysis, offering to work with central government. This relates to the robustness of information required (more detail below).

The NZFSS and Ngāti Rangi are critical of the focus on responding trends, seeking more focus on improving water in a degraded state – defining degraded water as below national bottom lines *or not meeting community expectations*, and requiring improvement. They suggest wording for this.

The RMLA submission recommends that Policy 2.2 specify when maintenance is acceptable, and where human degradation necessitates improvement. Royal Forest & Bird also want to define the terms ‘maintain’ and ‘degrade’. Many seek more focus on improvement without necessarily requiring it – making it clear that communities can choose to do so.

NIWA seeks clarity and consistency on the time frame, spatial scale (see representative monitoring, below) and deteriorating and improving trends. It calls for national guidance on consistent analysis and reporting of trends.

Maintenance date for water quality

Submissions based on the template prepared by the Fish & Game New Zealand (over 2100) call for freshwater to be maintained as it was in 1991 (rather than the date the amended NPS-FM comes into force). The council’s own submission repeats this. They contend that, since 1991, regional councils have been responsible for maintaining water quality under the RMA and we should not permit their failures over the past 28 years to shift the baseline against which it will be maintained.

They say councils should already have data on the state of freshwater in 1991 or, if not, communities can provide it. Submissions suggest a range of dates, including 2011 and 2014.

In short, the view is that:

- current state is insufficient
- maintaining from a current or future date will lock in declines that have already occurred, or are looming.

This concern is shared by the NZFSS, the Environmental Defence Society, Greater Wellington Regional Council, and more generally by environmental NGOs and (the relatively few) iwi submissions that commented (eg, Ngāti Rangi).

In contrast, some regional councils argue this approach is too inflexible.

Representative monitoring and spatial scale

Horticulture New Zealand

- Monitoring sites (where freshwater will be maintained) must represent FMUs as a whole, or specifically link to site-specific values within it.
- If a unit has too many monitoring points, this will reduce land use flexibility and lead to grandparenting of rights, rather than sustainable management.
- Monitoring and data analysis is inconsistent across regions.
- The Government develop regulations and guidance for a more integrated approach.

New Zealand Freshwater Sciences Society

- Representative monitoring is insufficient to maintain water quality (although NZFSS does not appear to focus on preserving land use flexibility).
- Existing monitoring networks are not necessarily designed to be representative of an FMU.⁷
- Further direction and guidance is needed on setting FMUs and representative monitoring sites.

NIWA comments that the spatial scale at which water quality must be maintained is unclear and inconsistently applied. The Cawthron Institute comments on the spatial scale at which different attributes apply. Many regional councils mention the issue, seeking more guidance.

All the above indicate that managing water at the appropriate spatial scale (when setting FMUs) is important, and request more guidance.

Some submissions, such as the Royal Forest & Bird Society, are concerned that local government will not set an appropriate spatial scale when identifying FMUs in their regions, and request national direction, setting out criteria.

Concerns include:

- there is a risk of averaging out localised degradation
- existing guidance is not enforceable
- identifying FMUs is a matter on which people should be able to give feedback and seek alternatives.

⁷ This comment is consistent with that of the Parliamentary Commissioner for the Environment, November 2019, *Focusing Aotearoa New Zealand's environmental reporting system*, available on: www.pce.parliament.nz/publications/focusing-aotearoa-new-zealand-s-environmental-reporting-system

Fish & Game New Zealand requests that regional plans identify values and their spatial extent within an FMU (eg, identifying trout fishing and spawning as values to be managed for), and ensure that areas in an FMU and/or waterbody have their own environmental outcomes.

Many submissions noted the importance of monitoring generally, and the need to base decisions on accurate and reliable information (eg, CNI Iwi Land Management).

Cost of monitoring and reporting

Local governments generally express concern about the added cost of monitoring a wider range of attributes and reporting on the state of the environment. These concerns often relate to attributes rather than specific proposals to report on whether water quality has been maintained. Many regional councils indicate the cost of additional monitoring and reporting, and ask for this to be considered as part of the regulatory impact assessment.

Costs are often seen as high compared to existing spending and rates base, and are sometimes seen as diverting resources that would be better spent on improving water quality.

Remove requirement to set attribute states at monitoring sites

Northland Regional Council states that the requirement to set attribute states (to maintain, or otherwise) at each monitoring site is flawed and should be removed. The reason is that the monitoring sites are representative and will result in perverse regulatory outcomes. Instead, they consider regional councils should have the discretion to determine where they set target attribute states.

Federated Farmers also appears opposed, suggesting this approach is at odds with more holistic assessments of ecosystem health.

Lag times and the ‘load to come’

LGNZ comments that maintaining the current state of water will have a real impact (as opposed to just an opportunity cost) where there is a contaminant load to come. For example, lags in the hydro-geological system mean contaminants that have already been discharges may take time to present in surface water. In these cases, maintaining the current state will require existing land uses and discharges to significantly reduce contaminant losses. It considers this impact under-recognised in analyses.

Some local governments raise concerns about the impact of proposals – for example, Northland District Council notes inadequate assessment of the opportunity costs of maintaining all attributes.

Robustness of information for determining current state

Local government generally supported allowing for natural variability and sampling error when determining current state, and basing best efforts to identify a current state on information that is available (although some comment that modelling current states should be provided for).

However, industry and scientific organisations, and local government tend to raise concerns about the robustness of information and the uncertainty associated with it. Points include:

- improve the information base for freshwater management

- more detail on data requirements and methods for determining current state
- recognise that perfect information will not be available.

This is consistent with STAG's recommendation for guidance in determining an adequate level of monitoring.

Many recommend determining current attribute state using several years of data or appropriate statistics (means, medians, etc), to account for natural variability and ensure robust findings.

Another issue is lack of long-term data for evidence in RMA processes and engagement with communities.

Taranaki Regional Council notes the contradiction between timeframes for including current and target attribute states in planning by 2025, and new attributes requiring two-to-five years of data. They suggest plans required by 2025 should only have to include timeframes for identifying and notifying current and target attribute states.

LGNZ suggests the policy explicitly recognises uncertainty and 'precautionary principles when making decisions, that is, consideration of the risks associated with assigning a current state that either over or underestimates reality'. Some recognise that proposals do this to some extent, for example, Bay of Plenty Regional Council supports in principle reducing the evidential burden to deliver plan changes, applying a fit for purpose and precautionary approach (referring to proposals as consulted).

Industry organisations tend to take an opposing view. Federated Farmers comments that, where data is not available for representative monitoring sites, it is not appropriate to rely on partial data, local knowledge and information from other sources (as proposed). They prefer to prioritise monitoring and developing the information base, before initiating limits or action plans.

Role of modelling

Northland Regional Council, Auckland Council, and Greater Wellington Regional Council all request that proposals more clearly and consistently recognise the value of modelling information. This includes determining current attribute state and setting target attribute states, gauging progress and predicting declines. Auckland Council provides a case study showing the opportunities of using modelling – something they are already doing to determine current state.

Almost all local government submissions comment on the additional burden of monitoring more attributes and discuss resourcing. Modelling was often cited as a way to mitigate this issue and make better use of limited resources.

Others are concerned about the reliability of modelling (preferring monitoring), or request more direction to ensure it is robust and nationally consistent (eg, Horticulture New Zealand).

Tainui Partnership and a sheep and beef farm submission prefer monitoring actual outputs and freshwater outcomes, focusing on the effects of individuals and giving them measurement tools. This would allow individuals to focus on, and evaluate, the most effective mitigations and motivate others by demonstrating progress. The sheep and beef submission comments that individuals should not incur additional costs if they are having no more than a minor effect, and that actions to improve freshwater should not be based on modelling. This is consistent with feedback from farmers during consultation.

Preventing further loss of wetlands

Background

Infilling, drainage, diversions, vegetation clearance and piping lead to the loss of wetlands and streams. This is a significant and ongoing issue for ecosystem health. Wetlands are one of our most valuable ecosystems. Their benefits (eg, habitat, filtering contaminants, buffering floods) are worth an estimated \$5 billion per year. Today, less than 10 per cent of New Zealand's original wetlands remain. Recent studies suggest loss and degradation is continuing (between 2001 and 2016, a further 214 wetlands, or nearly 1250 hectares, were lost).

Proposal

We propose to restrict activities that lead to loss of natural wetland habitat through a combination of the NPS-FM (directing consent decision and plan making) and the NES (prohibiting the activity or imposing consenting requirements). There would be provision for nationally significant infrastructure such as state highways, allowing these to go ahead if adverse effects are offset where they cannot be avoided, remedied or mitigated.

Through the proposed NPS-FM Regional councils would be directed to avoid loss and degradation of their natural inland wetlands, identify, map and maintain an inventory of those that are over 500 square metres, monitor their health and promote restoration. Through the proposed NES any activities that contribute to the loss and degradation would be deemed non-complying, eg, drainage or vegetation clearance near the wetland, unless it is associated with restoration or other nationally significant activities.

Overview

Over 13,250 submitters comment on the wetland package. The majority are pro-forma submissions prepared by:

- Forest & Bird (5100)
- Greenpeace New Zealand (3500)
- ActionStation (1400)
- Fish & Game New Zealand (1400)
- Fish & Game Wellington (700)
- DairyNZ (500)
- Sphagnum moss supporters (220).

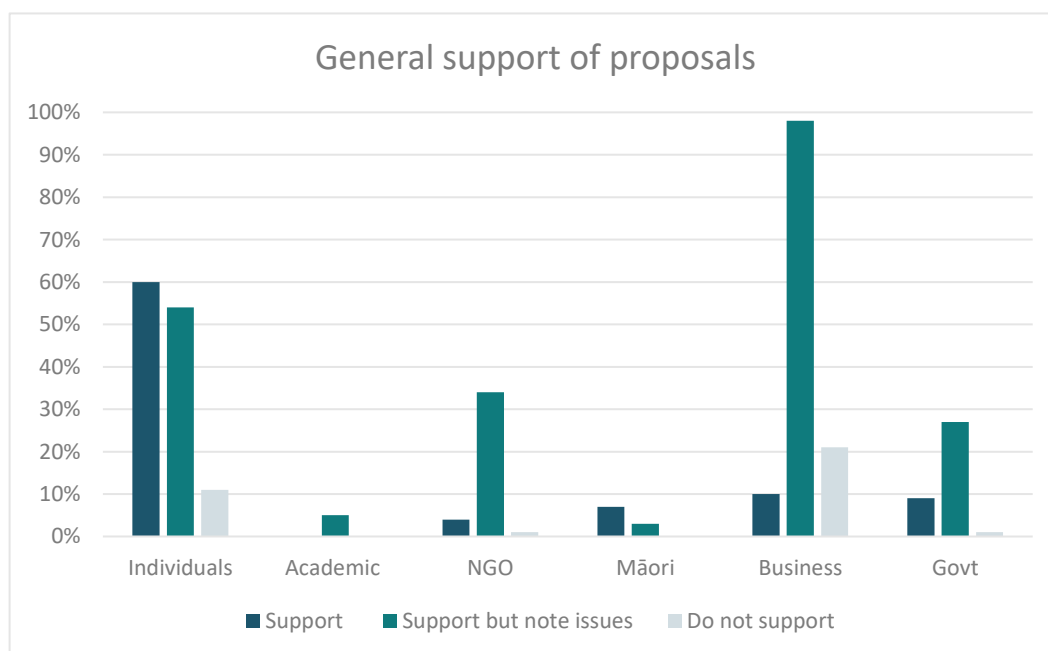
We also received about 435 unique submissions from the groups listed in table 4.

Table 4: Unique submissions received

Submitter type	Total	Breakdown of submitter type
Businesses	150	The majority identified as farmers, with a relatively even split across dairy, sheep/beef and other. Other sectors represented include: forestry, horticulture, industry – including Fonterra, mining, energy, ski fields, sphagnum moss growers and other sectors such as consultants and contractors.
Individuals	135	Half from the North Island, a third from the South Island, others were either overseas or not stated.
Non-governmental organisations (NGOs)	60	The majority identified as environmental NGOs, including Forest & Bird. One quarter were sector representatives, including farming, horticulture, forestry, airports. Others included QEII and National Wetland Trusts, New Zealand Freshwater Sciences Society and other environmental institutes.
Government agencies	60	All regional councils, 28 local authorities, Local Government New Zealand, and others, including 2 district health boards, 1 conservation board, and 7 Fish & Game New Zealand office submissions, as well as those from Kāhui Wai Māori, FLG.
Māori groups	15	Roughly half were iwi/hapū organisations and rest were other Māori affiliated groups.
Community groups	10	Predominantly community catchment and restoration groups.
Academic research	5	Mainly Crown research institutes and Cawthron Institute.

Note: The above figures are approximates.

The majority of submitters support the protection of wetlands, but note issues with what is proposed and/or offer suggestions. Figure 2 breaks down the submissions that clearly state their position on the proposals.

Figure 2: Level of support (where clearly stated) for the wetlands package within Action for healthy waterways consultation

Issues and themes

- Drafting – unclear drafting and general ordering of the documents and questions about the legality of certain policy direction.
- Definitions – need clarification.
- Concerns about details of policies and rules:
 - the effects management hierarchy
 - the avoid policy
 - the exclusion of geothermal wetlands and the National Environmental Standards for Plantation Forestry (NES-PF) prevailing for wetlands in forestry areas
 - implementation of wetland mapping, monitoring and inventory requirements
 - the lack of focus on restoration and interaction with the NPS for Indigenous Biodiversity (NPS-IB)
 - lenient NES rules for significant infrastructure, drainage districts and flood works
 - NES standard conditions and activity statuses
 - inclusion of coastal wetlands.
- Capability, capacity and cost of implementation.
- Support of the STAG recommendations including wetland attributes.

General comments by group

Individuals

Individual submitters tend to support the proposals, but many are concerned they are not strong enough. The main concerns are: protection of all wetlands (believing that those less than 500 square metres were not part of the protection), opposition to the NES-PF overriding the wetland provisions, and clarity of definitions.

Common comments include an emphasis on restoration and funding to help land owners protect wetlands, and ensuring wetland monitoring.

There is some support for including wetland attributes as per the STAG recommendations. Some do not trust councils; others think they will have capacity issues to do what is required. One submitter notes the need for clear links between policy instruments.

Businesses

Businesses generally support protecting wetlands in principle. However, most think the provisions were overly prescriptive and restrictive, and are worried about how these would affect their operations. Businesses tend to prefer:

- a no-net-loss approach incorporating the use of the effects management hierarchy, rather than a full avoid policy; and
- flexibility in rules or more lenient activity statuses.

Some point out that, through offsetting, they have made improvements to degraded wetlands in the past. The mining industry thought the provisions would risk valuable benefits to society from the extraction of mineral resources, over the modest ecosystem services provided by small and often compromised wetlands.

Fonterra and some farmers support the intent of the provisions through the inclusion of actions in farm environment plans rather than a consent process. Land owners are concerned about the cost impacts of the regulation, and want funding/ tax rebates to compensate for loss of land or to help restore wetlands. They believe that if protecting wetlands is of national importance, this should be paid for by central government rather than individual land owners. Of those that oppose the package, some farmers note that it felt overwhelming, and punishment for not draining their wetlands when the Government previously subsidised it.

Other points

- Hydro power companies, mining operations, and some farmers are concerned about how the package would affect their ongoing operation and consent renewals.
- Foresters want the NES-PF to prevail to avoid a significant increase in consents.
- Vegetable growers want to ensure earthworks rules do not inhibit food production.
- Sphagnum moss harvesters think the provisions would effectively shut down sustainable business operations on the West Coast.
- Concerns about broad definitions and details of directive policies and rules are also common.

NGOs

NGO opinions vary on the strength and achievability of the regulations. They are interested in clarifying definitions, policies and rules (many give their own re-drafting suggestions). Most point out that the NES activity statuses discourage restoration and should be more enabling.

Many environmental NGOs and wetland interest groups believe the regulations are too weak. They support regional targets for restoration, and the STAG recommended attributes. There are concerns about the exclusion of geothermal wetlands and the NES-PF prevailing over the proposed National Environmental Standards for Freshwater (NES-F). The National Wetland Trust believes that exemptions should be based on effects rather than industry or land use. One environment institute (EAINZ) states that the complete avoidance of wetland degradation was impossible and favoured an effects management hierarchy approach.

Agricultural and industry based NGOs generally think the regulations are too onerous, with excessive monitoring and unreasonable setbacks in the NES-F. There is opposition to 'blanket restrictions', which were viewed as costly, and a consents process which reduces motivation for farmers to engage with councils.

Government agencies

Government agencies want to clarify definitions, policies and rules, and some offer suggestions for improvement. In general, Fish & Game believe the package is not strong enough, one regional council thought it could be firmer by including coastal wetlands and prohibiting draining in any circumstances.

Many councils think protecting wetlands is important but the package is too onerous, costly and restrictive. Some say it would discourage good works or have unintended consequences for their area and current management. Councils are generally concerned with blanket provisions and would like to prioritise actions. One suggests that the sliding scale of significance (from Significant Natural Areas (SNAs) in the NPS-IB) would be a useful framework for wetland protection. Another council strongly opposes the proposal because of regional differences, noting the high number of wetlands in their region.

Some councils note that it is unclear where the jurisdiction of regional and district councils lies. The interaction with the Urban Growth Agenda is a common concern for district councils. Some think the requirements cannot be achieved in time through RMA processes. Opinions vary on the inclusion of coastal wetlands in the NES-F regulations.

Iwi/hapū groups and Māori organisations

Māori organisations are mostly supportive, although they note issues with definitions (two organisations encourage consistency with the RMA definition). One iwi opposes any need to seek consent for customary harvest. (Note: this is not the intent of the proposal.) Another notes that the proposed NES ignores issues significant to Māori and fails to recognise relationships with freshwater decision-making. There is some concern over impeding opportunities for developing Māori land. One Māori organisation (associated with the forestry sector) notes that plantation forestry would be disproportionately affected.

Community groups

Community groups are generally supportive. However, some state that the proposals are too onerous and suggest incentives for voluntary protection and restoration actions, and exceptions on some farms with good management practices. There is some concern that mapping and monitoring would cause confrontation between councils and land owners.

Academic and research organisations

Academic and research organisations call for clarification of definitions and technical detail, how to determine certain conditions, and note where guidance would be helpful.

The exclusion of geothermal wetlands is questioned. It is suggested that protection be extended to aquifers, because some wetlands are groundwater fed. Scion is concerned that the NES rules would impede research and monitoring, and suggests providing for this. Manaaki Whenua Landcare Research supports the wetland attributes, but recommends criteria of what to protect rather than wetland mapping – if an area was missed by mapping the restrictions would not apply to it.

Specific issues raised

Poor drafting and policy direction

Some submitters (mainly government, NGOs, and businesses) think the NPS-FM and NES-F are poorly drafted and confusing. They say there is no clear, rational link between the implementation methods for the policy and rules, and the requirements of regional policy statements and plans.

Other points

- The NES-F should be clearer, prescriptive to councils, and clarify where in the RMA the rules apply.
- District councils note it is unclear where the jurisdiction of regional and district councils lies. Many territorial authorities want control of restoration and constructed wetlands, but believe that regional councils should be responsible for monitoring and mapping.
- The avoid policy (3.15(2)) is immediately undermined by the effects management hierarchy.
- Policy 3.15(3a) does not make sense as 'policy cannot be read subject to rules'.
- Clarify some policies, for example, those regarding constructed wetlands (3.15(8)). National Wetland Trust says there are too many grey areas to be fully workable.
- Move all NPS-FM definitions to the front (Part 1.6) rather than spread across different parts (eg, wetlands definitions in part 3.15(1)).
- Wetland management is 'tricky' and 'bloated' because it has many interacting and conflicting pieces of legislation (submitters include NES-PF, New Zealand Coastal Policy Statement (NZCPS), NPS-Renewable Energy Generation, NPS-Urban Development (NPS-UD), and the proposed NPS-IB).
- Some district councils believe the provisions conflict with the Urban Growth Agenda, and the South Wairarapa District Council is concerned about the lack of clarity in the jurisdiction for wetland management under the RMA, and further duplication of the management framework.

Clarify definitions

New Zealand Wetland Trust states that definitions are important: too broad, and regulations will be unwieldy and untenable; too narrow, and they could be as ineffectual as the status quo. Definitions in the NPS-FM and NES-F are considered vague and all types of submitters seek clarity/tightening of the definitions, including measurable parameters, and consistent use of terms.

Many suggest their own amendments or request other definitions such as anthropogenic wetlands to be included (sphagnum moss growers). There are also concerns about what seem to be arbitrary exclusions in some definitions.

Some prefer the RMA wetland definition, although councils note this is hard to apply on the ground. Several say the language should be consistent with the National Planning Standards, and that it is unhelpful to introduce terms that are not used in environmental planning.

A common request is to refine the definitions for natural wetland and inland wetland into 'natural inland wetland'. The reasoning is that this is what the NPS-FM policies are for, and that the definition should include wetlands created for conservation and biodiversity offsetting, to give them the same protection. Opinions differ on including wet pasture in this definition. However, it is clear 'wet pasture' lacks description and is open to challenge.

The call for the definition to include an information note with examples of constructed wetlands was also common. There is some argument about what should be included as a constructed wetland, and what happens when a wetland is part natural and part constructed.

Some (mainly environmental NGOs) do not support the distinction between coastal and inland wetlands. It is a grey line where they start and stop and they should have the same protections. However, the NZ Airports Association wants to remove coastal wetlands, as the NES rules would affect airport development.

Effects management hierarchy is poorly understood for wetlands

There was concern among government, NGOs, individual and Māori submitters that offsetting was poorly understood for wetlands and does not make up for habitat loss. Guidance is sorely needed as in practice the effects management hierarchy is poorly implemented. One submitter comments that:

Re-created or constructed wetlands cannot replace existing wetlands in terms of functionality and diversity, even after many decades – this is poorly understood by council around NZ, so we must be careful not to allow offset arrangements under the RMA unless each case is extremely carefully considered.

Some councils and Fish & Game New Zealand question the definition of the hierarchy, as it is not consistent with international best practice. Questions are also raised about the uncertainty of where mitigation ends and offsetting and compensation begins.

Businesses tend to agree with offsetting, especially under RMA 104(1)(ab). To align with this, they say the NPS-FM and NES should allow for compensation. Opinion is split between no net loss and net gain. Some businesses were keen on the effects management hierarchy being ‘practicable’ rather than ‘possible’.

Concerns about the avoid policy

Local government mostly supports some increase in protection of wetlands but believes the draft regulations are onerous or too strict.

Some councils view it as unachievable or unworkable and preferred reframing it to a no net loss and where possible a net gain approach. Some seek to prioritise significant wetlands. West Coast Regional Council strongly opposes the proposal stating that it is potentially economically and socially unsustainable and therefore contrary to section 5 of the RMA regulations. They recommend allowing for regional and site differences. They seek flexibility in the regulations and recognition of regional variances. Councils and academic/research organisations note that degradation could only be measured against a defined state, but state that it is unclear how to determine this.

Some environmental NGOs, individuals and community groups are aware of how many wetlands New Zealand has lost and think regulations are not strong enough, wanting absolute protection. Some believe halting the decline does not go far enough, and want to increase wetlands by setting regional targets. The National Wetland Trust, Forest & Bird, and Greenpeace New Zealand thinks the ‘avoid’ direction should be general for regional and district councils – they would have to apply it through all planning instruments, not just regional.

Opposition to geothermal and forestry ‘exclusions’

Many submitters (mainly individuals, environmental NGOs and one council) are concerned about the exclusion of geothermal wetlands from the NPS-FM and NES-F regulations, as there is no clear reasoning for this.

Diverse range of submitters are concerned about the NES-PF regulations prevailing over the NES-F wetlands provisions – stating that it is an example of putting industry before the environment, the NES-PF has weak wetland rules, and there are too few wetlands to allow for any exemptions. Conversely, the forestry sector supports the NES-PF prevailing as it would reduce consenting requirements. (Note: the discussion document said that we would look at aligning the direction of the NES-PF with the NES-F in a future review.)

Mapping size, inventory and monitoring

Many individuals and environmental NGOs believe the mapping requirement for wetlands greater than 500 square metres means protection only applies to those areas and want all wetlands protected regardless of size.

Some point out that the 500 square metres scale conflicts with the NES-PF, which sets identification of wetlands at 2500 square metres. Most businesses and councils think that it is too ambitious to achieve mapping to 500 square metres at the local scale and would be better achieved by central government. Councils note the considerable cost and wanted more information on the help central government would give. Some oppose the mapping requirements, believing they have already gone through the process for their scheduled or significant wetlands.

Federated Farmers do not think it is reasonable or achievable, and note that nearly all wetlands contain threatened species. They call for clear parameters for privacy of information in the wetland inventory.

Others think the provisions could miss some wetlands. Greater Wellington Regional Council wants the mapping requirements to extend to coastal wetlands, and Forest & Bird seek to include mapping wetlands known to contain at risk species as these are also ecologically significant.

Some question the purpose of mapping. Manaaki Whenua Landcare Research recommends either a clear national map at a farm scale, or easy criteria for identifying existing wetlands. Fish & Game New Zealand suggests using the wetland delineation protocol to identify and define wetlands as the benefits of mapping are not clear; also mapping should be an optional extra. Potatoes New Zealand recommends that wetland maps sit outside the regional planning instruments and the NPS-FM directs a method to achieve it.

Some think monitoring should be at the discretion of councils and seek clarification on whether the requirements apply to wetlands on public conservation land. Land owners and some councils say Government should be responsible for monitoring and maintaining an inventory, at a national level. Councils note this would require significant resources.

Other points

- The wetland identification and delineation protocol is a blunt tool.
- National Wetland Trust: use the protocols to aid wetland identifications rather than to avoid doubt.
- Auckland Council: strongly supports the tool but says it is more appropriate as a rule in the NES-F.
- Some (including Forest & Bird and the STAG) call for completion of the hydrology component, to finish the suite of tools for these protocols.

Restoration: more focus and incentives

All submitter types call for more emphasis on restoration.

Comments include:

- Policy 8 should encourage wetland restoration/reinstatement, particularly where wetland loss is extreme
- the NPS-FM should include regional restoration targets for original wetland type (environmental NGOs)
- the current rules could discourage restoration, given the potential barrier of consenting and monitoring requirements
- the NES-F needs a framework for restoration activities, including permitted activity statuses. One council (Greater Wellington Regional Council) suggests tying this to an approved wetland restoration plan.

Wetlands provisions belong in the NPS for Indigenous Biodiversity

There are concerns about the interaction between the NPS-FM and the proposed NPS-IB for wetlands.

Forest & Bird thinks the NPS-FM and NES-F regulations do not go as far as those recommended by the Biodiversity Collaborative Group for the NPS-IB, which originally included wetlands as SNAs. This is because an area of habitat is partly wetland and partly high-value terrestrial SNA. The wetland could be destroyed but the adjoining terrestrial SNA could not.

Federated Farmers believe that it is more appropriate for wetlands to be regulated in the NPS-IB, informed by the upcoming biodiversity synthesis report. However, they oppose including wetlands where exotic vegetation may prevail in the natural wetland definition.

Some councils state that indigenous biodiversity is not adequately provided for if wetlands are not identified as SNAs under the NPS-IB. Waitomo District Council suggests applying the sliding scale of significance (from SNAs as per the proposed NPS-IB) to wetland protection.

West Coast Regional Council opposes splitting regulations across different policy tools, preferring them to be in either the NPS-FM or NPS-IB but not both, to avoid confusion about which provisions apply.

Leniency for nationally significant infrastructure, drainage districts and flood works

Nationally significant infrastructure (NSI), drainage districts and flood works being given discretionary activity statuses is contentious. Those against this lenience are seeking higher protection for wetlands. Those in support want to ensure their ongoing operations and to be included in the list of Nationally Significant Infrastructure (eg, all hydropower schemes, Transpower, mining operations, Marsden Point Refinery, and all lifeline airports).

Some submitters (particularly councils) wanted this leniency to extend to regionally significant infrastructure, especially where urban development is required for high growth areas. Some district councils note that they will not be able to maintain infrastructure within wetlands.

KiwiRail and hydro schemes comment that the rule framework does not align with the avoid policy. There is also no certainty that existing NSI can continue to operate, as a discretionary activity can be declined; it is not always possible to relocate large infrastructure. They seek more permissive statuses for existing infrastructure that are in line with other aspects of their bundled consents.

NES standard consent conditions and wetland monitoring

A range of submitter types (including NGOs and businesses) raise issues with standard consent conditions throughout the NES-F. These leave it to consent conditions to deal with key matters, such as assessing effects or setting the wetlands hydrological regime. They believe the consent application should determine these, and the consent authority should consider them before granting consent.

Opinions vary on including the standard monitoring obligations as a condition for a consent. Some ask them to be compulsory for all activities requiring a consent, and call for monitoring of fauna, by a suitably qualified person. Others find the rules too onerous, especially for restoration. They say the range of aspects to monitor is too wide and should be more in line with the scale of effects and risks of the activity. The council should determine appropriate monitoring approaches.

Avocado growers opposed this condition, as they believe monitoring is the sole responsibility of regional councils as per the intention of the RMA.

Activity status and clarity of details in the NES-F

Many submitters view the NES-F rules and activity statuses as too blunt. They question the discretionary and non-complying activity statuses for activities. Forest & Bird want more consideration of the division between permitted, non-complying and prohibited statuses, and the scale of activities. The National Wetland Trust cites a more flexible approach using the range of statuses, including where permitted and controlled would be appropriate. Many others (including councils, academic agencies, businesses and NGOs) comment in detail on the rules.

Other points about rules and activity statuses

- Some commercial submitters view the rules are overly onerous; activity statuses should be more permissive for small-scale activities.
- Consider the impact of activity statuses on consent renewal.
- Federated Farmers and some councils consider regional variation to be necessary.
- Kāpiti Coast District Council are concerned that the rules would inhibit the maintenance of some infrastructure sited in wetlands.
- Others (mainly individuals) state that drainage of wetlands should not be allowed in any circumstances.

Most submitters view a discretionary activity status as too harsh, as it could hamper restoration efforts. Greater Wellington Regional Council says this could be managed as a permitted activity in line with a wetland management plan.

Some agricultural NGOs predict unintended consequences such as reluctance of farmers and growers to engage with councils. One submitter stated:

Providing more enabling framework that gives a platform to build constructive arrangements between councils and farmers and growers around wetland management will result in far better outcome than the compliance heavy focus of the current proposed package.

They think some elements such as maintenance and management of wetlands should be permitted activities, managed through farm environment plans.

Some land owners oppose the setbacks for activities around wetlands, and councils tend to question basing them on effects based rather than arbitrary distances. One council points out that they are unnecessary given the RMA definition includes 'land water margins'.

Including coastal wetlands in the NES

This point yields few comments, and opinions vary. Some submitters note that an artificial split between 'inland' and 'coastal' wetlands makes no practical sense. For consistency, they call for extending the mandate for no further loss or degradation (NPS-FM, Policy 8) to the management of all wetlands. However, Auckland Council thinks coastal wetlands should fall squarely within the ambit of the NZCPS. They note that if the NES-F provisions remain, adverse effects could be permitted in coastal wetlands with features identified under NZCPS policy 11(a). Catalyst Consulting notes that the regulations must be consistent with the NZCPS where it applies.

The Airports Association does not want rules to apply to coastal wetlands, as this would affect any development of airports not listed in the NSI.

Council and land owner ability to act on the proposals

There is concern about councils' capacity to achieve the aim of the regulations.

LGNZ and some councils have significant concerns that there are not enough skilled professionals, particularly wetland ecologists and hydrologists, to do the work. Councils comment on:

- the cost, in particular for mapping and monitoring
- the data platforms for holding data
- additional expertise and personnel
- resources for implementation and guidance.

It was stated that the required increases of council rates would be unaffordable for many communities.

Some individuals do not trust councils to properly enforce standards. They note that developers shopped around consultants to find reports that suited the 'story' they wanted to tell councils. Some businesses note there isn't enough time for councils to protect wetlands alongside all the other provisions in the NPS-FM, and that they wouldn't allocate resources to do so.

Most submitter types say national funding is necessary to help implement the wetlands package and restore wetlands. Many farmers believe they should be compensated for loss of land and the ongoing costs of restoration. Their rationale is that if wetlands are of national importance then the nation should pay through central government funding. Suggestions include that the Government buys the wetlands and marginal land where activities are not allowed, or otherwise encourage land owners with tax breaks/rates rebates to protect their wetlands, given they cannot use their land if they wanted to.

Wide support for the Science and Technical Advisory Group recommendations

Many NGOs, research organisations, Fish & Game New Zealand, and some individuals support the STAG recommendations. These are to include ecosystem health attributes for wetlands (ie, wetland condition index and extent attributes). The STAG recommendations also note the need for: nationally consistent guidance or direction on the definitions of wetlands, and evaluation of their condition; the hydrological tool to complete the wetland delineation protocol; and farm environment plan provisions for wetland restoration and construction.

Preventing further loss of streams

Infilling, piping, straightening and other modification of streams are still commonplace and lead to a loss of stream length and habitat. This occurs in urban and rural areas, but the impact is particularly significant in urban environments due to development. Urban streams are a uniquely important habitat – they are the waterbodies most of us live next to and have the greatest connection to, and are often the last refuge for biodiversity in these highly modified environments.

We propose restrictions on infilling that contributes to loss of streams. Regional councils would be directed to maintain the extent and ecosystem health of streams; offset adverse effects where they cannot be avoided, remedied or mitigated; and collect information on the gains and losses of habitat over time.

Overview

Over 260 submitters express an opinion on proposals to halt the loss of streams. This includes written and pro-forma submissions from a wide range of groups.

Over 80 per cent support the proposals and less than 20 per cent oppose, or recommend substantial changes.

Table 5 sets out the number of submissions by topic.

Table 5: Submissions by topic

Topic	No. of submissions
Stream protection measures (in a general sense)	129
Offsetting	50
Infilling provisions (National Environmental Standard)	38
Impacts	13
No net loss definition	9
Implementation support	8
Drafting issues	22
Total	269

Support comes from a wide range of industries, sectors, councils, iwi groups, organisations and individuals, from both urban and rural areas. The extractive industries, infrastructure providers and some councils recommend substantial changes.

Issues and themes

- Most support the proposals, noting that it is important to protect remaining stream habitat. Many state that it is not enough to aim for a target of ‘no net loss’ and that continuous improvement of stream ecosystem health should be the aim.
- Some believe that stream and river habitat measures should be attributes in the NPS-FM.

- Some support offsetting and compensation, while others feel these lead to decline of ecosystem health. Several outline implications for ecosystem health outcomes and compliance monitoring.
- Those opposed believe the infilling measures are too strict; these submitters provide information on the impacts of the proposals and suggest changes.
- Councils in high-growth areas believe the proposals will reduce councils' ability to provide adequate housing, and conflict with the NPS-UD.
- There are concerns about the costs from a resource use perspective. Some note that the impacts on extractive industries had not been well covered in the interim Regulatory Impact Analysis, which focuses on urban development.
- Several mention the support needed for implementation, mapping and monitoring.
- Several suggest drafting improvements for clarity and consistency, and to reduce subjectivity in resource consent decisions.

Specific issues and themes

Support for the proposals

Many supporters note the importance of streams as habitats, and express concern about the damage to stream ecosystem health caused by forestry operations, urban development and agriculture.

Many support requiring a net gain, or continuous improvement of stream ecosystem health, rather than no net loss. Some support extending the proposals to ephemeral streams (the current proposal applies to permanent and intermittent streams).

The Authority submits that the Panel pushes further that what is promoted in 3.16(1) to include positive terms related to betterment, rather than 'at least maintained'. This will better achieve Te Mana o te Wai and would align with the Vision & Strategy for the Waikato River. – Waikato River Authority

NZFSS supports including all stream loss provisions in the NES, rather than the NPS, to bring in the requirements more quickly. NIWA suggests expanding the requirements for streams to include drains, irrigation races and other artificial waterways with freshwater values.

Tasman District Council supports the proposal to avoid infilling of streams, and recommends setting back development a minimum distance from waterways, to allow for natural form and function.

Stream and river habitat attributes in the NPS-FM

Currently, appendix 2 of the NPS-FM does not include river or stream habitat attributes. Fish & Game New Zealand recommend including sinuosity, active channel area, bankfull channel area, permitted flood plain area, braiding index, thalweg length, and area of pools, and at a minimum to maintain them in line with a 1991 benchmark.

Clarify and support offsetting and compensation

Submissions express varying support for the concept of offsetting, and raise the following issues.

- Offsetting and compensation can contribute to biodiversity decline when not administered or carried out properly.
- Robust methods are required to assess whether offsets bring the benefits they claim, so that the policy achieves its goals.
- Many support offsetting as part of the effects management hierarchy, noting that it should be a last resort after other options have been exhausted. One notes: 'Offsets never create new habitat to make up for permanently destroyed habitat; they merely restore the values we prioritise in degraded, existing ecosystems. There will always be a net loss of biodiversity, and offsetting should be strongly dissuaded unless absolutely necessary.'
- Not all ecosystem types can be offset and compensated for, and the policy should include provision to protect such areas.
- Wāhi tapu should not be considered for offsetting.
- Extend offsetting to other areas of the NPS-FM such as appendix 2 attributes (councils and hydropower operators).
- 'No net loss' should only apply as far as is reasonably practicable.
- The importance and benefits of allowing compensation as well as offsetting (extractive industries and hydropower sector).

Infilling provisions would restrict resource consents

Some submitters raise the issue that a directive to 'avoid' loss of streams by infilling would be unreasonably restrictive for industries such as mining and resource extraction, where resource use is restricted by the location of the resource. There are similar concerns about maintaining existing structures that might require infilling.

Several councils and industries support infilling as part of the effects management hierarchy, along with culverting and redirecting streams.

They note that a discretionary rather than a non-complying activity status would be better for stream infilling, because it would allow stream losses to be offset by creating habitat or improvements elsewhere.

Some cite instances where consent requirements for offsetting and compensation have contributed to positive ecological outcomes.

Exceptions to infilling provisions

Of those supporting the direction to avoid infilling, several recommend stronger proposals to remove exceptions for nationally significant infrastructure.

Others recommend widening the exceptions to include regionally significant infrastructure, urban development areas, or recommend an approach that is effects-based rather than activity-based.

Cost impacts for some activities

Some submitters outline the extra compliance costs for developers and public infrastructure providers.

One district council notes that this proposal 'will impact on urban design, meaning either a reduced developable area, or an acceptance of densification. This may require rethinking approaches to subdivision design, and possibly a new approach to growth'. Others point out that the proposals are consistent with the best practice principles of Water Sensitive Urban Design.

Conflict with National Policy Statement on Urban Development infrastructure requirements

Councils question whether the stream loss provisions conflict with the requirements under the NPS-UD. Palmerston North City Council gives a detailed submission:

In meeting its responsibilities under the National Policy Statement on Urban Development Capacity (NPS-UDC) and any future NPS-UD, it will be necessary for Palmerston North City Council and other territorial authorities to construct significant infrastructure to service the needs of new housing and businesses developments. While the Proposed NES-FM facilitates consenting pathways for nationally significant infrastructure there are no corresponding provisions to facilitate consenting pathways for the construction of significant infrastructure to service growth required by the NPS-UDC and any future NPS-UD.

Tauranga City Council outlines the requirement for substantial future urban growth in the city, and recommends further clarification of stream policies, eg, applying the effects management hierarchy and offsetting.

Support for implementation, monitoring and compliance

Many submitters note the importance of accurately quantifying offsets so that they do not lead to further loss of streams. They seek further guidance and methods to support this. For example, guidance on how to assess options for off-setting and how to compare off-set and stream-loss environments.

Many point out that regional councils will need to monitor active compliance monitoring, to enforce the measures. This would require additional funding and guidance. Water New Zealand states that 'to provide an incentive to prevent stream loss, the off-set option needs to be considerably more onerous than leaving streams intact. Advice to regional councils will need to make this approach clear'.

Some comment that implementing these proposals will require mapping and quantifying remaining stream habitat, and that this is a significant task.

Improve clarity and remove subjectivity

Submitters make several suggestions about details, such as:

- Terms requiring definitions, or existing definitions requiring clarification (eg, river, stream, intermittent stream, ephemeral stream, infilling, culverting/piping, no net loss, extent and ecosystem health of streams).

- Clarity on how net loss is measured. Some recommend specifying no net loss of both length and habitat.
- The subjective choice in the infilling provisions is inappropriate for determining activity status (18(1)d refers to 'for which there are no practical alternative methods of enabling the activity to take place'). One submitter notes, 'This means that for every subdivision or new development, a case will be made that there is no practical alternative. This means that there is no certainty or consistency across councils – essentially leaving this to be considered on a consent-by-consent basis'.

Fish passage

Background

About one-third of New Zealand's indigenous freshwater fish species need access to the sea, and both indigenous and sports fish require access between and within habitats to complete their life cycles. Unless infrastructure design and maintenance provide for this, structures such as culverts, dams and tide gates can delay or prevent fish movement and stop them from accessing critical habitats. Proposed changes would preserve the ability of fish species to move between habitats and begin restoring loss connectivity – critical for our indigenous threatened species.

Proposal

We propose to direct regional councils in how they manage new and existing structures through a combination of the NPS-FM (to direct plan making and consenting considerations), and the NES (to impose design requirements on some types of new in-stream structures less than four metres high).

Requirements include:

- weirs, culverts and tide flap gates meet minimum design standards based on the New Zealand Fish Passage guidelines
- regional councils monitor the abundance, diversity and passage of fish species and identify and work towards outcomes over time. This includes implementing a strategy to improve the performance of in-stream structures
- new consents are assessed for existing structures against regional plans in a way that works towards outcomes (eg, considers practicable mitigations) and collects information to manage the risk they pose.

Fish passage – problem statement

Freshwater ecosystems, and all their components, are not adequately recognised and safeguarded. We only have partial information on the number and location of barriers, which makes management difficult. Many barriers are the legacy of a time when less weight was placed on the implications for fish passage. Also, structures become a barrier over time because of poor design or maintenance against erosion. Rough estimates from the Department of Conservation suggest that there are 120,000 in-stream structures in our waterways, and that a quarter to a half will be assessed as possible or likely barriers to fish passage. Currently, the decision to survey and record fish barriers is at the discretion of councils, and effort has been patchy. However, recent work on a database and software application to store standardised information may help address this.

Overview

In total, 217 submitters comment on proposals to improve fish passage. Of these:

- 91 per cent support or support in part the overall direction of the proposed NPS-FM and NES.
- 9 per cent oppose or oppose in part the overall direction of the proposed NPS-FM and NES.

Issues and themes

- **General direction:**
 - General support for direction to improve fish passage. The NZFSS notes that loss or reduction of habitat caused by barriers to fish is a key factor in the decline of fish populations and depleted fish communities in Aotearoa New Zealand. NIWA considers it ‘critical to achieving objectives for aquatic life, and for protecting several compulsory values, including threatened species and mahinga kai’.
 - Many land owners express concern at rules changing over time, or ‘goal post moving’, leading to an increased cost and workload to the farming community.
 - Some recommend provisions at regional/catchment rather than national level, as conditions vary throughout the regions.
- **Fish objectives and valued species:** Some comment that identifying valued species (for which structures must provide fish passage) should not be left to regional councils and the planning process. However, many councils were happy with this, including Christchurch City Council.
- **Treating existing structures:** Opinions are mixed on whether passage requirements should also apply to existing in-stream structures. There is support for both applying requirements and exempting these structures.
- **Remediation work programme:** Many see remediation on existing structures as essential to ensuring passage in our waterways. Councils note that there are many thousands of potential barriers in their regions and that remediation requires a lot of time and resources. Hamilton City Council considers five–10 years a reasonable time to require remediation.
- **Hydro generation:** Opinions vary widely on whether to exclude hydro generation. In general, power companies and local government consider that there should be an exclusion; iwi and hapū representatives and individuals oppose an exclusion. Submitters generally consider that the effects of hydro schemes need to be understood, to identify and action mitigations.
- **Ongoing maintenance:** Many, including the New Zealand Fish Passage Advisory Group (NZFPAG), note that providing fish passage for the foreseeable life of the structure is critical, and that the NES Freshwater conditions should include monitoring and maintenance.
- **Data collection and reporting:** DairyNZ offers several ideas for collecting data, monitoring and reporting on the presence of fish and barriers, including the development of geographic information system (GIS) layers by regional councils. Several councils express concern about the ability to collect data on barriers, especially on private property.

- **Fish passage requirements:** A few seek changes and clarification of fish passage requirements, including to some conditions and wording in the NESF and NPS-FM.
- **Drafting:** Various changes to clarify requirements and meet the intent of the Essential Freshwater package:
- In the NES ‘the extent to which the structure does not cause a greater impediment to fish movements than in adjacent stream reaches’, should refer to barriers that would be naturally present, to avoid a perverse outcome of existing barriers justifying addition of further barriers.
- Some definitions should be clarified and/or amended, and some definitions added, such as ‘work programme’ and how this relates to an action plan.
- Other suggestions:
 - the NZFSS suggests a target for at least 90 per cent of river reaches to have unhindered connectivity with the coast
 - Awarima Farming Partnership suggests the Government assist affected parties, as activities were previously legal
 - Federated Mountain Clubs of New Zealand asks that proposals do not conflict with the Conservation Act 1987 and the Freshwater Fisheries Regulations 1983.
- Implementation:
 - NIWA states that it will be a significant undertaking, but achievable over time using existing tools. It suggests additional guidance and support for councils, in particular, tools for assessing the performance of structures, and selecting effective remediation
 - many district and regional councils support the intent, but consider implementation challenging, especially for remediation on private land
 - some businesses seek clarification or guidance on how fish passage requirements would work in practice.

Concerns and recommendations

Although most submitters support the proposals in principle, some concerns appear to vary by submitter type.

- Linear infrastructure operators (eg, KiwiRail, district councils) signal that they would not be able to retrofit all existing structures in a short time (less than 10 years). They note the size of this legacy and the need for them to balance freshwater needs with safe and efficient infrastructure.
- Academics and research groups, CRIs, and government advisory groups make some recommendations. NZFPAG, which counts as members some infrastructure operators, says it is essential to address existing structures, but that this will take time. They suggest that the NES should at least apply to existing structures when their consent expires, or a structure is being upgraded or modified.
- Local authorities have some concerns about implementation and costs. LGNZ does not consider they have the authority in their regional plans to compel private land owners to do remediation work. They note they would need significant funding, whereas their Economic Evaluation by Castalia rate the fish passage policies as having ‘low materiality’.
- Individuals and land owners. One farmer with a number of drains and culverts on the property comments that discussions about the proposals (rather than the proposals

themselves) have raised awareness about providing for fish passage. Many suggest the Government provide money to assist remediation. Others comment that costs would be minor, and some could be passed on to customers or consumers of the land owner. Many individuals believe hydroelectric generators should not be exempt from requirements to provide for fish passage.

- Industry groups had some concerns. Federated Farmers acknowledge the value of freshwater fish and importance of managing their survival, but oppose the proposals in part. They comment that existing regulations already tightly control and address the problem. However, they do support land owners informing councils about structures. They support not providing passage in all rivers where passage of undesirable species should be impeded.
- Iwi/hapū and Māori groups note that hydroelectric generators affect safe fish passage and thus their ability to harvest mahinga kai. They are not in favour of an exemption.

Specific issues and themes

General direction to improve fish passage

A high number (about 90 per cent) support the overall direction of the proposals, noting that fish passage is an important part of protecting ecosystem health and fish habitat.

However, some (individuals and businesses) prefer to set provisions at regional and catchment rather than national level, as conditions vary throughout the regions.

Fish objectives and valued species

Submitters support the fish objectives and valued species. Some consider that identifying valued species (for which structures must provide fish passage) should not be left to regional councils and the planning process.

Many councils support this aspect of the policy. For instance, Christchurch City Council supports the requirement for regional plans to include objectives fish passage. They note that this is consistent with their work identify structures, and in collaboration with Environment Canterbury to prioritise and remedy barriers.

Farming industries such as DairyNZ and Fonterra would like guidance on how to meet the value for threatened indigenous species as well as managing undesirable fish species – specially where undesirable and threatened species use the same waterway in their life cycles.

Some submitters (eg, Fish & Game New Zealand and individuals) say the direction should be to improve fish passage for all species (native and valued introduced), and not to restrict passage for some species for the benefit of others.

Conversely others, such as Federated Farmers and some individuals, note the adverse impact on taonga species of a general direction to improve passage for all species, including predatory exotics like trout and salmon.

Submitters note that the proposals appear to give councils responsibility to manage species – a function held by the Department of Conservation. Some comment that the word ‘undesirable species’ may task regional councils with managing fish species interactions,

which is not a function they hold under the RMA. These submitters state that managing habitat is a function under the RMA, but not managing the species themselves. Fish & Game New Zealand states that regional councils do not have the function of managing species under the RMA, and that setting objectives for which species go where is in contradiction with the Freshwater Fisheries Regulations 1983. It does not consider that regional councils should be able to declare trout as undesirable.

A few (including the Environmental Defence Society) suggest using the word 'pest' rather than 'undesirable species', as 'pest' is consistent with the Biosecurity Act and the Regional Pest Management Plan. 'Undesirable species' is undefined and uncertain. Some also want a definition of 'undesirable species' (Central South Island Fish & Game Council). An individual suggests replacing 'undesirable species' with 'pests': 'pest means an organism specified as a pest in a pest management plan, as per the Biosecurity Act 1993'.

Treatment of existing in-stream structures

The discussion document asked, 'Should fish passage requirements also apply to existing in-stream structures that are potentially barriers to fish passage, and if so, how long would it take for these structures to be modified and/or consented?'

Responses are mixed. Some want the requirements to apply to the structures (similar to those in the NES); some support the proposals; others oppose them, including for existing structures.

A number, including iwi and hapū, environmental NGOs and individuals, believe the requirements should apply because addressing existing stream barriers is crucial to ecosystem health.

Some – particularly land owners, businesses, or providers reliant on structures that impede fish – note the potentially high cost of applying for consents or retrofitting. Some, including councils, say requirements could be costly, particularly if they include new consents or a review of existing consents before they expire. In this case, they recommend Government resourcing.

Some say the requirements should be similar to those for new structures in the NES. Others support the proposals in the NPS-FM for a work programme to address them. Another suggestion is that structures must provide passage, or be removed.

One submitter suggests that new structures should have to be built without potential barriers, as part of farm environment plans.

NZFPAG and NIWA comment that fish passage requirements must apply to existing structures, to achieve the Government's objectives and to increase protection for compulsory values in the NPS-FM.

Some suggest that the NES requirements apply to existing structures; others that they at least apply when consents expire. Another suggestion is to make gradual improvements at the end of a structure's functional life. Some state that existing structures should have to comply when consent is renewed.

Some support the NES requirements for new structures built after the commencement date. For example, Alliance Group supports applying clause 19(1) only to structures built after the commencement date, as in some cases a standard fish passage structure cannot be made retrospectively.

Auckland Council supports the fish passage requirements for structures that are potential barriers. However, they do not support the proposed NPS-FM Policy 3.17 (3)(b), to consider the impacts of existing barriers when assessing proposals to build new structures. They state that building further barriers where existing structures may already inhibit passage does not take into account remediation over time.

Conversely, Christchurch City Council says the requirements should also apply to existing structures that are potential barriers, and include a timeline for modifying or consenting these.

Environment Southland and Tasman District Council say that fish passage requirements should apply to existing instream structures, although they note that implementation issues must be considered. Environment Southland also considers that there may be a need for 'considerable lag time as some consented structures have relatively long duration consents'.

Porirua City Council recommends removing fish barriers when consent is renewed or when the in-stream structures are due for upgrade. It says removal should be part of a catchment-wide programme to address fish passage.

Water New Zealand comments that in some cases, consenting and building fish passage would be relatively inexpensive. 'Structures which provide barriers to fish passage should be removed from natural waterways if they are unused, or fish passage structures should be required to be constructed at these sites within a five-year period.'

One individual opposes applying the provisions to existing structures. They estimate that there are 100-150 culverts, and although these probably comply, applying for consent would be a significant cost.

Some note that having to modify existing structures may prioritise species such as trout, and may affect habitat of native species.

Some submitters, in particular individuals and NGOs, suggest that the NES require the identification and removal of existing barriers.

Remediation work programme

Submitters generally support councils having to develop a remediation work programme. Some suggest similar approaches to addressing barriers in in-stream structures over time.

The Cawthron Institute supports the proposals, including to 'identify and address fish passage issue of existing structures'.

A few seek clarity in the NPS-FM on:

- whether changes to existing structures would be required (what actions would councils have to take once a work programme is in place)
- when and how requirements would apply to existing in-stream structures (eg, at the re-consenting stage, or during a review of resource consents).

Wellington Water, on behalf of Hutt City Council, asks:

- who will pay for remediation
- how will the programme require owners to do work if the regional council does not own the structures

- will the owner upgrade 'when applying to renew existing consents, or is it intended that existing consents would be reviewed to impose this obligations, for instance?'

DairyNZ recommends viewing remediation, although an important long-term goal, as a separate initiative, due to the significant cost for existing structures, in terms of time and resources. Remediation should ordinarily occur when existing structures require upgrade or replacement.

Auckland Council notes that the full extent of existing in-stream structures is unknown. To date, watercourse assessment reports identify over 1000 potential barriers in council-owned infrastructure. It is unable to quantify the time required to remediate all existing potential barriers.

Some suggest timeframes for modifying and consenting, ranging from 1 to 25 years. They note that some structures may be easier to remedy, so timeframes may vary.

Hamilton City Council considers between 5 and 10 years a reasonable time to remedy barriers.

NIWA sees issues in applying the remediation proposals in the NPS-FM if the NES does not include existing structures. 'Many existing structures were installed under permitted activity rules that did not require notification, meaning their existence and location are unknown, creating problems for regional councils in implementing NPS-FM c.3.17(5)a.' It also notes that the 'remediation toolbox' is limited, and suggests investment to explore more solutions.

Te Runanga o Ngati Ruanui Trust suggests that the requirements include identifying existing structures, and prioritising removal of culverts and weirs.

Rangitāne Tū Mai Rā Trust proposes that land owners identify culverts on their land, and that councils should be required to make a plan and record of existing structures with timeframes for remediation.

NZFPAG suggests that the fish passage provisions in the regulations enable the 'use of a controlled activity for activities associated with fish barrier remediation carried out in accordance with an approved fish passage management plan'.

DairyNZ suggests identifying significant natural impediments to fish passage, including hydro schemes, making them available for farm plans. Any subsequent fish passage requirements should reflect the presence of these natural hazards.

A few individuals call for a plan and stocktake of existing structures. One requests that 'councils be required to make an inventory of existing structures and develop a plan (with a timeline) for inclusion of fish passage on them. This may include manual capture and transfer of fish on an annual basis, as is done on the Hinemaia River near Taupo.' Another suggests that land owners should have to identify culverts on their land and remedy any existing barriers.

Hydroelectric schemes

Whether hydro generators should be required to provide for fish passage comes up in 10 per cent of submissions on fish passage:

- 9 per cent say they should be required to provide passage
- 1 per cent say they should be exempt.

Views differ on how they should provide for fish passage, and whether this would apply to existing or new structures.

AM2 and Associates oppose an exclusion, referring to the consequence of schemes preventing free passage of migratory tuna, necessary for the completion of their life cycle. It notes that small fish passages can be made, but power companies will be unlikely to do so unless required.

One individual suggests the schemes should have to allow for passage by trap and transfer or other mechanisms. However, Alliance Group note that their scheme is considered a partial barrier for some fish species, and as structures for passage have failed, they have a trap and transfer scheme. This solution would not fit with 'Standard Fish Passage Structure Information'.

Ngati Tahu–Ngati Whaoa Rūnanga Trust and Te Kāhui Wai Māori oppose an exclusion. Ngati Tahu–Ngati Whaoa Rūnanga Trust states that the Waikato Hydro Scheme has affected its ability to harvest mahinga kai, due to a lack of safe fish passage.

First Fresh NZ favours exceptions, but consideration should be given to ensuring passage for spawning.

Hydro generators note that the NPS-FM does not specify that hydro reservoirs would be exempt. They raise concerns that reservoirs could be 'identified and subsequently prioritised as existing structures that impede fish passage'⁸. Meridian Energy calls for changes to the NPS-FM 'to reflect the different outcomes that may be achieved for providing fish passage for new structures and existing structures'.

Genesis Energy, Trustpower and Mercury NZ consider that there should be an exclusion. Genesis Energy recommends the following amendment:

Nothing in clause 3.17 shall apply to the ongoing operation, maintenance, upgrade or replacement of existing hydro scheme structures constructed before the commencement date of this document, except to the extent that such structures already operate fish passage facilities in which case this clause may be relevant to the maintenance and monitoring of such facilities.

One submitter says the proposals should look at retrofitting and remediating dams and hydropower systems 'to avoid the extreme loss of life occurring for creatures like the long-finned tuna'. Another submitter notes that allowing for fish passage would be voluntary for hydro-electric dams. They believe all hydro-electric dams must protect eels from loss of life when they migrate.

Canterbury Aoraki Conservation Board states: 'Greater clarity about responsibility for removal and remediation of fish barriers is required'.

Ongoing maintenance

Some, particularly research groups, advisory groups, environmental NGOs and councils, recommend monitoring and maintaining new and existing structures, and requiring provision for passage throughout the life of the structure.

⁸ Mercury NZ Limited submission.

Tasman District Council believes that ongoing monitoring and maintenance is necessary to ensure passage over time. They support the monitoring and restoration requirements following storms. They consider the cost of compliance and monitoring a challenge. 'Tasman's experience has been that the challenge with fish passage is the ongoing monitoring and maintenance necessary to ensure ongoing passage over time, particularly after storm events, and the subsequent cost of compliance monitoring that goes with this.'

NZFPAG and NZFSS state that providing passage for the foreseeable life of the structure is critical and should be included in the NES Freshwater conditions. NZFSS notes that remediation methods 'will require ongoing maintenance, eg, mussel spat ropes need regular replacement due to breakage and downstream water level controls can be eroded'. NZFPAG shares this opinion and requests that wording in the NES is updated to specify that the conditions must be met for the lifetime of the structures.

The Catalyst group, Perception Planning note that structures affecting passage can become fish barriers over time if maintenance is not adequate. They request a requirement for passage to be maintained 'at the level of the design for the lifetime of the structure. Monitoring over time will also be needed.'

Forest & Bird believe the NES should require monitoring and maintenance throughout the lifetime of the structure 'to ensure they do not become barriers to the movement of aquatic organisms'.

Data collection and reporting on structures

There is general support for collecting data where there are existing structures, particularly as many see this as an essential part of identifying remediation of existing structures.

NZFPAG supports monitoring requirements as part of the NES conditions. The Canterbury Aoraki Conservation Board recommends routine monitoring. Christchurch City Council refers to collecting data and monitoring new, old or retrofitted structures as way to monitor whether structures are effective in enabling fish passage. This would be beneficial because surveys are rarely done currently.

Some farmers suggest including information on existing structures on their farms in farm plans. Waytemore Farms, Adfordston Farms and Kauri Hiwi say this is already happening in Fonterra Riparian Management Plans and farm environment plans (FEPs).

DairyNZ agrees that Fish Passage Guidelines are a pragmatic guide to installing, monitoring and maintaining in-stream structures. They do not support monitoring of stock crossing structures, noting that installation standards should safeguard fish passage. They recommend that all regional councils develop GIS layers for undesirable fish species GIS layers. These should be freely available to upload to farm plans, to help farmers identify issues with pest fish.

Additional tools

There are suggestions to include tools or information in the regulation, to support data collection and reporting – for example, standard measuring/data collection tools.

NZFPAG suggests using nationally consistent key parameters or methodology for evaluating fish passage risk. This would also support reporting. They suggest that the regulation 'include minimum key parameters that must be collected at in-stream structures including the

standard fish passage in-stream structure information as identified in section 20 of the proposed Freshwater NES'. The compulsory fields in the Fish Passage Assessment could be a basis for determining the requirements.

Tasman District Council also recommends using a standard measuring or data collection tool. They note that the NPS-FM should 'list or refer to a list of the key parameters needed to be measured eg, perch height and over-hand length, maximum water velocity (if more than one culvert, measure in each), water depth'.

NZFSS also notes that reporting and monitoring would be difficult. Culverts are a permitted activity in many regions and considered permitted in the NESF. NZFSS suggest making culverts a controlled activity if they provide passage, and discretionary if they are a barrier. 'This would assist councils to track and monitor the by far most common type of structure in streams.' They believe this would give councils better oversight of culvert types and numbers, and whether they provide passage. They note that if culverts are permitted, it would be costly and difficult for councils to meet the passage requirements.

Tasman District Council suggests that the NES-FM includes a requirement 'for structure owners to notify councils with structure location (at a minimum)'. This would help regional councils comply with the NPS-FM.

Clarify fish passage requirements

A few submitters seek some changes to and clarification of the fish passage requirements.

Dunedin City Council: The draft NPS-FM and Freshwater NES should ensure that the protection of fish passage, wetlands and streams does not unreasonably affect territorial authorities in the following services:

- management of urban stormwater systems
- spatial planning that fosters infill development in urban areas
- roading infrastructure
- landfills.

Tasman District Council: Clarify the requirement in section 21 (f) of the NES 'stable for at least four fifths of the time', particularly what 'time' would be considered and why a fraction is proposed.

The person building a culvert should give water velocity information to the council. Make the requirement listed in 21(1)(c) maximum velocity, not mean. Conversely NZFPAG wants the mean water velocity to specify the *natural* mean water velocity.

Brownrigg Agriculture Group: Using 'four fifths of the time' is impractical – how would it be monitored? Using 'mean cross-sectional velocity' is also impractical, as the culvert is 'usually narrower than the stream and so the velocity inside it will also be higher than in the stream'.

For the 21(1)(g) requirement of the NESF 'it is usually impossible to retain stream substrate over the full length of the base of a culvert'.

Passive floodgates 'are used extensively in farming operations and if well maintained do not impede fish passage as the flow through them causes the flapgate to remain partially open allowing fish to navigate up and down the stream. If the flapgate closes because there is no water flow to keep it open and in that case there seems little point in providing for fish passage'.

Dairy Holding: 21(1)(d) in the NESF would 'preclude the construction of multiple culverts for permitted activity status'. It would be more cost effective and better from an engineering perspective to have a number of smaller culverts and let the river flow over the top when it floods. Clarify that 'the measurement of the "bankfull width" is taken from the point along the river where the culvert will be constructed, and not based on an average or maximum width of a river'.

NZFPAG: Include bridges or highlight them as a preferred structure. Bridges are generally preferred and have the least impact on fish passage and in-stream habitats. Auckland Council: Clarify how the proposed provisions differ from and are intended to interact with the existing fish passage regulations, under the Freshwater Fisheries Regulations 1983. Fish and Game share this view, stating that the relationship between these directives and the Freshwater Fisheries Regulations are unclear.

Nelson Forests, Timberlands and other businesses subject to the NES-PF requirements: The NES-PF and the NES-F should have similar but different requirements. Nelson Forests: 'All requirements for plantation forestry should be retained under the NES-PF to avoid having to reference two different sets of rules'. Timberlands: either regulate the land used for forest under the NES-PF, or the provisions in the 'NES-PF for fish passage replace those set out in the NES-F at present'.

Hutt City Council and Porirua City Council: It is unclear who has to pay for remediation to existing structures, and how owners will be 'required' to undertake work when regional councils do not own the structures. The NPS-FM makes this clearer to ensure the work programme has the desired effect.

Some submitters note that the relationship is unclear between the Freshwater Fisheries Regulations 1983, the NES-PF and the proposed NES-F, and the Conservation Act 1987.

Drafting improvements

A few submitters comment on drafting, and unclear definitions.

Fish and Game: The NES as written allows for barriers to fish passage if there is an existing impediment elsewhere in the waterbody. Amend it to require the passage of fish regardless.

Auckland Council: Clarify the definition of 'maximum allowable water velocity', as it does not expand or specify what is meant by the 'requirements' of the weakest species or weakest life stage of a species.

Environment Southland: The guidelines are clear, but they could be more suitable as notes.

South Waikato District Council: Supports the standardisation of information for fish passage in subpart 3 of the draft NES-FW. The draft regulations are unnecessarily complex, are not standalone regulations, and require reference to regional plans.

NZFPAG: Improve some drafting in the NPS-FM and the NES, and refer to downstream and upstream structures in the NPS-FM.

Some submitters seek clarity in the NES conditions that require the 'person constructing the structure' provide information on the structure or the installer's representative, rather than just the person constructing the structure (NZFPAG).

NZFSS: The NES definition of culvert is unclear, and too permissive in the draft NPS FM and NES. 'The NES Freshwater does not specifically note that a culvert is for access nor does it differentiate a culvert (which is the minimum size needed for access) from a reclamation (eg, piped flows under fill).' It is unclear whether a culvert in a wetland is considered a culvert or a pipe. 'Building a culvert in a wetland results in reclamation of that section of wetland' and the definition should exclude structures in wetlands. Suggested definition:

A culvert means:

- a. a pipe or box structure with an inlet and outlet to a lake, river, stream or coastal marine area, designed to enable access across a river/lake/coastal marine area, such as a road or stock crossing, which has been designed to be the minimum size necessary to achieve this purpose; and
- b. specifically excludes structures in wetlands; and
- c. does not include stormwater pipes or reclamations.

Tasman District Council ask for a definition of an 'active floodplain' and a dam.

The NZFSS comment that in the NES, 'the extent to which the structure does not cause a greater impediment to fish movements than in adjacent stream reaches', should refer to barriers that would be naturally present, to avoid a perverse outcome of existing barriers justifying addition of further barriers.

Implementation

DairyNZ express concern over the resources required from regional councils to identify all existing fish passage structures. They suggest that farmers not be required to replace existing stock crossings that were installed to meet targets in Sustainable Dairying: Water Accord, until those structures require upgrade or replacement.

Auckland Council believes the remediation of structures on private property may be discouraged by requiring resource consent. They call for provisions to ensure remediation in these circumstances.

Tasman District Council ask central government to provide guidance 'to the roading industry and development appropriate training and certification schemes to ensure contractors have the necessary understanding to assess fish passage requirements during maintenance inspections'.

Some farmers support fish passage provisions, and note FEP is an opportunity to record and address barriers in existing structures. However, Te Tatua Co-operative Dairy Company, for example, seeks 'a more detailed understanding of how requirements around instream barriers would work in practice, particularly in our local area where undesirable fish species such as koi carp and threatened indigenous species may utilise the same waterway in their life-cycles'.

KiwiRail Holdings asks for a national database of what species are found where, to provide effective passage to the site and species in those waterways.

NZFPAG suggests that central government contributes, particularly as there would be high costs and probably a need for ecologists.

Awarima Farming Partnership suggests government assistance for affected parties, as activities were previously legal.

Creating a new National Environmental Standard for freshwater

This section summarises issues and themes raised on proposals to create a new NES-FW.

General farm planning

Background

Mitigating adverse effects of farming often requires location-specific responses tailored to farm type (eg, stock, crops), soils, climate and topography and the catchment. Farmers, industry bodies and councils are increasingly using farm plans to develop and implement these responses – but update is patchy.

To date, a number of primary sector groups have voluntarily signed up to having farm plans for all farmers. Beef + Lamb New Zealand's target is for all farmers to have plans by 2021; Fonterra and DairyNZ have a target of 2025.

What's been proposed?

We proposed that by 2025 all farmers and growers (above 20 hectares, or five hectares for horticulture enterprises) have an FW-FP that addresses property-specific risks to water quality associated with the enterprise and its catchment.

A certified farm planner would approve the plan against the NES requirements. There would be independent auditing by an approved auditor every two-to-three years. The NES proposes the FW-FPs will be required by 2022 for commercial vegetable growers, and for farms on highly erodible land in the Kaipara catchment.

FW-FP provisions are also embedded in other NES requirements for managing high-risk activities. These include winter grazing, feedlots, feedpads, stockholding areas, sacrifice paddocks, intensification of land use, and managing high nitrogen leaching activities in highly degraded catchments.

Overview

We received comments on farm plans from: a large majority of submitters from the primary sector industry; local government; environmental NGOs; many farmers and growers, and a smaller number of Māori individuals and organisations.

They raise the following issues:

- the proposal for mandatory FW-FPs (question 54 in the Essential Freshwater discussion document)
- who must have a plan and by when (clause 37 of NES)
- the proposed content of the plans (clause 38 of NES)
- the proposed requirements for certification and auditing plans (clause 40 and 41 of NES) and associated compliance monitoring and enforcement
- the impact on the type of help needed to achieve the proposals.

A number comment on taking an integrated approach to farm planning, with greenhouse gas management a common example. Fertilizer New Zealand states that advice on managing impacts on freshwater should align with that on greenhouse gas (GHG) emissions. If FW-FPs

are developed without considering emissions, they might advise choices that are not optimal for GHG, eg, switching fertiliser to palm kernel extract, increasing whole of life GHG emissions.

Another submitter suggests a holistic approach, incorporating impacts on people, animals and the environment. The Environmental Defence Society comments that [non-statutory] farm plans can evolve via sector groups and embrace non-RMA responsibilities in a holistic way. They outline how the farm will address the full range of environmental factors, including climate change, and natural and cultural landscape features. New Zealand Kiwifruit Growers seek clarity on whether the intention is for the plans to be a module of a wider, integrated farm plan.

Linking farm plans to water quality challenges in the catchment

The Cawthron Institute says farm plans should explicitly connect to freshwater outcomes in regional and action plans. Fish & Game New Zealand notes that farm plan should be connected to the catchment. Hawkes Bay Regional Council wants to include more provision for collective action. A number call for more support for catchment groups.

Nature of farm plans

Common themes are the importance of farmer-ownership of the FW-FPs; the plans being useful for farmers; and avoiding them becoming a 'tick box' exercise.

Fertilizer New Zealand: Farmers will need high-quality, consistent advice to give them the confidence to invest and adopt new practices. All farmers and growers must develop FEPs that consider the context of the farm and identify tailored good management practices (GMPs). Farm plans must be strategic documents that inform practices and deliver assurance, rather than just a compliance exercise. Advice should start with verified GMPs, but should also consider whole farm management drivers such as optimising pasture production, and stock management on a whole farm basis. This would show farmers not only how to minimise their environmental impact, but also how to maintain or improve their economic performance.

Irrigation New Zealand: Farm plans are not a substitute for the important role of regulations which will always be needed to prevent, prohibit or manage certain activities or their effects. FEPs are an effective way to address farm-specific issues or risks that wider rules cannot capture. They encourage continuous improvement over time, and still allow for innovative solutions.

Issue 1: Mandatory freshwater farm plans

Part III of the draft NES proposes that all farmers and growers (above a minimum size threshold) must have an FW-FP. The discussion document notes the advisory groups support farm plans as a valuable tool for farmers, and invites feedback on different options for remaining voluntary or becoming mandatory.

There is strong support for the concept of FW-FPs among submitters. LGNZ states that in principle the regional sector strongly supports the notion that farms should have a farm plan that details the risks and committed responses. A Canterbury farm consultant refers to 'ground breaking' improvement in farm practices from implementation and auditing farm plans there.

However, views are mixed on whether such plans should be mandatory. Many submitters do not directly address the mandatory vs voluntary question. Most individuals who do are sheep and beef farmers.

Support

Submitters in support include: Irrigation New Zealand and allied irrigation schemes; Dairy New Zealand and Fonterra; Environment Canterbury, Southland Regional Council and Auckland Council; Federated Farmers, Horticulture New Zealand and New Zealand Kiwifruit Growers; Fertilizer New Zealand, AgFirst and Farm Right; New Zealand Conservation Authority; and Ellesmere Sustainable Agriculture Society and the NZFSS.

DairyNZ: Farm plans help to change farmers' mindsets about their land and water resources, and are the best way to deliver improvements in rivers quickly. The plans help farmers identify and target the biggest risks on their farm. Being involved helps them take ownership and responsibility for their plans.

New Zealand Conservation Authority notes it is a constructive and direct way individual farmers can work to achieve good management practices. Another submitter comments that farm plans are supported and essential. Some individuals prefer these plans over consents for managing high-risk activities.

Opposition

Submitters against include: Beef + Lamb New Zealand and a large number of sheep and beef farmers; Deer Industry New Zealand; Alliance Group; New Zealand Pork, Greater Wellington Regional Council and Taranaki Regional Council; and environmental NGOs including Greenpeace New Zealand, and the Environmental Defence Society.

Common comments:

- Costs and bureaucracy. This includes preparing and certifying plans, and auditing. A number consider the costs under-estimated and provide evidence to this effect (see Issue 5).
- It would be better to put money into actions to improve water quality.
- The ability for farmers, many of whom face high debt or other costly obligations, to fund farm plans; and the adverse impact on farmer wellbeing.
- Plans and auditing would place unfair costs on catchments that may not have a problem.

Beef + Lamb New Zealand: The approach is unsuited to sheep and beef farming systems and unlikely to deliver on environmental outcomes. Concerns include the associated costs; FW-FPs could grandfather emissions; very prescriptive requirements (eg, a farm in a catchment where sediment is an issue would have to dilute resources across all four contaminants rather than focus on erosion control and mitigation).

Others, particularly environmental groups, see the plans as replacing more specific standards or akin to farmers regulating themselves. Greenpeace New Zealand opposes using farm plans to reduce reliance on national regulations. They say the plans are essentially voluntary and won't bring about the necessary environmental improvements, arguing strong rules are needed. Forest & Bird believes that reliance on farm plans in place of a robust regulatory regime is inappropriate, especially where water is over-allocated and land use must change.

Forest & Bird: Farm plans will undermine the intentions on the NPS-FM and NES, and are not consistent with the RMA requirements for NESs. They would make farming a permitted activity even where water is degraded and significant change needed. Voluntary plans and other industry-led measures must be additional to strong mandatory rules, not instead of them.

A significant number felt that FW-FPs should instead be prioritised to a subset of farmers and growers.

Issue 2: Who must have a freshwater farm plan and by when

The NES proposes the following requirements for farm plans:

- **by 2025:** all farmers and growers (above 20 hectares or five hectares for horticulture enterprises)
- **by 2022:**⁹
 - farms on highly erodible land in the Kaipara catchment¹⁰
 - all farms used for commercial vegetable production.¹¹

Who must have a freshwater farm plan

Auckland Council suggests encouraging farm plans by smaller farming activities under 20 hectares, particularly in catchments dominated by intensive activities having a cumulative impact on water quality. These farming activities could have a longer timeframe.

Bay of Plenty Regional Council say that despite the capacity issue, the proposal could extend to farms below the size threshold, even if there is a longer timeframe.

A small number of individuals think the requirements should cover smaller holdings including lifestyle blocks; smaller holdings may be environmentally worse than bigger farms. A dry stock farmer suggests they apply to farms over 100 hectares, as smaller farms struggle to break even.

New Zealand Kiwifruit Growers does not support an exemption for kiwifruit orchards of five hectares and under, noting that orchard size does not determined adverse environmental effects. If the Government does not remove that exemption, the industry will likely apply the rules across all growers to align with best practice and promote sustainable practices.

Horticulture New Zealand notes there are some fruit and vegetable orchards (typically older) under 5 hectares but that, for the 2025 FW-FP timeframe, a five-hectare threshold is more realistic. NZ Avocado comments that over a longer period it would like the requirements to extend to all avocado orchards (average size currently 3 hectares).

⁹ Technically the requirement is two years from gazettal of the NES, which is expected to mean a 2022 timeframe.

¹⁰ In August 2019, the Government accounted the Kaipara Catchment as the first 'exemplar catchment'.

¹¹ The NES also proposes earlier FW-FP requirements for farms in catchments identified under the reducing excessive nitrogen losses policy, and for other high-risk land uses, as discussed elsewhere here.

Timeframes

The majority, including submissions from regional councils and sheep and beef sector, feel timeframes are too short and that implementation should be over a longer period. Fonterra and Horticulture New Zealand support the 2025 timeframe. DairyNZ supports moving quickly in catchments with water quality concerns, and explicitly supports the 2022 requirements.

The two main reasons for opposition are:

- a rushed process would result in poor quality plans
- questions about the capacity to deliver the plans. (For views on capacity see Issue 4.)

AgFirst recommends setting catchment limits before farm plans are due, noting that 2025 is the timeframe for councils to set limits. Table 6 lists suggestions for refining priorities and timeframes.

Table 6: Suggestions for timeframes and priorities

Suggestions for timeframes and priorities	
Extend time frame out	<ul style="list-style-type: none"> • Federated Farmers: to 2030 • Northland Regional Council: to 2030 • Beef + Lamb New Zealand: to 2030 • AgFirst: to 2035
Prioritise to particular catchments	<ul style="list-style-type: none"> • Federated Farmers and Beef + Lamb New Zealand: By 2022 for the 12 highest priority catchments; by 2025 for farms in priority catchments with water quality risk and vulnerability; and then 2030 for all other farms. • Irrigation New Zealand: Target at-risk catchments first, to get gains most quickly where most needed. • Irrigation companies: high-risk catchments 2025; medium-risk: 2027; low-risk: 2030.
Target particular farms in at risk catchments, with regional priorities.	Auckland Council: Timeframes would be more achievable with regional priorities in at-risk catchments, rather than basing farm plans purely on property size.
Regional councils prioritise with set targets	Greater Wellington Regional Council: set targets for regional councils, eg, engage 50% of farms in planning in three years; 30% to have approved and audited plans in five years. Priority areas need more scoping, by regional councils and their communities.
Use higher size or intensity thresholds	<ul style="list-style-type: none"> • A dry stock farmer suggests FW-FPs only for farms over 100 hectares, noting smaller farms struggle to break even. • A sheep and beef enterprise suggests targeting farms with over 15 stock units per hectare or those farms applying over 50 kilogram nitrogen per hectare annually, leaving simple low intensity properties alone.
Prioritise a mix of factors including geographical	Fertilizer New Zealand: work on a geographical basis as well as prioritising where action is needed to meet the environmental objectives. Government can also help by excluding farms under a certain threshold of size, revenue or impact.

Fonterra does not support exemptions for low-intensity operations because this not akin to low risk.

Suggestions for lesser requirements include reducing certification or auditing requirements for some. See Issue 4.

2022 timeframe

Northland Regional Council considers this completely unrealistic for farmers on highly erodible land in the Kaipara Catchment. They prefer 2025, noting that significant government assistance would be required. Kaipara District Council concurs that 2022 is unfeasible. Auckland Council supports the proposed priorities for the first tranche of FW-FPs but has serious concerns about capacity to achieve the timeframes. This risks poor quality plans, administrative bottle necks and data problems that may thwart the outcomes. Another submitter notes it is not clear why the Kaipara is singled out.

Horticulture New Zealand opposes the 2022 requirement for all commercial vegetable growers, on the basis that it is unachievable and unwarranted.

Issue 3: Minimum content

Clause 38 contains proposed content for all FW-FPs, including mapping, risk assessment and actions to address these.

Apart from the sheep and beef sector and the deer industry (who see the requirements as overly prescriptive) most generally support the content.

DairyNZ, Southland Regional Council and Ravensdown note the similarity to existing FW-FP provisions in regional plans. Other organisations supporting or generally supporting include Fonterra, Auckland Council, Ellesmere Sustainable Agriculture, Opua Water Limited, Bay of Plenty Regional Council, and Avocado NZ providing New Zealand Good Agricultural Practice (NZGAP) could be used to meet the requirements.

A small number raise the idea of simplified requirements for lower risk farms.

LGNZ and AgFirst say it is difficult to comment without more clarity on what is proposed.

Targeted contaminants

Beef + Lamb New Zealand considers the content requirements overly prescriptive, seeing the need for information on all potential emissions from the farming system. These would likely involve Overseer and other tools for all FW-FPs.¹² Many other sheep and beef farmers share these concerns.

LGNZ say it would help to clarify which contaminants should be risk assessed. Nitrogen, phosphorus, sediment and pathogens should be the minimum, with regional councils able to add others. DairyNZ also suggests considering all four contaminants.

Most strongly support a tailored approach, focusing on the prime contaminants. Auckland Council suggests focusing risk assessment on a limited number of contaminants as prioritised by regional councils.

Northland Regional Council and other submitters stress the need to tailor farm plans to water quality in the catchment.

¹² Subclause 38(5) may have contributed to the requirements appearing overly prescriptive. As set out in clause 38(1)(j), subclause 38(5) is intended to apply only to farm plans for high N catchments (see excessive nitrogen leaching policy section 29), but the NES drafting made this difficult to see.

Nutrient budgets

The minimum content does not stipulate an Overseer nutrient budget or management plan. And there was some concern that such a requirement would not be a good use of limited funds. These might be better spent on erosion control in catchments where sediment was the major contributor to poor water quality.

A small number call for an Overseer requirement for all farm plans. Fish & Game New Zealand recommends a nutrient management plan, as does the Mid-Aparima Catchment Group.

Fertilizer New Zealand notes the importance of nutrient budgets to better understand nutrient loss, and so farmers can understand the local impact of their practices. Overseer NZ notes that theirs is the only tool that enables farm-specific estimates of nutrient losses relative to management practice, and therefore should be a key input into farm planning.

Link to ecosystem health

The FW-FP NES risk assessment requirements refer to risks of contaminant losses from the farm, with 'consequent impacts on freshwater ecosystem health'. Auckland Council and Northland Regional Council suggest tailoring risk assessments to the contaminant load lost by the farm, rather than the effects on in-stream ecosystem health. They note the latter requires farm planners to have advanced technical knowledge to understand and predict change to in-stream effects. The NZ Institute of Primary Industry Management has similar concerns.

Waikato Regional Council: The requirement is unrealistic. It will either mean significant expenditure on a professional ecological assessment, or be a generic and potentially meaningless assessment. It is inappropriate given the general view that it is not possible to link practice and action at a farm scale to local water quality and ecosystem impacts.

Suggestions that such skills should be explicitly required for certification as farm planner or auditor were raised by at least one submitter (see Issue 4).

The New Zealand Institute of Primary Industry Management (NZIPIM) recommends setting competencies for freshwater farm planners in freshwater ecosystem health. Farm planners will then know what is expected and where they need to develop their knowledge base.

Mātauranga Māori and cultural values

Several submitters say the content must include reference to mātauranga Māori or provide for cultural values. Ngāti Rangiwewehi notes FW-FPs should incorporate assessment of mātauranga Māori to ensure tangata whenua values are integrated from land to water; and that this would require mātauranga Māori practitioners and auditing. Ngā Waihua o Paerangi Trust suggest including reference to mahinga kai.

Other suggestions for content

Beef + Lamb New Zealand:

- require a stocktake of each farm's natural resources, and a strength and weakness assessment of each land management unit against environmental risks

- delete the requirement about stock management, exclusion and setbacks. The main environmental issue for extensive land use is overland flow of pathogens to surface waterbodies rather than stock access to water.

A few comment on the reference (in risk assessment) to the Hazardous Activities and Industries List. Waikato Regional Council supports identifying all such sites. They comment that the current understanding of site locations and the risks they pose is such that simple identification and a coarse risk assessment is appropriate for first-generation farm plans.

DairyNZ seeks clarity on the inconsistency in the terms 'best practicable option' and 'avoid remedy and mitigate' in the content clause, compared to 'good farming practices' in the auditing clause.

Waikato Regional Council suggests a requirement to prepare farm plans in line with the Good Farming Practice Action Plan principles (referred to in the FW-FP auditing requirement).

Horticulture New Zealand suggests including commercial vegetable production crop rotation type (market garden; intensive or extensive).

A suggestion that biodiversity requirements be included is made by a small number of submitters including the New Zealand Conservation Authority (NZCA), and ECO who suggested referring to the related issue of management of aquatic invasive species. One submitter explicitly comments that risks to threatened plant and bird life should not be included, because it has quite a separate focus and should be at national level.

A small number suggest that the FW-FPs should also address greenhouse gas risks and mitigations.

Issue 4: Certification and auditing

The NES proposes that FW-FPs would require approval by a certified farm planner against the requirements in the NES, and independent auditing by an approved auditor every two-to-three years.

Certification

General views

Supporters view certification as important for ensuring plans are of a good standard. The shortage of qualified farm planners was a factor behind some suggestions for either voluntary certification, or targeting a smaller group of farmers based on some form of risk assessment (see table 7).

Stronger opposition to mandatory certification is underpinned by the view that an external individual would be preparing the farm plan, thereby undermining the important factor of farmer ownership of their plans. The cost to farmers is a significant concern. Others suggest using independent audits to pick up where FW-FPs are not up to scratch, without having to rely on a certification programme.

Table 7: Submitter views on certification

Views on certification	
Support certification of all FW-FPs	<ul style="list-style-type: none"> • Fonterra supports certification for all farm plans to ensure they are of a consistent standard with clear time-bound actions against minimum standards and Good Farming Principles. • Fertilizer New Zealand: the scope and quality of plans is critical to their success. • Environment Canterbury also favours certification.
Support certification for some FW-FPs	<p>Federated Farmers: Supports farm plans. Has concerns about the need to certify and audit all FW-FPs within the timeframes. Where there are no real issues with water quality, low impact and extensive farms should be able to complete plans without the cost of an independent certified planner. Catchment group workshops could assist in the interim. Regional councils could 'call in' farm plans in some circumstances.</p> <p>New Zealand Pork: Exempt lower risk farmers (as determined by the regional council) from certification and auditing, as in Canterbury now.</p> <p>Ellesmere Sustainable Agriculture: Only require certification where a consent is not required.</p>
Support voluntary certification	<p>Horticulture New Zealand: Sees a role for professionals supporting growers but does not support mandatory certification. Favours developing the capacity of growers to make their own FW-FPs, and holding them to account via an independent audit.</p> <p>Kiwifruit Vine Health favours voluntary certification.</p> <p>The New Zealand Deer Farmers Association: The best approach for progress and buy-in is if farmers are left to seek professional advice and direction where needed.</p> <p>Irrigation New Zealand: The current capacity and capability issues could lead to a shortage of certified advisors, given that an auditor should not be able to audit a plan they prepared.</p> <p>MHV Irrigation: The qualifications and experience requirements will severely limit the pool of people available to complete this work, and increase the time to train new people and reduce the engagement of farmers.</p> <p>Opuia Water: Prefers a framework where farmers, with support from their industry, can draft their own plan. The quality is checked through the audit process. Farmers have more buy-in when they have written plans themselves or have been closely involved in drafting.</p>

Beef + Lamb New Zealand and the sheep and beef sector strongly oppose certification. A submitter notes that a farmer could be forced to follow a plan, made by others, that they do not believe to be correct. Others object to being told what to do by a new graduate with no practical experience.

Many who oppose note the importance of farmers being able to prepare their own plan; farm plans being farmer owned; and farm plans being a living document.

A sheep and beef farmer comments that they were capable of preparing and implementing their own plan, and that while they respect the need for external assessment and verification, having to pay people to prepare their plan and audit it is 'unsupportable'.

Forest & Bird is concerned that the proposal would devolve responsibility for ensuring that land is appropriately managed to external certifiers and auditors. They note this is a core regional council function that should not be passed to consultants.

Criteria for certifying farm plans and farm planners

The NES states that an FW-FP may only be certified by a farm environment planner approved by the Minister for the Environment and the Minister of Agriculture. A person may not be approved unless they have at least three years' experience in managing pastoral, horticulture or arable farm systems; successful completion of relevant training or qualification; and approved completion of requirements of the certification scheme approved by the above Ministers.

A few submitters suggest Ministers approve only the certification scheme, not the individual farm planners. Hawkes Bay Regional Council considers approval of providers by two Ministers unnecessarily complex. Fertilizer New Zealand considers it unnecessary for the Minister to approve advisor or auditors, saying it makes more sense to approve only the certification scheme itself.

Hawkes Bay Regional Council supports national minimum requirements for certification that could be signed off by the two Ministers. They recommend a local approval process to ensure local relationships can be developed and local issues properly accounted for. Bay of Plenty Regional Council suggests that regional councils should be able to approve practitioners and FW-FPs in their regions, and that duplication should be avoided.

LGNZ seeks more clarity on criteria for certifying FW-FP planners and auditors. It asks how the three years' experience in pastoral, horticultural or arable farm systems would be assessed and wants to make sure that training programmes and assessments cover regional priorities.

A submitter comments that the scheme must include certification for those already working in the industry and in or alongside bodies and commercial organisations, and who can demonstrate practical experience. A couple of submitters refer to knowledge of farm systems as highly desirable. One comments that freshly graduated people with no practical experience would be totally unsatisfactory.

NZFSS recommends including environmental management experience to ensure planners have the right skills to achieve the outcomes. (Concern about this requirement was raised under the proposed FW-FP content.)

NZIPIIM is concerned that the certification requirements could be interpreted as the approved planner certifying the farm plans on the certification scheme's behalf.

Ballance Agri-Nutrients recommends using the existing Nutrient Manager Adviser Certification programme as the national standard for farm plan assessors. Another submitter calls for more information on how this scheme would align with the proposed FW-FP certification.

Reference to Good Farming Practice Principles

The requirements for certifying FW-FPs include that the plan aligns with the Good Farming Principles set out in *Good Farming Practice: Action Plan for Water Quality*.¹³ Table 8 lists comments about the Good Farming Principles.

¹³ This voluntary action plan was agreed by leaders from industry, regional council and central government. Its purpose is to accelerate the uptake of good farming practices for improving water quality, to measure and demonstrate this uptake, to assess the impact and benefit of those practices, and to communicate progress to the wider public.

Table 8: Comments about the Good Farming Principles

Comments about the Good Farming Principles
Fish & Game New Zealand: Delete reference to the principles because they are at too high a level to be useful to individual farmers and not linked to catchment outcomes.
Forest & Bird: The principles are a good start but not sufficiently directive or certain to be a standard against which to assess farm plans. All stakeholders should determine principles of good farming practice, which should be included in the National Environmental Statement.
Beef + Lamb New Zealand opposes: <ul style="list-style-type: none">• reference to the Good Farming Practice Action Plan, because it was not developed for regulation• inclusion in regulation in a way that is prescriptive and reduces innovation and on-farm adaptation.

Transition – clarifying the status of existing farm plans

Many question the status of existing farm plans, and how they would be treated under the new regime. There is a concern that the proposals would require those with farm plans to redo them from scratch rather than being built on, with additional costs.

LGNZ is one of a number of submitters raising concerns about early adopters of farm plans not being rewarded and at risk of being disadvantaged, having to pay for another, presumably duplicative farm plan. FarmRight states it is imperative to leverage off farm plan work already done.

DairyNZ seeks assurance that existing certified plans will not need to be immediately reproduced. They recommend allowing farm and nutrient plans obtained under regional plans to be updated either by 2025 or when due for review under regional council rules.

Bay of Plenty Regional Council suggests clarifying relationships with regional plan requirements and setting a transition period for those farmers/growers with environmental plans (or at least those required by regional plans) in recognition of the costs to date and not penalising those who have acted. A few suggest exempting Canterbury farmers because of the FW-FP provisions already in place there.

Use of industry schemes

Beef + Lamb New Zealand suggests that the Government support industry-led farm assurance schemes. They submit that if mandatory FW-FPs are retained, industry quality assurance programmes such as NZFAP (New Zealand Farm Assurance Programme) or Beef + Lamb New Zealand's Land and Environment Plans are adopted. Many sheep and beef farmers endorse this view.

Horticulture New Zealand and New Zealand Kiwifruit Growers propose using existing good agricultural practice programmes to meet the requirements. Horticulture New Zealand notes that the NZGAP Environmental Monitoring Standards add-on has already been accepted by Environment Canterbury as a pathway to show compliance for independently audited farm plans. New Zealand Kiwifruit Growers notes it is reviewing how Zespri GAP can incorporate farm plan requirements. Horticulture New Zealand notes plans under NZGAP will need updating to include any extra requirements in the NES that are not already addressed. New Zealand Wine Growers suggests its Sustainable Winegrowing New Zealand programme can and should deliver all the outcomes for the proposed FW-FP requirements, including all the auditing and reporting obligations on behalf of individual growers.

The FLG and Fish & Game Wellington are concerned about the risk of a 'black box' effect with industry schemes, if transparency for the public is restricted due to commercial sensitivity. Another submitter raises concern about the robustness of NZGAP audits.

Auditing and requirements for auditors

The draft NES requires every person responsible for implementing a certified FW-FP to have their compliance audited by an approved auditor (who must not be the same person who certified the FW-FP). The audit must be completed within 24 months of the first certification and thereafter every two years unless the auditor is satisfied the farm's environmental performance means the next audit can be three yearly. Qualifications are same as those for freshwater farm planners, plus membership of an ISO accredited audit programme or other audit scheme recognised by Minister of Agriculture and the Minister for the Environment.

Mandatory auditing

Fonterra and Fertilizer New Zealand support auditing of all FW-FPs. Opuia Water suggests basing the auditing requirement on risks associated with the practices on the property (whether there is dairy, winter grazing, irrigation and so on) and thresholds for these determined on a regional basis. Another submitter suggests restricting auditing to random events in high-risk areas. Horticulture New Zealand supports the requirements if industry audits are recognised. Most of those opposed to mandatory auditing are sheep and beef farmers.

Auditor skills

Fish & Game New Zealand comments that farm environment plans are environment plans: the auditors and planners should have, or at very least allow, those with environmental management and ecology experience. Bay of Plenty Regional Council calls for auditors to demonstrate skills and experience in environmental management, particularly freshwater and ecology experience.

Auditing process

Horticulture New Zealand notes an auditor should not help growers develop their plans and must be independent to be credible. They suggest the first audit should:

- focus on reviewing content and implementation
- highlight where further improvements are required
- review the grower's risk assessments and decide whether actions and timeframes will be effective.

Capacity for certifying and auditing

A large number raise concerns about delivering the required number of certified plans and audits in the timeframe. LGNZ does not believe current resourcing in the primary sector and regional councils could deliver the required number of FW-FPs on time. They note the importance of building relationships for effectiveness and rate of delivery. DairyNZ notes these challenges put at risk the quality of plans, and therefore the effectiveness of the policy. Waikato Regional Council notes that an unintended consequence of a smaller pool of qualified

advisors and short timeframe is generic or poor-quality plans. This would reduce practice change and improvements to freshwater.

The New Zealand Institute of Primary Industry Management estimates 200 full-time approved freshwater farm planners would be needed over the next two-to-five years. It estimates 40 full-time environmental planners are currently involved in developing farm plans. It notes that ensuring that planners and auditors have a strong knowledge of farm systems and on-farm environmental strategies will be critically important for the successful roll-out and monitoring of FW-FPs. Another submitter fears freshly graduated students would have no idea about farming and the local environment, and a few others express similar concerns. Table 9 outlines submitters suggestions to help with planner and auditor availability.

Table 9: Helping with planner and auditor availability

Suggestions to help with planner and auditor availability	
Government focus on building up capacity quickly	DairyNZ: The Government could consider options to expedite the certification process and encourage skilled people to gain certification (for the high-risk catchments in particular).
Phasing in requirements and providing a sustainable career pathway	Fertilizer New Zealand: Phase the requirement to better spread demand across the whole period. Consider geographical demand alongside environmental impacts when phasing. The total costs (including opportunity costs) can be as high as \$30,000. Advisors will only be motivated to get certification if they can earn a return on this investment with a consistent, stable career path.
Random audits	AgFirst: Supports independent third party audits. A more realistic approach is random audits covering all farms over five years. Compliant farms: (say) five yearly. Non-compliant farms: yearly. Another submitter: Assist farmers to prepare their own plans. Plans to be lodged with the council, who would audit a percentage each year.
Targeted audits	Target audits to higher-risk enterprises. A farm consultant suggests excluding small or low-risk farms. Another submitter suggests targeting risk catchments (and also using random audits).
Different auditing timeframes	Bay of Plenty Regional Council: The first audit should ideally be annual. The auditor should then set the next period (between six months and four years) based on farmer performance. Farm Right: A first audit within three years, and follow-up audits up to five years later.
Rely on auditing to remedy poor plans/don't require both certification and auditing	Don't require certification given the capacity constraints and costs. Instead use the audit stage to pick up poor quality plans and require improvement. One submitter said the plans should either be signed off by a specialist or audited, but not both.
Different certification timeframes	A Canterbury farmer suggests that farmers with existing farm plans have until 2030 to get their plans audited. Exempt Canterbury farmers and recognise existing farm plans required by other regional councils, in some way.
Certify council or industry staff as farm planners	Enable council and industry staff to be certified freshwater farm planners.
Remove requirement for all auditors to be ISO certified	Waikato Regional Council: This requirement forms another barrier to entry into an already constrained industry.

Compliance monitoring and enforcement

Submissions raised a range of compliance, monitoring and enforcement issues, including those in table 10.

Table 10: Compliance, monitoring and enforcement issues

Compliance, monitoring and enforcement issues	
Enforcement when FW-FP not linked to a consent	<p>LGNZ: Welcomes legal advice on how technical standards work and may be enforced in practice. The FW-FP requirement is not linked to consent status but appears to sit as an independent regulatory requirement.</p> <p>West Coast Regional Council: Make FW-FPs a regulatory tool that can be enforced.</p>
Consequences of failed audit	<p>Fertilizer New Zealand: Explain the consequences of a failed audit.</p> <p>LGNZ, Environment Canterbury, NZIPIM also raise this issue.</p> <p>Another submitter questions what would happen if there was a dispute about the audit result.</p>
Role of regional councils	<p>LGNZ: The role of regional councils is unclear. There doesn't appear to be an obligation to:</p> <ul style="list-style-type: none"> act on the audit result, unless the FW-FP is a condition for a resource consent comply with the FW-FP unless linked to subparts 2 and 4 of the NES. <p>The purpose of councils receiving audit results is unclear. Also whether councils need to invest in data systems to store, retrieve and report on what could be a very large amount of information.</p>
Registration of farms	<p>Waikato Regional Council: The NES should require mandatory registration of farms to ensure councils obtain a full inventory of the farming activities in its region (or priority catchments). This would ensure the rules and regulations are implemented.</p>
Complying with FW-FP	<p>Fish & Game New Zealand: The NES should require farmers to comply with the FW-FP.</p> <p>Waikato Regional Council: Also suggests this. In its absence, it would be more effective for regional plans to mandate farm plans, where they can be monitored and enforced.</p>
Identifying actions and time frames	<p>Fertilizer New Zealand: The Government needs to think about the rules for determining farm plan actions and their timeframes. Allow some flexibility as farms and catchments vary. Without some guidance, action could be too slow.</p> <p>Fish & Game New Zealand: A 2050 deadline for actions to align, with the NPS-FM water quality improvement goal in their submission.</p>
Updating plans	<p>A few suggest timeframes for updating plans.</p> <p>Fertilizer New Zealand: A five-year life for farm plans unless there is an earlier significant farm system change. NZIPIM: The NES should identify the timeframe in which an FW-FP remains in effect. Many comment that farm plans are living documents that should be regularly updated.</p>
Notification requirements	<p>Require farmers and growers to lodge all farm plans, rather than the NES allowing councils to request plans.</p> <p>Bay of Plenty Regional Council: Provide the council with copies of the farm plan and audit report (not just the result). Waikato Regional Council and Forest & Bird shared the same view.</p> <p>NZIPIM: Clarify the conditions where regional councils may, or may not, require plans.</p>
Compliance costs proportional to environmental effect	<p>Sheep and beef farmers: Make the costs of compliance or the level of on-farm actions proportional to the environmental impact on freshwater health.</p>
Responsibility between farmer and certified advisor; auditing details	<p>Fertilizer New Zealand:</p> <ul style="list-style-type: none"> The farmer should be responsible for the quality of the data, and the certified advisor for ensuring the actions comply, based on the farmer's information. Clarify whether auditing will assess the information to draw up the plan, and the similarity between this and the farm's actual data or actions.

Issue 5: Impacts

This section notes some of the comments about potential impacts of the FW-FP proposals.

Costs

A number of submitters, including LGNZ and a large agricultural consultancy firm, say the farm plan costs are underestimated, and give evidence to this effect. Table 11 sets out comments about the costs.

Table 11: Costs and capability issues

Costs and capability issues	
Cost of preparing FW-FPs	<p>AgFirst: Realistic figures are an average cost of \$5000 for dairy and \$8500 for sheep and beef.</p> <p>Bay of Plenty Regional Council: \$3500 is about right. Most farms already have some plan.</p> <p>Industry bodies and councils can offer templates and guidance. Estimates \$5000–\$7000 to develop a plan from scratch.</p>
Information on delivered plans	<p>Fonterra has delivered and supported over 1500 FEPs in the past two years. They refer to 5311 dairy farms having farm environment plans, with 4356 a Fonterra farm plan.</p> <p>DairyNZ: About 1700 Sustainable Milk Plans completed in 8 catchments between 2011–2018. In 2012 DairyNZ and Waikato River Authority co-funded 642 plans in the Upper Waikato and in 2015 a similar programme in Waipa for 285 dairy farms.</p> <p>Taranaki Regional Council: 99% of farms in the region have a riparian management plan; 67% of hill country farms have a comprehensive LUC based farm plan (82% in erosion risk areas).</p>
Auditing	<p>AgFirst: Recently completed a study on cost of N Cap for Taupō farmers. Annual average cost of monitoring and auditing was \$3900 per farm.</p> <p>Hawkes Bay Regional Council: Audits cost \$2400 and are done in-house.</p>
Number of planners and auditors	<p>DairyNZ: See Waikato Plan Change evidence where NZIPIM notes potentially severe shortages.</p> <p>Ballance Agri-Nutrients: also discusses this.</p> <p>Waikato Regional Council: Need at least 50 auditors from 2022 for about 5540 Plan Change One and NES audits, 2023–2024.</p> <p>NZIPIM: Need about 200 full-time approved FW-farm planners over the next two-to-five years; 40 full-time environmental planners are now developing farm plans. Need about 120 auditors (assuming each audit takes two days, across 14,000 farms per year). But likely higher than 320, as many will not want to become full-time planners or auditors.</p> <p>Bay of Plenty Regional Council: Based on Plan Change 10 experience (Lake Rotorua), farm planner could deliver about 40 farm plans per year, if that was their sole focus.</p> <p>AgFirst: Yearly or biennial audits are totally unrealistic. An auditor could do four audits per week. This would require 159 auditors full time nationally (or 212 at three audits per week).</p>
Costs of FW-FP system	<p>Bay of Plenty Regional Council: Estimates the cost of farm plans (including developing, auditing and GMP implementation) to be a 5% reduction in annual operating profit across all affected land uses in the region, from \$734 million to \$726 million. Biggest impact: drystock farmers (18% drop in overall operating profit, from 8–24% for different farm systems. Least impact: kiwifruit growers (4% overall drop, 2% for gold, 8% for green). Dairy farming: 5% overall drop (from almost zero to 18% reduction for less intensive systems).</p>
Balance costs and timing	<p>Balance: A typical farm plan can take 20–40 hours. The estimated cost in Action for healthy waterways is significantly lower than many farmers will face. Waikato Regional Council Plan Change One affected 5000 farms and to obtain only Nitrogen Reference Points (NRPs) for each, within the timeframes, would take 50,000 hours for over 62 full-time approved certifiers. At this time about 30 qualified approvers were registered, but only about half were full-time although the FW-FP timeframes are longer, the number of farms and their geographical spread is much greater. The current timeframes are not achievable. Another time constraint is determining a farm plan assessor certification scheme and ensure enough assessors complete it.</p>

Te Tumu Paeroa comments that the cost of audits and proposals could push their tenants out of the market, lowering the rentals they can collect.

Evidence of benefits

A number of submissions cite environmental benefits from farm planning – see examples in table 12.

Table 12: Environmental benefits from farm planning

DairyNZ: Refers to a recent survey by Aparima Community Environment project (Research First, 2019) investigating the correlation between farm plans and active management of environment risk. Those with farm environment plans were more likely to use good practices. Through Waikato Plan Change One, plans implemented over 10 years met or exceeded the targets. The upper Waikato project modelled nitrogen and phosphorus loss of about 8% and 12% if fully implemented.
Fertiliser Association of New Zealand: Lincoln University Dairy Farm and Owl Farm have reduced their nitrogen loss by about 25% while maintaining or increasing profit, by looking at their whole farm system.
Bay of Plenty Regional Council: Expects significant benefits from farm plans including tailored migration practices, and also some better farm financial performance. Plans will generate important baseline information on contaminant losses and farming practices. The costs of developing plans by 2025 and auditing them, are generally not major, relative to baseline operating profits of affected land uses and expected benefits (although this will vary for individuals). The main costs will be in taking action. These can be spread over a longer timeframe.
Irrigation New Zealand and irrigation companies: <ul style="list-style-type: none">• Barhill Chertsy Irrigation Scheme: provides graphs showing improved irrigation practices (bucket testing; irrigation scheduling and irrigation training) and better audit grades (INZ submission).• Mayfield Hinds Irrigation: provides numbers showing better second-round audit grades, and strong shareholder motivation to improve grades.

Issue 6: Implementation support

Below are some of the ideas for supporting the implementation of farm plans.

Beef + Lamb New Zealand: Funding, training and support structure will need to be established to ensure New Zealand is building the capability for farmers to build robust whole farm plans that deliver value across the farming business, and environmental outcomes. New Zealand must re-establish expertise in soil conservation, integrated catchment management and farm systems.

A catchment group opposing auditing and certification suggests allocating the available farm planners to catchment groups to upskill and empower farmers to prepare much of their own plans.

Funding

- Farmers and growers receive 10 hours of free advice from a certified farm planner (Fertilizer New Zealand).
- Tax relief, and subsidies for farm environment plans and auditing.
- Financial or other incentives for land retirement into native vegetation.
- Smaller enterprises receive more government assistance as the costs of prepare a FW-FP and have it audited would be proportionally higher relative to farm profit or turnover (eg, 50–100 per cent subsidy to have FW-FPs prepared and certified).

Others comment more about principles for any funding decisions:

- Fonterra: Focus any government money on systems and processes to administer, certify and audit effective farm plans.
- Use incentives: By 2025 the Government somehow rewards those people with a plan.
- Give farmers who have already made a significant effort some kind of financial assistance for further audits.

An individual submitter feels farmers should face the costs. 'The costs of preparing, certifying and auditing farm plans are a cost of business for the farmers. They access our resources for free and externalise their costs onto society. They must bear the true costs of their activities. These costs will obviously be handed on to the consumer and the government can choose whether or not they wish to subsidise the cost of farm products when they are on the shelf. If farmers can't afford the costs of doing business, they shouldn't be in business just like everyone else.'

NZIPIM calls for efforts to quickly build farmers' and growers' competency and knowledge base, to identify good practices and mitigate risk. This could include professional development programmes, subsidising the cost and an individual's time in attending nutrient management and other courses, and working with existing consultancy firms in the market in building capacity.

Several believe catchment groups could play an important role in helping support farmers, and that such groups needed more support, eg, providing skilled facilitators.

Other suggestions relate to data management. See table 13 for some that are specific to farm plans.

Table 13: Suggestions for implementation support

Suggestions for implementation support	
FW-FP templates and data standards and storage	<p>LGNZ: Delivery will require efficient processes in regional councils and industry. Absence of this risks incompatible and meaningless information from many FW-FP templates using inconsistent definitions and resolutions of information. A standard template is critical and should be software based, producing geospatial datasets of farm features and action schedules to drive standardised reporting.</p> <p>Waikato Regional Council: It would assist councils if central government could specify a standard FW-FP template for advisors and councils.</p> <p>Auckland Council: Use a centralised repository and/or database to hold farm plan data nationally.</p> <p>DairyNZ is among a number of other submitters who also recommend templates.</p>
Access to data	<p>Fertilizer New Zealand: One of the cheapest ways the Government can support a low environmental footprint, but highly profitable primary industry is by improving access to data. By sharing non-sensitive data in a consistent format, they can encourage researchers and agritech companies to develop precision agriculture solutions on New Zealand farms.</p> <p>A farm consultant (#1804) calls for a change in pricing for datasets like S-map and Light Detection and Ranging (LiDAR), so small companies can use this data efficiently in their geographic information system (GIS) systems.</p>

Stock exclusion

Background

Keeping livestock out of waterbodies is a clear and direct way to protect freshwater from the adverse effects of animal agriculture. Excluding stock reduces erosion and destruction of habitat through trampling, as well as faecal contamination and its associated risks to human health. Setbacks and buffer zones can build on these benefits by maintaining habitat and shading, and by capturing contaminants carried by overland flows. Despite good progress on voluntary fencing of streams across dairy farms in recent years (about 36,000 km), there remain many tens of thousands of kilometres of unfenced streams across New Zealand.

Proposal

We propose to exclude dairy and beef cattle, deer and pigs from lakes, rivers (greater or equal to one metre wide) and wetlands through national regulation. Exclusion requirements would be phased in over a number of years, varying by waterbody and stock type.

Overview

Over 13,000 submitters commented on the stock exclusion proposals. Of these:

- 1700 were unique submissions from organisations and individuals
- 5093 pro-forma submissions prepared by Forest & Bird
- 3454 pro-forma submissions prepared by Greenpeace New Zealand
- 1407 pro-forma submissions prepared by Fish & Game New Zealand
- 499 pro-forma submissions prepared by DairyNZ
- 972 pro-forma submissions prepared by Beef + Lamb New Zealand.

The pro-forma submissions from Beef + Lamb New Zealand, DairyNZ and Federated Farmers support some aspects of the proposals but seek significant changes, mainly in allowing existing fences to remain, and decreasing or removing the minimum setback. The Forest & Bird and Fish & Game New Zealand submissions ask for all streams to be included, with Forest & Bird also wanting wider planted setbacks. Greenpeace New Zealand asked for 'strengthened stock exclusion rules'.

Nearly 1400 unique submitters identify as farmers. They oppose some, most or all, aspects of the proposals. Common reasons are the high costs of fencing, particularly in the hill country; the lack of flexibility; that they had already taken action to protect the environment; and questioning the need to exclude stock from rivers where they had not degraded water quality.

There are mixed views from the 23 district councils who submitted. Many support national regulation of stock access to waterbodies. Some oppose aspects of the proposal, particularly setback distances and requiring farmers to move existing riparian fences.

Fourteen regional councils (including unitary authorities) comment. All are concerned about requirements for the early adopters of riparian protection, and many are concerned about the

difficulty in enforcing requirements. These requirements included average setbacks and stockcrossing frequency, recovering money for compliance visits, and charging enforcement fees. Two want some regional flexibility in the requirements for wetlands. Four want recognition of their regional rules because they have been developed through significant consultation in their communities. Taranaki Regional Council says the proposed regulations would conflict with its successful Riparian Management Programme, where 87 per cent of dairy streams are fenced and 75 per cent have riparian vegetation.

Themes

Moving existing fences to comply with setbacks

By and large, submitters from all stakeholder groups oppose the requirement to move fences where they already provide adequate setbacks, particularly if they are planted. Councils are concerned about enforcement challenges. Primary sector groups are concerned about the cost and difficulty of re-fencing, and the frustration for stock owners who have already invested in fences and riparian plants (see photos 1 and 2 below). Some farmers, community groups, environmental NGOs and iwi-affiliated organisations say it would punish early adopters of environmental stewardship and waste money better spent on other on-farm mitigations.

Some note that fences not meeting the required setbacks should only be replaced at the end of the serviceable life of the fence, or be allowed to remain, particularly if there are no adverse effects.

Others support requirements to move existing fences with minimal setbacks (sometimes described as under one metre).



Left: Waingongoro Catchment, South Taranaki (submitted by the Waingongoro Catchment Group to show effective stock exclusion and riparian work with one- to three-metre buffers). Right: Waimanu Farm stream, Canterbury (submitted by MHV Water, Ashburton showing the effectiveness of a two-metre planted setback).

Size, purpose and enforceability of setbacks

There is mixed support for, and opposition to, setbacks in general, and a five-metre setback in particular.

Many question the effectiveness of a five-metre buffer in mitigating the effects of stock and pastoral farming. Some are concerned about how to access streams and drains for river

works and clearing weeds, and measure the proposed 'average' setback width (DairyNZ form submitters suggest including the total buffers on the farm).

Iwi- and Māori-affiliated organisations generally support setbacks. Some comment the five-metre buffer may be too short or too long, depending on the environment. Others recommended planting buffers, including small streams and drains, and that stock exclusion is only part of the solution to improving water quality.

Primary sector groups, except forestry, and the form submissions from Beef + Lamb New Zealand, say five-metre setbacks are not necessary and prefer: no stipulated setbacks, one metre (Federated Farmers), three metres (DairyNZ), or a risk-based approach. All are concerned that five metres would remove considerable productive land without demonstrable benefits to ecosystem health (the Taranaki programme and the Canterbury Waterway Rehabilitation Experiment were cited by multiple submitters as effective examples of riparian buffers).

CRIs, environmental NGOs and others support larger, vegetated setbacks, either through FEPs or the regulation, especially where these contribute to biodiversity, or the waterbody has high freshwater values.

Community groups ask for wider buffer zones on steeper land, or for risk-based buffers. Some want it to be a minimum buffer, not averaged across the farm.

District councils have mixed views. Canterbury and Wairarapa councils say that two- to three-metre setbacks are proven as sufficient, and others (Western Bay of Plenty and Waipa), supported a minimum five metres.

Regional councils believe their rules provide more appropriate buffers and sometimes require appropriate vegetation as well. One notes calculating the average setback was unnecessarily complicated.

Very few mention where the setback should be measured from: they suggest the active bed (DairyNZ), the outer edge of the bed (Southland Fish & Game), bank full (Bay of Plenty Regional Council), and top of the bank (Environment Southland).

Those opposed to a national setback rule often prefer the use of farm plans, especially for setback buffers (eg, LGNZ, New Zealand Conservation Authority, Landcare Research), with criteria set out in guidance.

Low-slope thresholds

Primary sector groups have conflicting views on the low-slope threshold: DairyNZ supports defining low-slope land as up to 15 degrees. New Zealand Deer Farmers' Association, Federated Farmers, Beef + Lamb New Zealand and their form submission, and some other primary sector groups, support the five-degree threshold.

Environmental NGOs and Bay of Plenty Regional Council support the higher-slope thresholds.

Submitters comment the low-slope mapping shows many areas of flats that are not mapped, while some rolling hill country is mapped, and that land designated as low slope can have steep slopes. Some feel all slopes should consider stocking intensity, because low intensity stocking rates do not have the environmental effects of higher intensity rates.

Greater Wellington notes the mapping methodology produced some illogical boundaries, and that other datasets, such as the Land Resource Inventory, could be more appropriate. Marlborough District Council says the methodology would result in patchy fencing in river valleys, with questionable protection of waterbodies, and apply unfairly to the stock owners. LGNZ (whose submission was supported by many councils) asks for mapped stock-exclusion layers to be identified nationally using Light Detection and Ranging (LiDAR) data or other technology that can be more accurate.

Land that should be covered if it is not low-slope (hill country)

There is widespread misunderstanding of the meaning of 'carrying capacity'. Many interpret it as actual stocking rates. They, therefore, oppose the rule because it would apply to all rotational stocking in hill country.

Those who understand the intent of carrying capacity unanimously feel it is inappropriate. Some ask to replace it with actual stocking rates or a land-use, capability-based delineation of areas.

Many farmers and community groups prefer using voluntary farm plans on extensively farmed hill country. Some councils and NGOs prefer mandatory farm plans for those farms. This is because other approaches to managing environmental effects in the farmed hill country were more effective (including replacing willows beside the river with appropriate species, erosion-control planting on the hills and targeting critical source areas).

Waterbodies covered by the regulations

Primary sector groups and many others, including Kahui Wai Māori, support requirements for rivers less than one metre wide managed in farm plans.

Some submitters (LGNZ and farmers) suggest a minimum size such as 0.1 or 0.5 hectares for wetlands, and question how wetland seeps beside waterbodies were treated.

Community groups, environmental NGOs and some councils seek more protection for smaller streams, especially in intensively farmed areas, because of the contaminant contribution smaller, unfenced streams make to larger waterbodies downstream. Other areas mentioned as requiring stock exclusion were: spawning areas, waterbodies with high water quality, critical source areas (including drains), spring-head wetlands, and highly erodible stream banks.

Numerous primary sector organisations and businesses, LGNZ and Otago Fish & Game note seasonal grazing of some wetlands may benefit specific ecosystems. The Environmental and Conservation Organisations of Aotearoa New Zealand (ECO) suggests the wetland plants that grow after cattle are excluded become a natural barrier along a 'light' fence line.

Beef + Lamb New Zealand, Westland Milk and some others want the regulation to apply only to rivers that are permanently flowing, or to specifically exclude ephemeral streams.

Some ask for a methodology to measure river width. Suggestions include the edge of the water (Mid-Aparima Catchment Group), the 'active bed' (DairyNZ), the edge of the waterbody, not the wetted area because this varies greatly (Greater Wellington Regional Council), and the bed covered at the bank-full flow (Bay of Plenty Regional Council).

When exemptions could apply

One submitter suggests using the exemption wording from the 2017 proposed regulations. Many submitters make suggestions about when stock exclusion or setback requirements would be technically difficult, impractical or not feasible. These situations, and some criteria suggested for exemptions, are where:

- fencing would be prohibitively expensive due to terrain, length required, or ongoing maintenance costs arising from weather events
- fencing is technically challenging and more effective, non-exclusion methods are available such as: gully retirement; providing shade and water away from the waterbody; identifying and managing critical source areas, laneways and gateways; or fencing the streamside seeps
- exclusion is not feasible, such as: where rainfall would drastically alter the course of the river or cause fences to be washed away or collect flood debris; where the banks are highly erodible or fence posts cannot be hammered in as the parent material is on the surface; or where electricity is not available for fences or water pumping
- exclusion is not practical because of the landscape form, remoteness, geography or terrain, harsh coastal environmental conditions, or multiple waterways in close proximity, or where, for example, high-frost zones make water reticulation impractical
- a region has adequately addressed risks in its regional plan, or where impacts on waterbodies from the farm management practice are adequately managed by methods in council-approved farm plans
- properties with rivers and wetlands subject to Taranaki Regional Council's Riparian Management Programme because they already have appropriate fencing, the additional protection of planting and are improving ecosystem health
- the benefits of the stock exclusion regulations are outweighed by the adverse impacts (such as from pest plants and animals, or visual effects of fences and riparian plants on significant natural values)
- some grazing in a particular wetland is beneficial (see Fish & Game Otago, and the Upper Taieri Water Management Group)
- there is a wetlands management plan at catchment level, or the farm is included in an approved catchment-scale plan
- current planted setbacks better meet the objectives than the setback
- stock units are very low, such as in high-country farming
- stock are taken across streams during mustering and other normal farming

Submitters seek clarification on:

- who grants the exemption
- whether the exemption is granted to the stock owner or the waterbody
- the timeframe of the exemption.

Stock crossings

Very few submitters comment on the stock-crossing proposals.

Federated Farmers opposes the threshold of twice a month and Beef + Lamb New Zealand wants the exception extended to 'or more than 12 times during the year'.

Northland Regional Council seeks better integration with the NES rules to protect wetlands, and another submitter wants better definition of the waterbodies to which this applies.

Marlborough District Council seeks better definition of the application of the stock-crossing restrictions to deer, whether it is appropriate to allow herd crossings even at low frequency.

Other issues

Taranaki Rural Support notes an increase in calls from farmers stressed by many factors, including the Essential Freshwater package.

Beef + Lamb New Zealand wants the timeframe for beef cattle extended to 2025, New Zealand Deer Farmers' Association wants the timeframe for deer extended to 2030.

Northland Regional Council feels the timeframe for excluding stock from all wetlands (2023) is unrealistic.

Few submitters want sheep to be included, and some want better management of the effects of feral pigs and deer on waterbodies.

The regulation may cut across contractual commitments between land owners and stock owners.

Tasman and South Waikato district councils and some others say all stock exclusion requirements should be set out in farm plans.

Some councils and individuals believe the regulations use inconsistent terminology and the policies are too complex. Some asked for clearer definitions, including that 'stock exclusion' be specifically defined as including natural stock-proof barriers and fences (including temporary or virtual).

Regional councils (Environment Canterbury, Greater Wellington, Horizons, Waikato) and other submitters want the regulations to specify regional rules can be more restrictive, or will apply regardless because some rules are more restrictive on waterbody type, or stock, but less restrictive on timeframes.

Legal issues

Several submitters question whether the regulations apply to the stock owner or the land owner.

Horizons and Waikato regional councils and other submitters want these regulations to be part of an NES rather than a section 360 regulation, to better integrate with the farming rules and for easier enforcement.

Kaipara District Council asks whether compliance with the regulation was a regional council or territorial authority role.

Impacts

Numerous individuals give information on the costs of stock exclusion. Farmers feel these costs are too high. Some submitters note the costs could drive land owners to intensify grazing or take up other land uses.

Submitters particularly focused on the impacts of moving fences (eg, the MHV Water Waimanu Farm Case Study estimates the costs of replacing the fencing and extending the planting from a two-metre to a five-metre setback at \$43 per metre of waterway, or \$116,000 for the property).

The Chatham Island Council states fencing costs are very high in their district and other pressures are causing greater effects on water quality; the policy should reflect this. Other district councils, especially those where agriculture dominates the economy, ask for better assessment of the economic, social and cultural impacts of the proposal consistent with the four wellbeings in the Local Government Act. They suggest the Government provides financial support.

Bay of Plenty Regional Council gives a comprehensive analysis of the likely costs to farmers in its region. It estimates that across the region, about 1.1 per cent of total grazing area (or 2571 hectares) for the affected land uses will need to be retired into setbacks. If every affected stock owner had to build a new fence, or move an existing fence to comply with the buffer, the total costs would be \$39.2 million, plus \$2.9 million per year in lost profit. The council states it is not possible to determine an optimal setback width because of the uncertainty of the effectiveness of different setback widths in mitigating against different contaminants in different circumstances and locations. It identifies the benefits as: reduced streambank erosion and contaminant losses through filtering; opportunities for riparian planting; increased amenity and recreational opportunities; lower risk of sickness when swimming; and more work for fencing contractors.

Te Tumu Paeroa, as the office supporting the Māori Trustee, administers around 87,163 hectares of Māori freehold land on behalf of over 90,000 Māori land owners and stakeholders. This includes 388 dairy and 825 pastoral properties. Te Tumu Paeroa estimates that for 60 of the 120 blocks in the Taranaki region with waterways, fencing would cost \$1.3 million, with an additional \$1.063 million to plant a five-metre riparian setback (another 60 blocks in Taranaki had no waterways).

Beef + Lamb New Zealand contracted consultants to undertake four case studies of individual farms, to test the potential impacts of the stock-exclusion regulations. Based on these studies (which included sheep farms, low-intensity hill country farms and small streams), it concludes the proposals will 'severely impact the ongoing viability of the sector'.

LGNZ contracted consultants to run economic impact testing of the proposals. Castalia focused on stock exclusion and estimated the costs would be between ~\$750 million and \$1.5 billion, whereas the interim regulatory impact statement (RIS) estimated costs of ~\$600 million.

(LGNZ's high-end cost included the land lost when moving fences on dairy farms; this was omitted from the interim RIS.) LGNZ wants more evidence local government can meet its statutory responsibilities in ways, or at rates, that allow communities to provide for their social, economic and cultural wellbeing.

The main differences between the cost estimates of Beef + Lamb New Zealand and LGNZ and those in the interim RIS arise from their assumptions about the policy requirements, the length of streams already fenced and existing setback widths.

Feedlots, sacrifice paddocks and other stockholding areas

Background

Feedlots, stock-holding areas and intensive winter grazing on forage crops pose a high risk of sediment, pathogens and nutrients entering water, putting ecosystem health under unnecessary pressure. These activities are mostly recent developments in farm management systems, or have increased on some farms, and are not generally regulated by regional councils.

What we've proposed

We propose specifying minimum requirements for these practices through the NES. Individuals who want to undertake these activities would have to comply with requirements and obtain a resource consent if they are above a certain threshold. For example, sacrifice paddocks will have to be at least 50 metres from a waterbody or a resource consent will be required.

The proposed NESs set out a consent regime designed to control how people keep livestock in these areas. Clause 27 of the NES regulates feedlots, clause 28 covers keeping animals on sacrifice paddocks, and clause 29 controls livestock in other stockholding areas.

Overview

Most submitters favour regulating feedlots.¹⁴ Some (often environmental NGOs) favour total prohibition of feedlots. Primary sector groups or local government submitters often support the proposals, but seek changes to address the key themes below.

On stockholding areas other than feedlots, views vary on the type of control submitters believe would best achieve the freshwater objectives. Some favour regulation through a consent regime, either as proposed or with amendments. Primary sector groups, as well as some local government submitters, tend to favour managing these areas solely through farm plans. Others, often environmental NGOs, prefer prohibiting all intensive stockholding.

Support for the proposals on sacrifice paddocks is more limited. Some believe a consent regime is an inappropriate tool to regulate a temporary management practice. Others say sacrifice paddocks lead to poor environmental outcomes and so should not be allowed.

¹⁴ In different parts of New Zealand the term 'feedlot' can refer to both 'conventional' feedlots (as covered in clause 27) and more short-term stockholding areas (covered in clause 29). This led some submitters to question which activity clause 27 was regulating, or to object to clause 27 on the grounds that 'feedlots' were more commonplace than the consultation material suggested.

Key themes

Difficulty of monitoring and enforcing

Some submitters, especially local government groups, are concerned about the enforceability of these proposals. They often suggest it would be difficult for regulators to know how long stock had been held in these areas.

Some local government groups note the proposals would increase the volume of consent applications to assess and monitor.

Unintended capture of animal husbandry areas

Some submissions are concerned the proposals could capture calf- and lamb-rearing sheds and other wintering barns or sheds. This is notable in submissions from the South Island (where cooler winters lead to housing animals, especially young animals, in such structures for longer in the winter).

Submitters, who farm animals other than sheep and cattle, are also concerned the regulation would inadvertently capture activities that are crucial to the viability of these farming systems, or which lead to good environmental outcomes.

One deer farming group notes heavier classes of deer are commonly held in winter barns for up to 90 days. This wintering practice is used to avoid pasture damage and adverse environmental effects. These submitters are concerned that because of this time period these areas may be wrongly classed as feedlots.

The equine industry is concerned certain types of horse husbandry and racing areas might be inadvertently captured.

These submitters often argue for exclusion of the type of farming or animal care structure at issue.

Unintentional encouragement of poor practice

Some submitters (often primary industry submitters) are concerned that prescriptive regulations of stockholding areas (other than feedlots) and sacrifice paddocks could lead farmers to avoid constructing such areas and so encourage poor pasture management.

Prohibit intensive stockholding

Some groups, often NGOs and environmental NGOs, oppose or only partially support these proposals on the grounds that all intensive stockholding should be prohibited rather than regulated. They often express the view that such areas create animal welfare issues.

Feedlots (clause 27)

Most support regulating feedlots through consents

Of submitters who comment on the clause, most support regulating feedlots. Few object to regulating feedlots as a discretionary activity. This view was held largely across sectors. A significant number of primary sector groups favour regulating feedlots largely as proposed.¹⁵ A small number of submitters favour classing feedlots as a permitted activity and managing the activity through the permitted activity conditions.

Controls not strong enough

Some submitters (often environmental NGOs) believe all feedlots should be prohibited. They say feedlots either contradict New Zealand's clean green image or are too environmentally damaging to be allowed by regulation. Others call for more stringent regulations.

Sacrifice paddocks (clause 28)

Impracticable regulations

Some note that, as sacrifice paddocks are often used as a temporary response to adverse weather, regulating them through a consent regime would be impracticable. As one submitter states: 'Sacrifice paddocks are typically due to short-term weather events, getting a consent to do this would be difficult during a snow storm'.

Regulation encourages poor practice

Some submitters (including farmers) believe using sacrifice paddocks in pasture management was evidence of poor practice and so should not be allowed. They often note that allowing some form of sacrifice paddocks risks undermining the environmental objectives of the package.

Other stockholding areas (clause 29)

Manage through farm plans rather than consents

Primary sector submitters, as well as some local government groups, often suggest that making these areas subject to a consent is not the best way to regulate them. They tend to prefer classing them as a permitted activity to be controlled through FW-FPs. This approach is often favoured by primary industry submitters, as well as some local government groups.

¹⁵ A number of primary sector groups who favour this approach want the clause regulating feedlots to exclude wintering facilities or the farming of animals other than cattle (such as deer or goats).

Intensive winter grazing

Overview

Intensive winter grazing on forage crops can increase the discharge of nutrients, sediment and contaminants into surface water and groundwater. It strips the land of its vegetative cover and causes pugging damage to soil integrity in wet weather. This activity has increased in the past 10 years with an increase in stock-feed demands and solutions such as helicopter spraying. This makes it possible to plant winter forage crops on steeper, sloped land.

We propose two options for regulating winter grazing on forage crops (tables 14 and 15).

Table 14: Option 1: Proposed national set standards

Activity status	Requirements
Permitted activity	<p>Permitted if:</p> <ul style="list-style-type: none"> the grazing does not take place on land with a slope equal to or greater than 10 [15] degrees the grazing does not take place over more than 30 hectares [50 hectares] or 5% [10%] (whichever is greater) cumulatively or in one contiguous area of the farm any grazing on sloping land takes place progressively downhill from the top of the slope to the bottom of the slope stock is not grazed in any critical source area a vegetated strip of at least 20 metres [five metres] that does not include any annual forage crop species is maintained between the grazed area and any waterbody or drainage ditch, and all stock are excluded from this strip during the grazing the grazed paddock is re-sown within one month, or as soon as practicable, after the end of the grazing pugging to a depth of more than an average of 20 centimetres [10 centimetres] does not occur over more than 50% of the paddock.
Restricted discretionary	<p>Consent required if grazing does not meet the requirements for permitted activity. Conditions are:</p> <ul style="list-style-type: none"> must not exceed the total area in annual forage crop or the highest total area in annual forage crop in any farm year between 2013/14 and 2018/19 must have a certified freshwater module in a farm plan (FW-FP) two years after gazettal.
Discretionary	<p>Consent required if grazing greater than largest extent between 2013/14 and 2018/19 farm years. Conditions are:</p> <ul style="list-style-type: none"> must have a freshwater module in a farm plan (FW-FP). no increase in discharge of nitrogen, phosphorus, sediment and microbial pathogen above a 2017/2018 baseline (average for this period).

Table 15: Option 2: Proposed industry standards

Activity status	Requirements
Permitted activity Supplemented by best practice standard guidance (eg, for strip grazing, protecting critical source areas and crop cover) as part of freshwater modules in farm plans	Permitted if: <ul style="list-style-type: none"> the grazing is not on land with a slope equal to or greater than 20 degrees all winter grazing is set back from the edge of waterways by five metres pugging extent must be no more than the depth of the ankle joint of stock (fetlock).
Restricted discretionary	Consent required if grazing does not meet the requirements for permitted activity. Conditions are yet to be determined.

During consultation we sought feedback on option preference, proposed thresholds and standards for intensive winter grazing on forage crops. The current results are below.

Q. 69 Do you prefer Option 1: Nationally set standards or Option 2: Industry-set standards? Why?

Option 1 is strongly supported by the dairy sector, environmental NGOs, Māori and iwi, scientists, individuals and a few councils as it provides:

- a national regulated approach for all current and future intensive winter grazing of forage crops
- a fair approach for all the primary sector.

Option 2 is strongly supported by the beef and sheep sectors, Federated Farmers, a few individuals and some councils, as it provides flexible, practice standard approach and reduces consent requirements.

Q. 70 For the proposed nationally set standards, which options do you prefer for the area threshold, slope, setback, and pugging depth components of the policy?

The stringency of the proposed standards is generally preferred by the Option 1 supporters:

Slope no higher than 10 degrees, scale no bigger than 30 hectares or 5 per cent, setback 5 metres and pugging no more than 10 cm. With exception of the primary sector favouring no pugging control and environmental NGOs favouring a 20-metre setback and a 5-cm pugging standard.

The more lenient standards are generally preferred by Option 2 supporters:

Slope no higher than 15 or 20 degrees, scale no bigger than 50 to 100 hectares, setback no more than 5 metres, and no pugging control. With an alternative option of no regulated standards and risk management through the FW-FP.

Submissions on intensive winter grazing

About 1642 submitters comment on proposals to control intensive winter grazing (IWG) on forage crops. Submissions raise the following issues and themes.

Intensive winter grazing views (Theme 1)

Views on these regulations are mixed. For some they are too strict (mainly beef and sheep farmers). They suggest minimum regulation for setback from waterways, and guiding the other conditions by good management practice.

Others (mainly the dairy sector) support some level of national regulations alongside good management practice. Councils tend to support regulation as permitted activity to reduce consenting burden. Others believe the regulations are not strict enough and will not control this practice. They suggest the need to be stricter, reduce this practice and some say prohibit it (environmental NGOs and individual submitters).

Freshwater Farm Environment Plans (Theme 2)

The beef and sheep sector strongly support farm plans as a tool to manage rather than regulate this practice. Most councils view the FW-FP as a tool to manage some of the permitted activity conditions.

We consider that some of the permitted activity conditions (ie, those in 30(1) d-f.) would be more appropriately addressed through the FW-FP. – LGNZ

Drafting (Theme 3)

Submitters recommend drafting changes for the proposed NES focus more on good management practice – conditions including removing pugging standard and tidy up of the timeframe for re-sowing of bare ground. LGNZ and other councils note the way the regulations are drafted, compliance will be difficult for farmers, resulting in a large number of consents.

We are also concerned that the way the regulations are currently drafted will require a significant number of consent applications on an annual basis. For example, Regulation 30 requires crop paddocks to have consents if they cannot meet any one of the conditions for a permitted activity. Crop paddocks tend to change every year. Therefore, annual consents would be required. – LGNZ

Definition of intensive winter grazing on forage crops (Theme 4)

A few query why the definition does not include all grazing in winter. An individual says all winter grazing is risky, and a territorial local authority asks for clarity.

Many of the issues we see in Southland are a result of break-feeding on pasture, this is why 'pasture' must be included in the definition. The intensive winter grazing rules are absolutely inadequate. – Submission 193

Impact of regulations (Theme 5)

Submitters comment the proposed regulations will affect farming communities' social and economic wellbeing if compliance means farming is no longer an economic proposition. Change in farming practice is also compounding the change fatigue experienced by farmers and the potential overload on farmers for consents to farm. The impact of the required changes on farmers' mental wellbeing is also noted by three submitters.

Please remember and respect our farms are our family, life, passion, income and love for animals and nature or we wouldn't be doing this 24-7. Thank you for your time!

Implementation (Theme 6)

Councils have implementation concerns, noting capacity issues to issue and manage consents, and to monitor and enforce conditions for IWG alongside other new regulations. They say the timeframe to implement the new regulations is too short and seek more time to transition. They make recommendations for tools, guidance, training, water science, mapping and datasets.

Councils also comment on enforceability and the difficulty of measuring the regulation standards.

Some of the conditions proposed under Clause 30 for intensive winter grazing will be difficult to monitor and enforce eg, re-sowing timeframe and the amount of pugging which will be subjective. – Greater Wellington Regional Council

Pugging standard (Theme 7)

Most primary sectors and councils reject a pugging standard as impractical and unenforceable. The primary sector and some councils favour industry setting standards.

Pugging depth limits will be very difficult to assess, monitor and enforce. It is more efficient to approach this through good practice guidelines in a Farm Plan. – Greater Wellington Regional Council

Support for strict pugging standards to address animal welfare issues is voiced by environmental NGOs and some iwi.

Alignment with regional plans (Theme 8)

Some councils comment on the impact on the current regional planning process to implement the NPS by 2025. This theme is common across the agriculture package.

Funding the change (Theme 9)

A few submitters are concerned about the cost of compliance. Some recommend the Government provide council funding and resources to address capacity and capability. The Government should also pay farmers who give up productive land to meet setback rules. The tax payer could meet the costs, through central government.

The Government needs to financially support regional councils to improve water quality otherwise this process will not work.

Unintended consequences (Theme 10)

Some primary sectors believe the proposed slope regulations would reduce land available for forage cropping and inadvertently result in intensified crop grazing. This could also put farmers in feed deficit, resulting in potential animal welfare issues for farmers and additional costs to buy feed.

[The regulations would be] indirectly encouraging farmers to grow higher yielding crops, importing more supplements and running a higher stocking rate than they normally would to stay under the proposed 10%. – Beef and sheep farmer 406

Submitters

The different positions of submitters tend to reflect their interests and sector.

Māori organisations and iwi

This group supports the package as a whole and regulations on farming practice to halt the degradation of water quality.

The introduction of standards for intensive winter grazing, feedlots and stockholding areas is supported because they ensure the welfare of the animal, while maintaining the environmental standards. – Waikato Tainui (page 12)

Some feel the proposals do not meet the objectives of Te Mana o te Wai. Most Māori and iwi favour Kāhui Wai Māori's recommendations for a moratorium on any intensification of this practice. Common to all Māori and iwi submitters was the lack of partnership approach by the Crown in developing the proposed regulations.

The Hokonui Rūnanga support the spirit of change and effort that the Ministry are taking to address the waterway health issues, and will continue to support the Ministry on these specific initiatives however ... the Rūnanga does not support the substantive proposed freshwater reform unless and until the Crown engages meaningfully with Ngāi Tahu to advance takiwā-specific solutions that will address Ngāi Tahu rights and interests in water. (Page 4)

This view is supported by some individuals and the Public Health Association of New Zealand in terms of the Crown's commitment and obligations under Te Tiriti o Waitangi (Treaty of Waitangi).

Individuals

Most individual submitters support the advisory group's recommendations. Some say the regulations do not go far enough to meet Te Mana o te Wai objectives, and want stricter regulations on intensive winter grazing. One submitter queries if the pugging standard could be implemented:

What has been proposed here is a bloody disgrace, in itself, brings into question the credibility of this whole policy, can you bureaucrats explain how this correlates with Te Mana o te Wai, 'the mana of the water', refers to the fundamental value of water and the importance of prioritising the health and wellbeing of water before providing for human needs and wants. (190)

I do not believe that the proposed intensive winter grazing rules are sufficient to bring our 'freshwater resources, waterways and ecosystems to a healthy state within a generation'. (117)

Pugging depth is ridiculous – where is it measured from? Who and how? This is not practical at all. How it is defined? – NGO (172)

Primary sector

This sector favours different options, depending on the type of farming. A common theme for the agriculture/farming regulations is making sure they do not disadvantage early adopters of

regenerative farming practice. Nearly all these submitters recommended removing the pugging control on the basis that it cannot be measured.

The dairy sector tends to support controls on IWG through regulation, with modifying the timeframe for re-sowing bare ground. Most recommend removing the pugging control. These submitters support national regulations as they take a consistent and fair approach.

In principle, DairyNZ supports nationally set mandatory standards for winter grazing on forage crops for all farms. The listed practices are already commonly referred to as Good Management Practices in the agricultural sector. – DairyNZ (page 87)

Regulation of winter grazing to level the playing field across all farm systems. We consider that has distinct advantages over industry-led standards. – Fonterra (page 1)

Beef and sheep sector submitters favour a permitted activity approach based on industry standards of practice set out in Option 2 for IWG. Some would prefer no regulations, and good management practice managed through the FW-FP. On the whole, the sector rejects the slope standard on the basis that it disadvantages their farming practice and advantages lowland farmers.

I believe an industry set standard is the way to go as the nationally set would require more consents and people to police and action them (and more cost) in the short period between decision and planting. – 406

Federated Farmers supports Option 2 – an approach where industry-set standards are used, with a restricted discretionary resource consent only being required where practices fall outside industry standards. (Page 101)

Researchers and scientists

This small group supports national regulations. One submitter favours regulated controls as it improves the effectiveness of riparian buffers; they provide the following reference:

Importantly, Parkyn (2004) also notes that optimising the filtration effectiveness of riparian buffers also requires improved land use practices over the broader landscape, to reduce nutrient and sediment influx to the riparian zone. For this reason, we support the intensive winter grazing and other farming provisions in the NES Freshwater. – New Zealand Fresh Water Scientists (page 27)

Environmental non-governmental organisations, public health and others

On the whole this small group supports tight regulations and eventual banning of IWG.

The NZCA supports rules to control intensive winter grazing, hill country cropping and feedlots. These will assist in addressing practices that are unsustainable and that contribute to the degradation of waterways.

Controls on intensive winter grazing are urgently needed, and so Forest & Bird welcomes the intention to regulate this activity. ... Regional councils in affected parts of the country have demonstrated that they are not willing to control intensive winter grazing even where it is badly impacting on freshwater health. We recommend that where this activity cannot meet permitted standards it should be a non-complying activity. – Royal Forest & Bird (page 32)

Councils

Some councils support a permitted activity approach and some support strong regulations with clear guidance on standards and conditions and standard baseline data. Some seek a more flexible approach using an FW-FP.

The Council requests permitted activity consent status for this commonplace rural activity.
– Carterton District Council (page 6)

All councils support the overall purpose of the freshwater proposals. However, they point out the challenges of cost, capacity to carry out consent, monitoring and enforcement, and say the timeframe is too short. Some raise alignment to current planning and implications for differences. There is concern about the social and economic impact on rural communities and the compounding effect of proposed multiple changes.

The added stress these proposals have caused to our farming communities is exacerbating the mental health issues and distress that already exists there, and which this Government has stated it is trying to tackle. In addition, these are not the only Government-led regulatory reforms our farmers are dealing with, as farmers are already under stress relating to the implications from this Government's raft of legislative changes and proposed regulations being made to the RMA and Carbon-Zero Bills. – South Taranaki District Council (page 4)

Summary

- There is general support for managing IWG through standards either as national regulated standards or industry-set guidance standards.
- Most of the dairy sector, iwi Māori, individuals and environmental NGOs support national standards.
- The beef and sheep sector support industry-set standards managed through the FW-FP with minimum regulation.
- Councils mostly support a permitted activity approach with a timeframe of at least two years to implement, and considerations of costs to do this work.
- All support the high-level direction for healthy water, but they differ on the pathway to healthy water.

Interim control of intensification

Nitrogen contamination of water is pervasive. Concentrations have increased in 55 per cent of monitored river sites. The most significant increases are in Waikato, Canterbury, Otago and Southland.

Livestock waste is the primary source, followed by fertilisers. This issue was one of the main drivers for proposing the original NPS-FM in 2008. It remains one of the most significant impacts of agriculture on our freshwater ecosystems. Intensification of agricultural land uses only adds to this pressure. As farm inputs such as irrigation, stock units, fertiliser use and cropping area increase, so too can the contaminant discharges.

The current NPS-FM requires regional councils to set limits that will eventually prevent intensification where it is not appropriate, and wind back unsustainable nitrogen discharges.

We propose interim measures to restrict land-use intensification (table 16). They would apply until regional councils have fully implemented the new NPS-FM and limits are in place, preventing further degradation and reducing the scale of improvement needed once plans are in place.

Table 16: Proposed interim measures to restrict land-use intensification

Activity	Requirements (resource consent not issued if standard not met)
Intensive winter grazing: increases in area of winter forage cropping	<p>Consent required (discretionary) if greater than largest extent between 2013/14 and 2018/19 farm years. Conditions are:</p> <ul style="list-style-type: none"> must have an FW-FP no increase in nitrogen, phosphorus, sediment and microbial pathogen discharges above a 2017/2018 baseline (average for this period).
Irrigated farming: increases in the land used on a farm for irrigated production	<p>Permitted if less than 10 hectares since commencement date.</p> <p>Consent required (discretionary) if greater than 10 hectares. Conditions are:</p> <ul style="list-style-type: none"> must have an FW-FP no increase in nitrogen, phosphorus, sediment and microbial pathogen discharges above a 2017/18 baseline (average for this period).
<p>High-risk, land-use changes:</p> <ul style="list-style-type: none"> changes from arable, deer, sheep, or beef farming to dairy support changes from arable, deer, dairy support, sheep, or beef farming to dairy changes from woody vegetation or forestry to any pastoral use. 	<p>Permitted if less than 10 hectares since commencement date.</p> <p>Consent required (discretionary) if greater than 10 hectares. Conditions are:</p> <ul style="list-style-type: none"> must have an FW-FP no increase in nitrogen, phosphorus, sediment and microbial pathogen discharges above a 2017/2018 baseline (average for this period).
Land-use change to commercial vegetable production: covers any such change	<p>Permitted if land-use change does not increase net area in a Freshwater Management Unit (FMU) (relative to highest extent between 2013/14 and 2017/18 farm years).</p> <p>Consent required (discretionary) if land-use change increases net area in an FMU. Discussion document includes two options for consent conditions:</p>

Activity	Requirements (resource consent not issued if standard not met)
	<p>Option 1:</p> <ul style="list-style-type: none"> • must have an FW-FP • must be operating above good management practice. <p>Option 2:</p> <ul style="list-style-type: none"> • must have an FW-FP. • no increase in nitrogen, phosphorus, sediment or microbial pathogen discharges above a 2013–2018 baseline (average for this period).

Overview

A considerable number of submissions, including pro-forma ones, do not address the interim proposals but express general concerns about either:

- a need for strong regulation (environmental NGOs and some iwi/Māori groups), or
- grandparenting (sheep and beef sector and others).

Those supporting strong regulations generally support strengthening the NES proposals as a whole (including the intensification regulations). This includes the roughly 12,000 pro-forma submissions from environmental NGOs.

Concerns about grandparenting relate to proposals that touch on freshwater allocation, which includes intensification. This includes about 700 submissions using the Beef + Lamb New Zealand pro-forma submission.

Issues and themes

- The proposals do not go far enough to achieve material improvement in freshwater quality in five years – there should be a moratorium or prohibition on intensification, or rules or restrictions to reverse past intensification.
- The proposals are a form of grandparenting that rewards higher-discharging farms and unfairly restricts lower-discharging farms and underdeveloped/undeveloped land.
- The ‘irrigated farming’ rule unnecessarily restricts low-discharging forms of horticulture.
- Resource consent applications will be too challenging to assess, or it will be too difficult to monitor compliance with the regulations.
- The proposals should apply to more or fewer parts of the country.

Other points

- Most submissions offer feedback on elements of the proposals and suggestions for changes, rather than explicit support or opposition.
- Submissions explicitly supporting the proposals mostly come from iwi, environmental NGOs and some primary industry groups (mostly dairy). Some support the proposals largely as drafted, while others give conditional support (such as only applying the regulations to over-allocated catchments).

- Submissions explicitly opposing the proposals generally come from primary industries. They raise considerable concern about the economic impacts on the primary sector, individual farmers and rural communities.
- Many from the horticulture industry, and some outside it, suggest a National Environmental Standard for Commercial Vegetable Production (NES-CVP) as a way to manage the environmental effects of commercial vegetable production. This would be a longer-term tool, rather than an interim measure.

Specific issues and themes

Options for land-use change to commercial vegetable production

Page 65 of Action for healthy waterways proposes two options for clause 36 of the NES (land-use change to commercial vegetable production):

- Option 1: No increase in contaminant discharges – the applicant must have a freshwater module in a farm plan and cannot increase nitrogen, phosphorus, sediment or microbial pathogen discharges above the enterprise’s 2013–18 baseline (average for this period).
- Option 2: Operating above good management practice – the applicant must have a freshwater module in a farm plan and must operate above good management practice.

Those favouring Option 2 are generally concerned Option 1 will have negative health and socio-economic impacts. They argue it would be almost impossible for commercial vegetable growing to expand under Option 1, meaning domestic vegetable supply would not be able to meet demand. This would lead to higher vegetable prices, more imported vegetables, and potentially lower vegetable consumption per capita. Many who support Option 2 request the word ‘above’ be removed from the regulation due to ambiguity about what ‘above good management practice’ means.

Submissions that favour Option 1 generally argue for treating all higher-discharging farms equally and therefore conversions to commercial vegetable growing should have similar restrictions to conversions to dairy farming.

A moratorium or ban on intensification and/or rules to reverse it

Submitters are concerned the proposals do not go far enough to achieve material improvement in freshwater quality in five years.

The regulations would require resource consent to carry out certain types of high-risk intensification activities (expand winter forage cropping, expand irrigation and some types of land-use change).

Submissions from environmental NGOs, iwi and other community groups, including a substantial number of pro-forma submissions, note the consenting approach does not go far enough to halt freshwater degradation from agricultural intensification.

Many support Kahui Wai Māori’s proposal for a moratorium on intensification and new water takes. Others suggest a prohibition or ban on dairy conversions. Some recommend keeping the consenting approach, but changing the activity status from ‘discretionary’ to ‘non-complying’, to set a higher consenting bar. Other suggestions include capping cow/stock numbers and fertiliser use, or other input controls.

These submissions argue that requiring resource consent still allows further degradation; a moratorium or prohibition would give greater environmental certainty.

A smaller subset note the rules do not do enough to reverse past damage caused by intensification (to meet the Government's second objective to reverse past damage within a generation). They suggest including measures to reduce current levels of intensity, such as the proposed fertiliser cap, actively reducing stock numbers and phasing out ruminant farming.

Proposals are a form of grandparenting

Submitters are concerned the intensification proposals are a form of grandparenting that locks in existing land uses at existing discharge levels. Submitters include: a range of individuals and organisations including primary industries (largely sheep and beef), environmental NGOs, local government, iwi and community groups.

This is primarily in response to the requirement to demonstrate no increases in contaminant discharges when applying for a resource consent under the proposed regulations. However, it is also in response to the combination of proposals to reduce excessive nitrogen and have a freshwater farm plan.

Submitters believe the proposals are unfair as they give greater flexibility to farms with higher discharges, and less flexibility to those with lower discharges. Common concerns are that the proposals:

- do not allow small increases of one contaminant discharge (eg, nitrogen) to help fund actions that reduce other contaminant discharges (eg, sediment)
- reward poor environmental practice by allowing a wider range of land-use options for farms with historically higher discharges
- provide fewer development options for farms already practising good management
- create a type of quasi-property right that gives higher-discharging land more value than land with historically lower discharges
- remove development opportunities for underdeveloped and undeveloped land (in particular, Māori-owned land)
- could become permanent or form the basis of a nitrogen allocation system, despite being proposed as interim.

A number of primary sector organisations and individual farmers argue the proposals reduce land-use flexibility, making farmers less able to adapt to climatic, economic and technological change. Many believe this removes a form of 'property right' essential for farming, and that the lack of flexibility will make their farms unprofitable. This is particularly so for sheep and beef operations, who occasionally take on dairy support to supplement their primary farm type.

There is particular concern from farmers with long-term plans to intensify. They may be unable to carry out their plans as a result of the new rules (or face higher costs for resource consent), including where a consent to take water for irrigation has already been granted.

There is a lot of concern from sheep and beef farmers that the lack of flexibility and proposed bottom lines for DIN would lead to many farms converting to forestry, as they believe it would be the only financially viable option to meet new DIN limits.

Some submitters note restrictions on conversion from woody vegetation to pasture could restrict farmers' ability to clear wilding pines and other pest plants (particularly on farmland that had been left fallow). This would prevent good quality farmland from reverting to farming once planted in forestry. This is of particular concern to those from the east coast of the North Island.

'Irrigated farming' rule is overly strict

Submissions from the primary sector, environmental NGOs, and iwi raise concerns that clause 34 of the NES (irrigated farming) is unnecessarily stringent as it applies to all irrigation, regardless of its purpose. They prefer requiring consent only for new irrigation tied to higher-discharging land uses.

Submitters point out it would be perverse to require a resource consent to irrigate land for low-discharging forms of horticulture (eg, viticulture, and fruit and berry growing). These would be unlikely to have an adverse environmental impact – particularly if land was being converted from higher-discharging pasture. They argue restrictions would present an unnecessary barrier to development (with little environmental benefit) and conflict with the Government's regional growth objectives, such as developing Māori-owned land, and regional economic initiatives funded by the Provincial Growth Fund.

Consent applications difficult to assess and monitor

Those applying for a resource consent would have to demonstrate to their regional council that their new activity will not increase nitrogen, phosphorus, sediment and microbial pathogen discharges, relative to discharges from earlier years.

Submissions from local government, primary industry and environmental NGOs highlight the lack of baseline information and measurement tools to make these applications and decisions. They argue this makes it too challenging to assess resource consent applications or to monitor compliance. They mention that:

- there are no models or tools to estimate sediment and microbial pathogen losses at a farm level, and the main tools for estimating nitrogen and phosphorus (ie, Overseer) are not adequate for regulation, or not suitable for all types of farming (in particular, horticulture)
- farmers do not have accurate (or adequate) historical information on land use and discharges to set a baseline for assessing changes
- regional councils do not have accurate information on existing or historical land use to monitor changes and therefore compliance.

Some (generally from the primary sector) say these limitations mean resource consents would never be granted, and the proposed regulations are, in effect, a prohibition on intensification activities.

Others (generally environmental NGOs) are concerned resource consents would be based on inaccurate information that underestimates the real impact of activities, leading to unintended freshwater degradation (hence their preference for a ban or moratorium).

Where the proposals would apply

The proposed regulations would apply to FMUs where freshwater plans giving effect to either the 2017 NPS-FM or 2020 NPS-FM are not fully operative. Once an FMU complies with the 2017 or 2020 NPS-FM, the regulations would not apply.

Submissions from a range of organisations raise concerns about where the proposed regulations would apply. They generally express one of two concerns:

1. the 2017 NPS-FM is too low a bar – the regulations should apply until the updated (2020) NPS-FM has been implemented
2. the regulations would apply to too many catchments, and should be targeted to catchments with specific issues.

A number state a prohibition on dairy conversions should apply permanently everywhere.

Submissions raising point 1 prefer the 2020 NPS-FM consulted on, as it would have more stringent bottom lines for ecosystem health (ie, the proposed bottom lines for DIN, DRP, fine suspended sediment).

Submissions raising point 2 argue the proposed regulations take a ‘one-size-fits-all’ approach that unnecessarily restricts development in catchments that do not have issues with water quality or agricultural intensification. Some suggest targeting ‘over-allocated’ catchments and tailoring consent conditions to the catchment. Under this approach, if a catchment is over-allocated for one contaminant, a consent would not be granted if the activity increased that contaminant, but could be granted if increased contaminants were not an issue.

Others suggest a similar approach for the proposed ‘nitrogen cap’, which would not apply to areas that have rules controlling nitrogen (but do not necessarily give full effect to the NPS-FM).

One submitter points out notified plan rules for freshwater take immediate effect under section 86B of the RMA, and that as drafted, the proposed regulations would be in place until those notified plan rules become fully operative. They argue this is unnecessary duplication, given the extensive work to prepare a plan for notification, and the regulations should not apply when a regional freshwater plan giving effect to the NPS-FM has been notified (rather than fully operative as drafted).

Reducing excessive nitrogen leaching

We propose three alternative options for addressing high nitrogen discharges in the short term (five years) before regional plans implementing the NPS-FM are in place.

1. Nitrogen discharge cap (N-cap): Catchment-specific, per-hectare caps on discharges targeting excessively high polluters in catchments with high nitrogen levels.
2. Nitrogen fertiliser cap: A national per-hectare cap on nitrogen fertiliser rates.
3. Farm-plan approach: Managing nitrogen loss through freshwater modules in farm plans (FW-FPs), required as a priority (by 2022) in catchments with high nitrogen levels.

Overview

Over 4000 submitters comment on proposals to reduce excessive nitrogen leaching. This includes:

- over 500 unique submissions, about 100 drawing strongly on the Beef + Lamb New Zealand pro-forma submission (described below)
- 153 pro-forma submissions prepared by Beef + Lamb New Zealand opposing Options 2 and 3, and supporting Option 1 provided the threshold is set proportional to the level of over-allocation of nitrogen
- 3460 pro-forma submissions prepared by Greenpeace New Zealand supporting Option 1 in combination with Option 2, and phasing out all synthetic fertiliser by 2025.

All three options have substantial numbers supporting and opposing. Overall, there is more support for a consent-based regime to reduce excessive nitrogen losses, or a fertiliser cap, or both in combination, than for a farm-plan based regime. However, this is strongly influenced by the large numbers of form submissions from Beef + Lamb New Zealand and Greenpeace New Zealand.

The Beef + Lamb New Zealand form submission supports Option 1, and the Greenpeace New Zealand form submission supports a combination of Options 1 and 2. The Ecologic submission rejects all three options and outlines an alternative approach whereby the Government would buy up farms and re-sell with a covenant restricting nitrogen loss.

Among the unique submissions (excluding both form submissions and those unique submissions that reiterated them), support is strongest for the farm-plan based option, and opposition is strongest for the fertiliser cap.

Submissions raise the following issues and themes.

- Option 1 is seen as:
 - enforceable (environmental NGOs and some primary sector organisations)
 - costly, complex and unfeasible in the timeframes; submitters seek either more time, or a simpler requirement, eg, use N-surplus, exempt low-intensity, dry-stock (councils, primary sector organisations, farm consultancies)
 - making incorrect use of Overseer (agribusiness, farmers, councils and primary sector organisations)

- unfair if it prevents low dischargers from increasing discharges (sheep and beef sector), but could be ineffective if it allows these increases (some councils)
- not well enough targeted sector-wise (primary sector)
- not well enough targeted geographically (include more, fewer or different catchments in Schedule 1)
- having adverse economic impacts at the farm scale; but regional-scale modelling (in submissions by DairyNZ and LGNZ) indicates relatively low impacts on GDP.
- Option 2 is seen as:
 - simple and enforceable (environmental NGOs, individuals)
 - crude, inefficient, inflexible, ineffective or unenforceable (primary sector, agribusiness, research organisations).
- Option 3 is seen as:
 - flexible, tailored and effective by some (primary sector, consultancies, dairy farm businesses, regional councils)
 - too lax and unenforceable by others (environmental NGOs and individuals)
 - grandparenting existing discharge levels, and therefore locking in low emitters (sheep and beef sector).

Other recurring themes

The options in the discussion document were a lightning rod for broader concerns, including Overseer use in regulation, policies that grandparent discharges, and synthetic fertiliser use.

The balance between certainty and flexibility: most sheep and beef submitters want to preserve their flexibility to increase discharges, and most farmers and growers want to preserve flexibility in nitrogen fertiliser use to meet crop and seasonal needs. On the other hand, environmental NGOs and many individuals prefer approaches they consider would provide certainty, for example regulating high dischargers to reduce discharges, or an enforced cap on fertiliser use.

Specific issues and themes

Disparate changes to the regulatory N-cap (Option 1)

LGNZ opposes Option 1 (regulatory N-cap), as do most regional councils with catchments in Schedule 1. However, Option 1 is supported by many environmental NGOs as the most enforceable option, and conditionally supported by most primary sector organisations, many sheep and beef farming businesses (using the Beef + Lamb New Zealand form submission), some iwi organisations, and the two most affected regional councils (Waikato and Southland). This partial support was caveated on a range of often disparate changes.

- **Simpler metrics:** DairyNZ, Fonterra, some dairy farmers, and agribusiness firms propose the use of Nitrogen-Surplus rather than Overseer estimates¹⁶ as a simpler and more robust metric for developing the threshold. However, Beef + Lamb New Zealand and Horticulture New Zealand oppose the Nitrogen-Surplus metric for their sectors. Fonterra considers the Nitrogen Scorecard useful for focusing farm practice changes and compliance reporting.
- **Changes to proposed use of Overseer:** LGNZ, Overseer Ltd, sector organisations and a number of farm businesses seek changes in the way Overseer is used in the proposal. Some believe this is inconsistent with recent expert opinion on appropriate use of Overseer. Others distrust the ability of the model to reflect their farm type. Some state Overseer can be manipulated to deliver lower results. Some councils comment that carrying out the farm plan should be the compliance measure, not Overseer results. Environmental NGOs did not raise objections about Overseer.
- **Changes to consent provisions:** Some environmental NGOs seek changes to the consent regime. Forest & Bird prefers non-complying status to the discretionary consent route (proposed for farms that cannot meet a five-year timeframe). Fish & Game New Zealand states in the controlled activity consents, matters of control should be extended to all contaminants of concern, rather than just nitrogen.
- **More (or less) flexibility for low dischargers:** Sheep and beef farmers seek flexibility for low-discharging farms to increase discharges. A few submitters (including Waikato Regional Council and Landcare Research) suggest capping all farms below the threshold, to avoid eroding the benefits of the proposal. Te Hunga Roia Māori o Aotearoa expresses concern those below the threshold could increase discharges.
- **Target sectors or farms based on risk:** Environment Southland suggests overcoming capacity constraints for delivering Overseer returns by screening out low-risk farms, based on stocking rate and fertiliser use. Fonterra says the arable and vegetable sectors should be included due to high nitrogen losses, whereas Horticulture New Zealand recommends excluding all horticulture.
- **Changes to Schedule 1:** A number of farmer and council submitters request some Schedule 1 catchments be removed, for example, because they have:
 - high ecological health (Waingongoro)
 - significant non-pastoral sources of nitrogen (Motupipi, Waipao, Upper Rangitaiki)
 - very small numbers of farmers (Upper Rangitikei and Taharua)
 - a preferable approach underway under the regional council plan (Parkvale and Southland catchments).

Some believe all catchments (or all that exceed bottom lines) should be included – these include some farming businesses, Water New Zealand and some environmental NGOs. A number believe the whole basis for selecting catchments is flawed, and should have taken a more holistic view, covering a wider range of contaminants beyond nitrogen, or taking account of the sensitivity of the receiving environment.

¹⁶ Fonterra provided data to support its view that Option 1 would be poorly targeted if Overseer is used to set the threshold – of the 500 Fonterra farms in the Waihou catchment, 60 farmers were estimated to be already at good practice (ie, low nitrogen surpluses) but over the 75th percentile for nitrogen losses, and therefore subject to the NES as drafted.

Address capacity and capability constraints: Many are concerned about the timelines in the draft regulations, due to capability constraints. DairyNZ considers the six months for 2400 dairy farms to obtain certified Overseer budgets inadequate. Waikato Regional Council provides data to support its view the time for providing Overseer returns is unfeasible in its region. Environment Southland also raises agribusiness capacity issues.

Setting the thresholds: Fish & Game New Zealand says the percentile for setting the threshold should be the 70th, whereas DairyNZ believes it should be the 90th. Beef + Lamb New Zealand and Federated Farmers believe the percentile should vary, based on the severity of the nitrogen pressures. Waikato Regional Council prefers the 75th percentile to maintain consistency with its Plan Change 1. Federated Farmers says thresholds should be set separately for each sector, and Beef + Lamb New Zealand suggests including all pastoral farm discharges in the calculation to set the threshold.

Views on the fertiliser cap (Option 2)

Option 2 (fertiliser cap) is supported by Greenpeace New Zealand and the Environmental Defence Society as a straightforward regulatory curb on fertiliser use. The Greenpeace New Zealand form submission prefers Options 1 and 2 combined, phasing out all synthetic fertiliser by 2025, and no exemptions for high nitrogen-demanding crops.

Most farmers, agribusiness, local government, and primary industry organisations oppose this option as crude, inefficient, inflexible, ineffective or unenforceable. Plant and Food Research strongly oppose it due to the complexity of developing and enforcing appropriate caps across the range of crops, seasons, growing practices, climate conditions and soil types.

Opinions are mixed on the efficacy of a fertiliser cap approach in Europe. Some claim its effectiveness and others claim it had failed.

Views on the farm plan approach (Option 3)

Option 3 (farm plan approach) is opposed by many sheep and beef farmers and environmental NGOs. However, many dairy farming businesses and organisations support it, as well as some regional councils, as enabling flexibility. They believe it would be effective because the farm plan would be tailored to the farm and the catchment. Issues include:

- Best practice required: Horticulture New Zealand and Federated Farmers state farm plans should go beyond good practice to best practice requirements, because of the high nitrate status of Schedule 1 catchments. The Avocado Growers' Association notes a best practice requirement would give more certainty about what is expected of growers (it prefer this to specifying a percentage reduction in nitrogen losses).
- Enforceability: LGNZ supports Option 3, with provisos including farm-plan enforceability. ECO states 'this one is too important to leave to the industry option'.
- Grandparenting concerns: The sheep and beef sector and some Māori farming interests oppose Option 3 because they believe it would require them to reduce already low nitrogen losses. This was seen as grandparenting a nitrogen loss allocation.

Economic impacts

Many farmer submitters are concerned about the economic impact of the proposals. Federated Farmers surveyed its members in Schedule 1 catchments, and report 70 per cent of respondents said they would not be able to continue in business if required to significantly reduce nitrogen losses.

Taranaki Regional Council commissioned modelling which found affected dairy-farm costs would increase by an average of \$30,000 per year under Option 1. Greater Wellington Regional Council believes the impacts would be no greater than from the proposals developed by the Whaitua in their region.¹⁷ DairyNZ's economic analysis quotes earlier research that for 60 per cent of farms over the 75th percentile, the cost of achieving the threshold would be less than 3 per cent of baseline operating profit.

At a regional and national scale, DairyNZ's modelling indicates Option 1 would have only a marginal impact on dairy sector profits, if the threshold were at the 75th percentile, with a fall in national GDP of –0.1 per cent. Southland Regional Council modelling indicates the impact of Option 1 on regional GDP would be less than 1 per cent by 2027, although it represents a loss of 4 per cent in the regional value added from dairying.¹⁸ Environment Southland notes Option 1 would bring forward requirements likely to be needed in the longer term anyway (under the NPS-FM 2020), with the benefit of hastening improvements in water quality, especially as lag-times are relatively short in Southland.

¹⁷ LGNZ's economic modelling report.

¹⁸ Ibid.

Proposals undergoing a separate process

This section summarises issues and themes raised in submissions on:

- regulating to better support the delivery of safe drinking water
- improving the management of stormwater and wastewater.

Proposals relating to three waters will be considered as part of the Three Waters Review process, separate to the process for developing the rest of the Action for Healthy Waterways proposals.

Wastewater and stormwater

We consulted on several high-level proposals as part of the Three Waters Review. They included:

- a new National Environmental Standard for Wastewater Discharges and Overflows
- risk management plans for wastewater and stormwater
- new metrics for wastewater and stormwater
- guidance on stormwater management.

Proposals relating to three waters will be considered as part of the Three Waters Review process, which is separate to developing the rest of the Action for healthy waterways proposals.

Overview

In total, 269 submitters comment on the stormwater proposals (or stormwater issues in general), and 277 on the wastewater proposals (or wastewater issues in general).

A key theme is equity between urban and rural areas. Several submitters, mainly from rural areas, note the need for urban areas to contribute to improving water quality. Some mention fairness between what rural land owners were being asked to do versus people in urban areas. Another perspective is that focusing on urban wastewater discharges would be more effective.

Several submitters, especially from local government and water infrastructure providers, do not feel they have enough information to support the proposals or suggest improvements. They stress a need for the Government to provide clarity as soon as possible. Some express a willingness to be involved in further policy work.

Wastewater

Issues and themes

Many acknowledge the need to address management of wastewater. Several believe improving wastewater has been overlooked in comparison with rural water quality.

A large proportion of submissions are about wastewater generally, rather than specific proposals (ie, the wastewater NES, risk management plans or metrics). Less than a fifth address the proposed NES.

Several submitters, in particular individuals and iwi/Māori, state any discharge of wastewater into waterways or the coastal environment is unacceptable. A small number mention that wastewater discharges into waterbodies is inconsistent with Te Mana o te Wai.

Some are concerned about the costs of upgrading wastewater treatment plants to meet higher standards, and the effect on ratepayers, especially in small or deprived communities. Several call for an appropriate balance between environmental considerations and the economic wellbeing of communities. Several also note the environmental gains would sometimes not be great enough to justify expensive wastewater treatment upgrades, and that investment would be better focused elsewhere.

There is more support than opposition for an NES on wastewater discharges and overflows. However some, in particular water infrastructure providers, express concern about a 'one-size-fits-all' approach to wastewater standards.

Submitters also note the costs of complying with the wastewater proposals, including the resourcing to develop risk management plans and ensure compliance.

Several submitters comment on managing wastewater outside the piped system, such as septic tanks and long-drops in rural communities. They note the effects on local freshwater quality.

A few submitters raise compliance, monitoring and enforcement under the current system.

Several, especially local government and water infrastructure providers, call for guidance to support any proposals on wastewater.

Stormwater

Issues and themes

Many submitters, particularly Māori, individuals and farming businesses, note stormwater has adverse effects on the environment and that councils need to improve the way they manage these.

Councils note the significant costs associated with implementing water sensitive design and related best practices. They note the Government should provide guidance and funding to support its uptake.

Councils note the costs to upgrade stormwater infrastructure to meet the current NPSFM is likely to be significant, with costs increasing under the proposed NPSFM. They say that meeting the current and proposed NPSFM would require significantly more capability than is currently in the sector.

Several people, particularly consultancies, note the need to strengthen obligations and accountability for the design and operation of stormwater systems.

Several submitters state it is important for the Government and councils to educate people on how daily activities can affect stormwater quality, and the adverse effects on the environment. Education on litter, copper, zinc and emerging contaminants was of particular concern.

Submitters note:

- some councils can discharge stormwater without consent, or have been allowed to breach consent conditions
- compliance, monitoring and enforcement of stormwater discharges needs to improve. Some note regional councils have taken a soft approach
- stormwater is commonly discharged without treatment. Submitters are particularly concerned about the amount of visible litter in stormwater discharges
- copper, zinc and emerging contaminants need to be addressed as they are having an adverse effect on the environment
- the importance of water sensitive urban design in addressing stormwater issues. These are typically raised when submitters discuss the need for stronger regulation and improved infrastructure

- guidance would assist councils and other organisations adopt best management practices. Submitters call for guidance on policy, modelling, consenting, water sensitive urban design, compliance, monitoring and enforcement, and education. Councils note guidance on water-sensitive urban design should combine with guidance on funding, maintenance and operation.

Risk management plans

There was some support for risk management plans (RMPs). Some support wastewater or stormwater RMPs specifically, while others RMPs in general without specifying the purpose.

One council suggests a small number of high-quality RMPs would be more valuable than rushed ones everywhere. One submitter says RMPs duplicated the work already done through Asset Management Plans, and another that it will be important to ensure RMPs align well with the consenting process to be useful.

One council notes these plans would not be necessary as resource consent conditions cover the management of environmental risks.

One council notes risk management plans for stormwater would not be necessary as resource consent conditions cover the management of the associated environmental risks.

Submitters suggest:

- these plans account for climate change and should be based on catchments
- altering the scope of the plans depending on the size of the network
- providing template plans to avoid unnecessary work for councils.

Wastewater and stormwater metrics

Most who refer to nationally defined metrics agree wastewater and stormwater metrics would be useful. They note these should be flexible to reflect local conditions and catchments.

Some note that metrics should include financial and operational metrics, not just water quality.

Other observations

We also noted the following.

- In general, individual submitters were more likely to suggest stricter regulation. People from rural areas thought more should be done about wastewater and stormwater, and that the proposals focused too much on rural sources of pollution.
- Submissions from organisations including councils and water services tended to raise concerns about the cost and resourcing, flexibility to suit the needs of different communities, and good guidance to support the proposals.
- Some submitters raised concerns about the proposed NPS-FM provisions on nitrogen, and whether these would put an unmanageable burden on wastewater treatment facilities.

Drinking water

As part of the Three Waters Review, we consulted on a proposal to amend the National Environmental Standard for Sources of Human Drinking Water. The amendments would:

- provide direction on setting source water risk management areas
- define the types of activities that must be assessed as potential risks to source waters in the protection areas
- expand the regulations so they apply to all registered water supplies serving more than 25 people (for at least 60 days per calendar year)
- develop a new approach for managing specific contaminants in source waters
- require regional councils and territorial authorities to:
 - appropriately control the development and use of land in source-water risk-management areas, to ensure safe drinking water
 - review plan rules for activities in source-water risk-management areas to ensure appropriate controls are in place.

Proposals on Three Waters will be considered as part of the separate Three Waters Review.

Overview

In total, 198 submitters comment on proposals to amend the NES for Sources of Human Drinking Water. These were all unique submissions.

Most support increased protection for sources of human drinking water, and most supported in principle the idea of strengthening the National Environmental Standard for Sources of Human Drinking Water (NES-DW), but some express concerns about the costs.

General themes

- Submitters raised concerns about how and when an amended NES-DW would be implemented. Many councils comment they are under-resourced (in staff and financial resources) to deal with the multiple National Direction instruments in process, in addition to the Essential Freshwater programme.
- The timing of the amended NES is of interest, as organisations are developing their long-term plans for 2021–2031.
- There is support for formalising Source Protection Areas (SPAs) and having a time limit for default SPAs, but there are reservations about the impact on land use.

We also noted the following.

- Submissions from the general public centred on access to clean drinking water, and how drinking water supply would be administered in the future. There is possible confusion about the role of the Ministry for the Environment, Department of Internal Affairs and the Ministry of Health in setting drinking water standards compared to the role of the NES-DW.

- The most common issue raised by submitters is contamination of drinking water – specifically, the health risk of nitrate-nitrogen. Many submitters mentioned the Danish study which stated a concentration of nitrate ion over 3.87 mg/L was associated with an increase in colorectal cancer rates. Submitters also mention contamination of drinking water from other chemicals (including emerging contaminants), microbes and waste. Although we are asking for feedback on management of specific contaminants (such as nitrate-nitrogen) altering the Maximum Allowable Value (MAV) is not currently in scope for the Drinking Water NES amendments.

Feedback from local government

Four regional and/or unitary councils and 10 district or city councils submitted. All councils support the move to strengthen the NES for drinking water – however, submitters raised the following reservations:

- whether water suppliers and councils would have to purchase land to ensure the source protection area is maintained
- if councils would have to compensate land owners for loss of use if previously consented activities were no longer allowed when consents were renewed
- the prioritisation of water use under Te Mana o Te Wai – this does not fully align with the Health Act and the Local Government Act where local government has an obligation to provide an adequate supply of drinking water and to maintain water services
- with the amendments covering water supplies that supply 25 people for 60 days per year, there were concerns about a) identifying all suppliers and b) if the compliance cost would be proportionate to the risk
- nitrate and nitrogen contamination is of concern to councils. It is difficult to remove from drinking water and there may be a considerable health risk from exposure to nitrate levels that are lower than the current MAV
- more detail on the proposals is sought, and local government anticipates commenting further on the NES-DW options when there is further consultation in 2020.

Feedback from Māori

We received submissions from four iwi and one Māori-affiliated organisation, as well as Kāhui Wai Māori. All support increased protection for sources of drinking water.

- One organisation is concerned about nitrate-nitrogen levels in water as this is difficult for water suppliers to remove.
- All mention they hope to see engagement with iwi as an ongoing dialogue before public consultation.
- Kāhui Wai Māori is concerned the right to regulate water suppliers was not resolved, and would prefer a parallel process to address Māori rights, interests and obligations, alongside Three Waters.
- Kāhui Wai Māori also mentions access to affordable, safe drinking water in more remote or isolated rural areas.

Feedback from the health sector

We received two submissions from public health organisations. Both submitters:

- support increased protection for drinking water sources
- are concerned about the MAV for nitrate in relation to potential cancer risks
- support better definitions for source protection areas.

Feedback from business and industry

There were 41 submissions from business and industry, including agribusiness.

- 28 submitters support the proposed amendments
- 10 submitters give partial support
- 3 submitters oppose the amendments.

Those in partial support note the scope of the proposed amendments and possible land use controls.

Role of territorial authorities

We are proposing new policies in the NPS-FM to:

- direct territorial authorities to manage the effects of urban development on water
- support integrated management across FMUs.

This proposal would involve adding provisions that territorial authorities have a responsibility for contributing to the integrated management of freshwater, and the use and development of land. It would direct territorial authorities to add objectives, policies and methods to their district plans at the next plan review, to manage the effects of land use from urban development or redevelopment on freshwater.

Overview

In total, 104 submitters comment on the proposals.

About two-thirds come from local government – mainly territorial authorities but also LGNZ and some regional councils – and about a fifth from NGOs. Around a quarter are from individuals.

They generally support:

- improving the integrated management of freshwater resources
- better management of freshwater in urban environments.

Issues and themes

- Clarify the functions of regional councils and territorial authorities, potentially by amending sections 30 and 31 of the RMA.
- Clarify whether certain provisions of the NPS-FM (eg, on wetlands) apply to regional councils or territorial authorities.
- Some or all of the proposal is outside territorial authorities' functions under the RMA.
- Align timeframes with regional planning and processes under the Local Government Act. Some comment territorial authorities need more time; others that the timeframes for territorial authorities should be shorter.
- Cost and resourcing implications for territorial authorities.
- Balance freshwater and urban development priorities. Align the provisions better with the proposed NPS-UD.

Specific issues and themes

Councils want more clarity about their roles

Six submitters state the policy is not clear enough on the roles of regional councils and territorial authorities. Two of them suggest that amending sections 30 and 31 of the RMA would be the appropriate solution.

Three submitters say the proposal would lead to duplication of responsibilities between regional councils and territorial authorities. Two note that some or all of the proposal is seeking to direct territorial authorities to take actions that are outside the scope of their functions under the RMA. They cite treatment at source as a function that should not be included for this reason.

Others ask how the roles apply to aspects of the NPS-FM, including:

- direction on protecting wetlands
- compliance monitoring for stock exclusion.

Implementation and resourcing

Cost and resourcing is one of the most common issues.

Only three submitters note the cost implications of including direction to territorial authorities.

However, seven note the mix of proposals affecting territorial authorities (risk management plan requirements for wastewater and stormwater, re-consenting of wastewater and stormwater discharge consents in anticipation of stricter conditions for discharge quality, and stricter controls of land use near drinking water sources). They state these will add up to greater pressure on councils.

Timeframes

Six submitters comment on the timeframe for direction. While regional councils would have to implement the NPS-FM by 2025, territorial authorities would have to take action as part of their next plan review.

Two submitters state that as a territorial authority's next plan review could be 10 years or more away, they could be required to amend district plans sooner (eg, within two years of completing a regional plan). However, four other submitters note the timeframes may not be long enough given the investment required, and may not align well with regional planning or processes under the Local Government Act.

One submitter suggests clarifying how respective roles would work in practice between now and 2025.

Balancing urban development and freshwater considerations

Several submitters say the NPS-FM does not give territorial authorities enough direction to help them balance urban development and freshwater priorities, where there is tension. Some state the policy is not well aligned with the proposed NPS-UD.

Other feedback

Suggested changes include:

- requiring regional councils and territorial authorities to cooperate, rather than saying they 'should'
- ensuring other organisations (eg, Department of Conservation) collaborate on integrated management
- requiring territorial authorities to comply with mandatory actions, rather than an information note with suggested actions
- improve the consistency of wording between clause 3.4(5) and 3.4(6)
- expand the clause to cover land use more generally, not just urban development
- include standards for contaminants from roofs and gutters for communities using rainwater tanks
- require territorial authorities to manage land use to 'improve' water quality rather than avoid, remedy or mitigate adverse effects
- specifically require water-sensitive urban design
- remove the direct insertion clause for regional policy statements, as it is unnecessary
- be specific the next review of a district plan refers to a review under section 79 of the RMA
- be more directive about the role of a regional policy statement and how it directs a district plan.

Wider issues and themes

This section describes issues and themes raised in submissions that do not relate to specific proposals that were consulted on, or are broader in nature. They offer insights into wider problems of freshwater management and may influence final decisions, or inform the design of future work programmes.

Māori rights and interests, Te Tiriti o Waitangi, and the Wai 2358 inquiry

We received 206 submissions through the Essential Freshwater consultation related to Māori rights and interests, Te Tiriti o Waitangi, and the Waitangi Tribunal's Wai 2358 inquiry.

Issues and themes

- Co-governance and decision-making
 - Council and iwi partners need to work together, to express views in freshwater management.
 - Establish co-governance between Crown and Māori for freshwater management going forward. Regulations are essential to strengthen the Māori voice at all stages in water management system design and processes.
 - Government and regional councils must co-design these processes with tangata whenua.
 - Providing for 50:50 representation by Māori commissioners would help improve Māori representation in decision-making and give effect to Te Tiriti o Waitangi (Treaty of Waitangi).
 - Submissions support a national co-governance body (Waitangi Tribunal recommendation) – suggesting this will provide opportunities to work together.
 - Co-governance is implied by Te Tiriti o Waitangi (Treaty of Waitangi) principles. This level of governance is required at a minimum, given Crown Māori rights and interest obligations in water.
- Proprietary rights
 - Several submissions note the urgent need to discuss and resolve Māori proprietary and co-governance rights within a three-year period.
 - The Government must resolve Māori proprietary and co-governance rights, interests and obligations within the three-year timeframe. Along with the recommendations from the Wai 2358 report, the allocation regime must be resolved urgently.
- Water ownership and allocation
 - There are strong opinions about the ownership of water, with a clear division between the view that no one owns it versus the urgent need for iwi recognition and acknowledgment of rights and interests.
 - Allocation and customary rights need to be resolved urgently. This needs to consider all interests including Māori, existing and potential users.

- To give effect to Te Mana o te Wai, a fair allocation model must be considered that recognises iwi as a Te Tiriti o Waitangi (Treaty of Waitangi) partner.
- Concern the reform proposals fail to offer any commitment to resolving rights and interest issues.
- Upholding Te Mana o te Wai will not be successful unless the issue of allocation has been resolved.
- Disagreement that Māori have rights to ownership of water, recommending the Government form a clear understanding of what Māori do own, before including a water property right for Māori in a planning document.
- Support for a moratorium while water ownership is resolved.
- Under a first-in, first-served allocation system, opportunities for Māori economic development are limited – particularly in catchments with over-allocation.
- Until the allocation system is changed, the proposed prioritisation of values risks increasing barriers to the development of Māori land.
- The Government should consider a standalone Water Act to reinforce the significance of water as a taonga.
- Te Tiriti o Waitangi (Treaty of Waitangi) settlement obligations
 - Te Tiriti o Waitangi (Treaty of Waitangi) settlements have reset expectations that Crown and councils protect and provide for mana whenua values. Ongoing consultation is required to ensure Te Tiriti o Waitangi (Treaty of Waitangi) settlements and values align with policy.
 - Implications of Te Tiriti o Waitangi (Treaty of Waitangi) settlement arrangements could conflict with updated policy, unintentionally further limiting iwi development of their land.
 - Economic development is a Te Tiriti o Waitangi (Treaty of Waitangi) right, and Māori should not be further disadvantaged by these proposals.
 - It would be a breach of Te Tiriti o Waitangi (Treaty of Waitangi) principles for regional councils to have further authority to resolve customary title and rights to freshwater.
 - To honour Te Tiriti o Waitangi (Treaty of Waitangi) principles, what funding will be available to assist iwi and hapū to do the work required to protect freshwater?
 - A sense that the degradation of water is a clear violation of Te Tiriti o Waitangi (Treaty of Waitangi). The principles of Te Mana o Te Wai are important, and a step in the right direction to educating New Zealanders to honour Te Tiriti o Waitangi (Treaty of Waitangi).
- Waikato River – Te Ture Whaimana
 - The co-management principles that underpin the Waikato River settlement legislation must be recognised and upheld.
 - The Waikato hydro scheme is listed as one of the schemes that would be exempt from certain obligations. Any exemption of the scheme under the draft NPS-FM is therefore likely to be ineffective and contravenes the New Zealand Settlement Act 1863. Te Ture Whaimana prevails over the NPS-FM, demonstrating the issues that arise when the Crown does not consult with iwi.
 - Consider adding a statement that recognises existing mechanisms such as the Vision and Strategy, and that these mechanisms take precedence as noted in the Waikato river legislation.

- Resourcing capacity and capability
 - There is concern about iwi and hapū having the capacity and funding to meet the demands, especially iwi who are yet to settle.
 - There are questions about whether councils have the right people to build relationships, connect and work effectively with iwi and hapū.
 - Building capability is required for both tangata whenua and council to effectively work together managing the waterways.
 - There is concern that structural and system changes will be required at local government level to sustainably manage freshwater.
- Drinking water
 - NPS provisions must allow for establishing new drinking-water supplies to marae and papakāinga.
 - Maintain existing drinking-water supplies to support small rural towns and ensure essential health services.
 - It is encouraging the Government is addressing access to safe, clean and affordable drinking water.

Outlined below are wider views on the proposals, on ownership, Māori rights and interests, and the need to further discuss recommendations from the Wai 2358 report.

Views on the package of proposals

Submitters on rights and interests include farmers, private land owners, iwi, hapū, Māori organisations and land owners, NGOs and councils with varying views and opinions of the reform proposals. Overall, submitters support the proposals, agreeing that it is possible to build a future where New Zealand has healthy waterways.

Submissions support strengthening and clarifying the requirement to manage freshwater in a way that gives effect to Te Mana o te Wai, agreeing that protecting Te Mana o te Wai is essential for maintaining all values now and for the future. However, views on cultural beliefs clash. Some support the proposals, suggesting the Government is moving in the right direction, and identifying the spiritual and cultural significance of freshwater for Māori. Others believe the suggestion that iwi and hapū have a right to freshwater and imposing Māori philosophies and world view on farmers is unacceptable and of no relevance.

Implementation concerns

Iwi, hapū, Māori organisations, land owners and councils overall support the changes, with a view the Government is moving in the right direction. However, they are concerned about how the changes will be implemented – including capability from both parties. They endorse the desire to improve the ability of iwi and hapū to express their values in freshwater management, with the elevation of mahinga kai as a compulsory value.

There is concern from all groups over how councils will be held to account. Councils have different relationships with tangata whenua. Some iwi and hapū feel marginalised and that their advice is dismissed. Some submitters seek assurance a mechanism including guidance, direction and measures, will be implemented to manage council performance and make councils accountable for ‘giving effect’.

Proposals do not go far enough

Submissions support elevating mahinga kai and creating a new tangata whenua freshwater value. They comment this will strengthen Māori freshwater values. It must be developed with mana whenua as Te Tiriti o Waitangi (Treaty of Waitangi) partners in an active and shared decision role, not as a community exercise.

There is an overall concern the policy proposals do not go far enough to recognise and provide for the relationship of wai to Māori and its cultural importance. They say that proposals continue to fail to recognise and provide for Māori relationship with freshwater, and must provide for Māori in decision-making. Submitters state the reform fails to address concerns noted by the Wai 2358 report, and express concern the Crown is not seeking to address those concerns in good faith with Te Tiriti o Waitangi (Treaty of Waitangi) partners. There is concern small Māori land owners will be disadvantaged by the changes, which may limit their ability to develop their land.

Proposals may go too far

Farmers and private land owners' concerns include the view that Māori do not have rights to ownership of water, and therefore commissioners with 50:50 representation will produce a system of exclusivity – such bodies should consist of those with appropriate scientific knowledge, and race should not be a consideration for appointment.

Within this group, there is also a sense that Māori values, including mauri and mātauranga, are not scientific, therefore have little relevance and should not be imposed on the rest of New Zealand. The use of te reo (Māori language) within the policy could be misread, for example the suggestion that 'mahinga kai' maybe taken to mean kai (food) exclusively for Māori, which is viewed as unacceptable. The use of the word 'korowai' could also cause hostility.

National co-governance body

Submissions support the Waitangi Tribunal recommendation of a National Co-governance body, with suggestions of other functions the body could be responsible for. These include:

- investigating other possible mechanisms for proprietary redress, including royalties
- developing a new water allocation regime, in partnership with Māori which enables the development of Māori land
- overseeing and holding councils to account, ensuring they are meeting and delivering on their responsibilities

These submitters saw this body as essential to improve the degradation of waterways. To be Te Tiriti o Waitangi (Treaty of Waitangi) compliant it would have to adequately represent Māori interests in freshwater and be co-designed with Māori.

Submissions process

Many submissions comment the time provided for submissions favours those with more capacity to respond. They suggest that smaller industry submitters – including iwi and hapū – will have struggled to meet it. There is concern the Ministry for the Environment has not met its Te Tiriti o Waitangi (Treaty of Waitangi) responsibilities with this consultation, and failed to provide iwi with the opportunity to properly engage with members.

Kahui Wai Māori:

- Only some recommendations for structural change have been incorporated. All recommendations need to be implemented in their entirety to achieve Te Mana o te Wai.
- The proposals do not represent the significant step change promised with the launch of essential freshwater reforms.

Submitter views on engagement:

- Mana whenua must be involved with decision-making. The public consultation for this proposed reform has not been consistent with the requirement of Te Tiriti o Waitangi (Treaty of Waitangi) partnership.
- Iwi and hapū believe they have not been given any appropriate opportunity to engage with the Ministry on the proposals.
- There is a repeated concern that the freshwater reforms need to be implemented quickly to protect waterways; however, this cannot come at the expense of iwi and hapū engagement.
- There is support for iwi and hapū being able to affect decisions about the water in their rohe, and a request for the Government to work directly with them on policy solutions.
- Iwi request the Ministry engage in early, genuine and ongoing engagement on the basis that this is critical not only as iwi partners, but to produce workable and successful solutions to freshwater management, specifically:
 - Te Tumu Paeroa request direct discussions, with concern about small Māori land owners indirectly being negatively impacted by policy changes.
 - Te Kotahitanga o Ngāti Tūwharetoa recommend the Ministry arrange a wānanga to discuss the implementation of Te Mana o Te Wai values.
 - Te Rūnanga o Ngāti Awa formally request a programme of talks with relevant ministers, and offer to assist Ministry officials with progression.
 - Te Rūnanga o Ngāti Awa request acknowledgment of their submission and request to be communicated with directly to inform this policy.
 - Ngai Tahu expect the Crown to engage directly in respect of statutory acknowledgment areas, which the Ministry has currently failed to do.
 - Waikato Tainui requests direct engagement with the Crown and officials on the ongoing process of development of the NPS – Action on Healthy waterways, as well as discussions of the appointment process to Kahui Wai Māori.

Allocation of rights to use freshwater

Water allocation is within the scope of the Essential Freshwater work programme, but the Action for healthy waterways proposals do not address this topic.

One of the three main objectives of the Essential Freshwater work programme is:

Addressing water allocation issues – working to achieve efficient and fair allocation of water and nutrient discharges, having regard to all interests including Māori, and existing and potential new users.

Submissions related to water allocation will be taken into account in the ongoing Fair Allocation work programme. The programme's objective is to set a new framework for the fair allocation of freshwater resources. Councils can incorporate this into their planning to implement the new NPS-FM. It will be necessary to address transitional issues, and Māori rights and interests in access to, or benefiting from, the commercial use of water resources.

Submissions we received through the Essential Freshwater consultation will feed into this process over the next 12 months. Any resulting proposals will be subject to further consultation, and the public will have another opportunity to consider them before any changes are made.

Water allocation issues in this summary are:

- water allocation – water takes
- nitrogen allocation
- water bottling.

Water allocation – water takes

A very clear theme is that the Government needs to give effect to Māori rights and interests in freshwater. Some iwi organisations suggest progressing this by co-designing an allocation discussion document as Te Tiriti o Waitangi (Treaty of Waitangi) partners. Others request talks with ministers to discuss matters such as mechanisms that prioritise allocation of water volumes for use by iwi, hapū and their whai rawa enterprises.

There was related opposition to an approach that does not address allocation to iwi. For example, Te Rūnanga o Moeraki notes the public engagement process is not consistent with the requirement of Te Tiriti o Waitangi (Treaty of Waitangi) partnership: 'The freshwater crisis in our takiwa is concerned about water quality and allocation. Issues with water quality impact the ability of our hapū to exercise its rights and interests in water, including rangatiratanga and kaitiakitanga, as much if not more than issues with water allocation and over-allocation.'

There is criticism of regional council decision-making on freshwater management. Iwi and hapū are not being involved in setting freshwater limits mainly because regional councils do not know how to engage with multiple iwi and hapū within a catchment. Submissions suggest councils be compelled to build competency in engaging with iwi and hapū.

Ngāti Rangi states that wording should consistently refer to 'avoid and reverse over-allocation'. It opposes council discretion on timeframes for phasing out over-allocation, noting this needs to be set at a national level so that it is resolved quickly. It also contends 'over-allocation' must be defined in terms of hydrological data and cultural assessments, not on the basis of policy decisions – because hydro takes are excluded from the allocation regime, awa are defined as under-allocated but are in reality considerably over-allocated.

Water allocation needs to be prioritised to users who are the most efficient. Horticulture New Zealand favours methods that encourage collective use of water, and suggests food production and cultivation should have a value separate from irrigation, as vegetables are an essential human-health need.

- Horticulture New Zealand recommends an action plan approach if data indicates outcomes cannot be met using limits within 30 years, or maintained in 30 years. This would enable exploring options beyond limit-setting, and revisiting options and limits to determine whether changes may provide ways to meet outcomes.

- DairyNZ notes many proposals are contingent on significant progress with resolving water allocation policy and longstanding local government capacity constraints.
- Te Tumu Paeroa, the Māori Trustee, expresses a preference to present a-kanohi to the Independent Advisory Panel. It notes the need to avoid further penalising of Māori land owners who have been historically locked out of developing their lands.
- The NES should provide for councils to consider if a new allocation could affect drinking water.
- A farmer notes 'small streams matter', pointing out that a stream classed as 'ephemeral' on his property has been damaged by upstream over-allocation of water takes.
- Deferral of allocation questions may spark a gold rush of consent applications. This is a distinct threat where a local body is farmer-dominated and there is no resource rental.
- Allocation solutions should be tailored to what works for each community of interest.
- Conserving water and reducing water use should be in parallel to allocation, and farmers should be paid direct subsidies to make environmental improvements.
- Concern from councils that allocation policies will need to be revised and replaced by 2023, particularly given the resources put into setting current policies.
- Opposition to grandparenting including the need to define it. For example, having stated: 'Explicit banning of grandparenting needs to be directed and all consent applications treated as new consents', one iwi organisation went on to point out: 'It's difficult to remove its practice if decision-makers deny its existence or [are] ignorant of what it actually is'.
- Why the package does not address allocation. Either resolve the issue or abandon it – polluter pays would be easier to implement than an allocation system.
- Mauri-based understanding of best practice should inform the setting of mauri thresholds that identify clearly what is and is not sustainable.
- Regional authorities will need considerable support when changing allocation practices, as this will be fraught with legal challenge.

Wider issues and observations on water takes

- Strong support for prioritising the health of freshwater, but mixed views on Te Mana o Te Wai – mostly supportive with some querying definitions (for example, no definition of 'health and wellbeing of waterbodies'). Others point out the ethos behind it is not carried through to decision-making.
- Iwi organisations support including Te Mana o Te Wai. They seek changes to address water allocation issues including: a co-governance model to provide for mana whakahaere, an overarching NPS to ensure water is protected and restored, rolling out Te Tiriti o Waitangi (Treaty of Waitangi) settlement statutes to apply nationwide.
- Support for the Waitangi Tribunal's Wai 2358 report on freshwater and geothermal resources.
- Many iwi organisations support Kāhui Wai Māori's recommended moratorium on additional consents for water takes and discharges for 10 years.
- Support for FLG's view that Māori rights and interests need to be resolved before allocation.
- Unreasonable timing of consultation process for councils. More consultation is sought.
- Concern from the rural sector about the costs of any significant land-use changes.

Nitrogen allocation

- Set up taxpayer-funded funds to purchase Nitrogen Discharge Allowances (NDAs) as per the Lake Taupō scheme. Then land owners can do as they wish as long as any adverse effects don't materially affect their neighbours.
- There is little to address contamination of groundwater; strongly urge groundwater quality is addressed.
- Treating water (eg, chlorination) is a subsidy for polluters.
- Nutrient allocation processes are useful tools to set limits on nutrient levels.
- Clarification sought on point source vs diffuse discharges, particularly regarding: leakiness of gravels or pumice soils; poorly drained soils with overland pathways (eg, peat soils with high groundwater). Diffuse loss particularly into shallow and short direct groundwater pathways could still effectively be considered point source as it is traceable.
- All human activity has an environmental footprint, yet this does not give legitimacy to excessively high contaminant loss.
- There must be recognition of the good work farmers have done without demand to add to or shift existing work for little gain. Prioritise mitigation actions according to risk and a gradient of importance. Some mitigation needs to occur immediately where risk of loss and downstream impact is known to be high. Other mitigation to abate low-contaminant loss risk can be progressive, tailored to the farm and sub-catchment.
- National oversight and funding is clearly required for robust models and tools for assessing contaminant losses. If regulators persist with allocating nutrients to land users, a key priority is improving (or replacing) Overseer with a more accurate, fit-for-purpose, transparent and accurate means of determining nitrogen losses.
- Opposition to input controls as reliant on inflexible farming systems, and easily circumvented.
- Reasonable timeframes are needed for farmers to reduce nitrogen leaching.
- Allocation must allow for Māori land development.

Wider issues and observations

- Opposition to grandparenting of rights to discharge contaminants. Several submitters believe a grandparenting approach is proposed. This prompted concern that good performance will be penalised while poor performance continues.

Water bottling

There are no proposals about water bottling in Action for healthy waterways, but submissions on this topic will be addressed through two other ongoing work programmes: Treasury's review of the Overseas Investment Act 2005; and work led by Hon Eugenie Sage to introduce a container refund scheme in New Zealand.

Specific issues

- A local government submission asks the Government to consider regulating water use for bottling in the NES for freshwater.

- An iwi organisation suggests changing regional policy statements, in collaboration with iwi and hapū of the region, to address allocation issues including water bottling. This would: enable a moratorium on all new water bottling proposals; require water bottlers to contribute to groundwater systems research; enable reviews of existing water-bottling activities and their effects on the dynamics of groundwater systems, connected surface waterbodies and freshwater ecology; and require large-volume water users (including existing water bottlers), horticulturalists and farmers to develop baseline water-efficiency plans within an appropriate timeframe.
- An NGO noted that ‘members draw a clear and moral distinction between extraction of freshwater for the creation of private profit through the development of private goods be that food or manufacturing, and extraction for direct sale. We consider the latter to be theft of a public good.’

Wider issues and observations

- Most submissions support a ban on commercial water bottling. Some refer to concerns about single-use plastic bottles.
- Several identify overseas water-bottling companies as the problem, and suggest that foreign companies should not be allowed to export New Zealand water.
- Some point to the lack of a charge on water bottlers, saying this explains why water-bottling companies take no responsibility for recycling.

Submissions on water metering regulations

The Resource Management (Measurement and Reporting of Water Takes) Regulations 2010 established requirements for measuring water use. Consented takes over five litres per second must have an appropriate, independently verified measuring device and provide a continuous record of water-use data to their regional council at least annually. This feeds into NPS-FM requirements to account for all takes and sources of contaminants – critical to inform regional planning and setting limits.

Since its implementation, data quality and timeliness have proven problematic, reducing councils' ability to use the data effectively for planning or compliance, monitoring and enforcement. We propose to amend the regulations, making the real-time collecting and transmitting of water use to councils mandatory.

Overview

In total, 65 submitters comment on proposals to amend the regulations. This comprises:

- 46 unique individual submissions
- 19 submissions from organisations.

Specific issues and themes

- Overall support, in full or in part, for the proposed changes.
- Cellular coverage to enable telemetry is patchy across New Zealand.
- Cost of implementation.
- Exemptions from telemetry requirements.
- Telemetry alone not solving the data quality issues presented.

Overall support, in full or in part

There is general support for the changes, with very few opposing the changes in principle. Some support is emphatic, while partial support is due to the costs or logistical challenges of implementing telemetry.

Those in support are diverse, encompassing organisations representing the primary sector, local government organisations, environmental NGOs, Māori-affiliated organisations and individuals.

A few call for more stringent rules, namely mandatory telemetry of all takes (rural and urban), or a daily volume threshold on top of the proposed rate threshold (ie, greater than five litres per second) for compulsory telemetry.

Patchy cellular coverage

A significant number are concerned about cellular coverage in their area, arguing this means telemetry is either technically not feasible or too costly for consent holders.

These submissions are mainly from the primary sector and concerned individuals.

Cost for consent holders

A wide range of submitters note the cost of implementation for consent holders, especially for farms with a number of water takes, those with older metering equipment that would be difficult to retrofit with telemetry, and those with unreliable cellular coverage, meaning other options (such as Satellite Internet) would be required. Several outline how the costs for consent holders will vary from region to region.

A few local government organisations comment on this point. One district council suggests that central government should consider supporting individual consent holders by lowering costs of telemetry units and operational contracts via bulk negotiation with service providers. Another notes that costs to community water suppliers need specific consideration and advises the Ministry to work closely with such entities and avoid disproportional negative effects on those communities.

One substantial submission from a farming industry organisation calls for further consideration of annual consent holder charges defined by regional councils for data management and monitoring. The financial needs of regional councils in this sphere will be variable but are likely to be greater where consent holders have less ability to meet additional costs.

A few suggest that central government should set up financial support for small communities and consent holders lacking resources to meet new requirements, particularly during the set-up stage.

On the benefits side, submitters note the amendment will save costs for consent holders with the submission of real-time reports to regional councils, ultimately saving time and resources. Industry bodies also note better data collection for water takes will promote understanding of water use. This is likely to allow new users to access the resource or to facilitate business expansion.

Exemptions from telemetry requirements

A number of submitters, concerned about the cost or logistics of installing and maintaining telemetry, request exemptions. They would like this to be at the discretion of regional councils.

A few substantial submissions from farming industry organisations propose regional councils should be able to determine how telemetry requirements are rolled out over time.

These submissions are mainly from the primary sector and concerned individuals.

Telemetry not solving data quality issues

A small subset of submissions point out that without good council systems, quality control and good system design, telemetry can still produce low-quality data.

Capacity building

A variety of submitters, including farming industry bodies, NGOs and a district council, highlight that the benefits of telemetry can only materialise if regional councils can manage and use the data effectively. This involves high costs, particularly for the set up. Several propose that central government set targeted funding mechanisms for extra council staff and equipment.

A substantial submission from an iwi trust stresses that councils should involve iwi authorities in data quality auditing and compliance checks.

Further national direction

A number of organisations highlight the need for more central government guidance and nationally consistent data management standards. One of the most substantial submissions notes the need for robust guidance on how regional councils deal with data providers. This is to ensure data providers are offering services in a way that aligns with industry standards for data management.

Another substantial submission calls for more attention to consistency in reporting on water takes across regions. They ask the Government to lead nationally consistent data collection and reporting standards. This would enable regional councils to publish online data on telemetry-based water takes that is comparable and allows adequate national assessment.

Overview

Submissions are consistent across local government, individuals and industry bodies in terms of full or partial support for the proposed changes.

Most concerns are about cost and logistics. NGOs are consistent in their support, without generally mentioning cost or logistics. One farming industry body advocates mandatory monitoring of all water takes, rural and urban. One regional council proposes adding a daily volume threshold on top of the proposed rate threshold (ie, <5 L/s) for compulsory telemetry. Only a few submissions clearly dismiss the proposal based on its cost.

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