Please find attached Timberlands Limited submission on Action for Healthy Waterways, as a submission on:

1. Draft NPS-FM
2. Proposed NES-F
3. Draft stock exclusion Section 360 regulations.

Timberlands wishes to be heard in support of this submission which responds to the “Action for Healthy Waterways” discussion document questions. It is submitted as a document rather than as online responses to meet governance requirements.

We note that there are no questions on section 9 of the discussion document. We consider section 9 to be crucially important to provide good information to support making good decisions. This requires that responses to issues have a good match to the nature and scale of the problems. Responses to section 9 have therefore been included in answers to other questions, where possible.

**Background**

Timberlands Limited manages 190,000Ha of plantation forest in the Central North Island. A significant part of the tree crop that Timberlands manages is owned by the New Zealand Super Fund. The underlying land is mainly owned by CNI Iwi Holdings Limited.

Timberlands interest is in managing the land to support not only valuable crops of trees – a sustained yield over a long time horizon, but also to meet a number of sustainability functions: environmental, social and cultural.

Timberlands holds Forest Stewardship Council (FSC) and Responsible Wood (also known as PEFC) Certification which requires active environmental management, including the protection and enhancement of water resources. These voluntary global schemes provide markets with an eco-label that demonstrates wood products have been sourced from well managed forests. More can be found at [www.fsc.org](http://www.fsc.org) and [www.pefc.org](http://www.pefc.org) (or [www.responsiblewood.org.au](http://www.responsiblewood.org.au)) respectively.

**General response to the proposals of the Essential Freshwater package**

Timberlands strongly supports the three objectives of the Essential Freshwater Programme, but has significant concerns about aspects of the methods achieve them, some of which are as a result of their sequencing.
Proposal as a whole (Q1-3)

1. Do you think the proposals set out in this document will stop further degradation of New Zealand’s freshwater resources, with water quality materially improving within five years?

The NPS-FM approach of setting limits and allocating will not stop further degradation due to N leach. Nor is it an appropriate remedy to transfer the costs of managing this contaminant from the main source onto other land users. “Hold the line” followed by some form of allocation will inappropriately transfer costs from polluters to other land users. The proposals are unlikely to halt further degradation.

The appropriate approach would (1) identify instream and groundwater NOF needs; (2) identify in a broad sense the contribution of various land uses to those; (3) identify whether the existing land use patterns do, or can realistically meet the NOF limits; (4) if they can, use a farm plan change-of-practice approach. If there is no realistic prospect of the NOF being met with (e.g. as in Lake Rotorua) decide how to remove some/the high risk activities from the catchment.

An inappropriate approach would complete steps (1)-(3) then persevere with allocating contaminant limits to individual properties, when it is clear that the existing land use mix cannot meet the limits. An allocation approach will not be effective in stopping or reversing degradation, particularly not in five years.

Allocating allowances requires that councils try to work out exact attribution of the exact amount of N in each catchment. It is a resource-intensive distraction from the main problem, which has been clearly identified as being significant expansion of the area of dairy farming, a high leach activity – mainly in the last 20 years. To require that regional policy focus on complete catchment accounting for allocation will distract attention from this very obvious problem into a drawn-out no-win argument over minutiae. Meanwhile the very obvious problem remains substantively unaddressed.

Limit setting and allocation policy design will divert attention from the main issues of land use beyond assimilative capacity. To address these issues does pose an existential threat to some dairy farms, so it is politically difficult to tackle. However, relying on an allocation process to sufficiently reduce dairy leach outputs enough will not work. It will just distract and delay.

If the intent is to improve water quality within five years then policy that immediately commences controls on the high risk high intensity activities is required. The limit setting and allocation policy design will take an enormous amount of time and effort to describe and assign pollution limits to medium or low risk activities whose contribution to the N leach problem is small.

A concept of what is regarded as high, medium or low risk activities for N leach would be useful. This could be used to create simple threshold tests that is sufficient to know where scrutiny is needed and stocking rates could be a good proxy measure for these threshold tests.

Full-on catchment accounting sets in train behaviour that is perverse to the outcome sought. We have witnessed this behaviour already in the Waikato and Bay of Plenty regions. It will (1) turn what should be a liability (N leach) into an asset, thus incentivising landowners to secure the maximum amount; (2) Initiate a market and gift the units of trade to the highest polluters via grandparenting (the natural consequence of “hold the line”) will further incentivise landowners to view their former liability as an asset (3) Create a market for its trade. The previously socialised externality is not now an internalised liability. It is an asset. (4) Setting the market cap stabilise but will not drive down leach. It will drive behaviour of “use all the leach capacity at all times”. (5) If the cap and trade has a
sinking lid, this will trigger drawn-out arguments as to whether the numbers are correct, which delay any action.

Behaviours 1-5 above do not support the material improvement of water quality. Especially not within 5 years. This has been the case in the Waikato and Bay of Plenty regions where we operate.

The only attempt to run a full catchment accounting system is in the Lake Rotorua catchment Plan Change 10—see graph below. Each dairy farm requires about 10 TN/year. Rotorua urban area (= 55,000 residents plus a substantial tourist load) has 30 TN/year. The ≈6000Ha of Maori and Settlement land (forest, bush and scrub, very low intensity use) effectively received nil allocation, despite a significant proportion of it being capable of arable use. The legal challenge by these landowners to secure 20T from a grandparenting regime has taken about four years and cost millions (if counted for all parties to the process). Meanwhile little progress on reducing N leach by the main sources has been made.

**PPC10 - distribution of ability to discharge N versus land area**

![Graph showing distribution of ability to discharge N versus land area](image)

Expert science reaction to the proposed allocation approach (a cap and trade scheme) is that we do not have the science to support such a catchment accounting scheme:

“The problem is that the complex process of designing market-based trading schemes is a source of first delay, and then uncertainty mixed with confusion. Delay happens because ‘allocation’ of permits within the cap to use or pollute a resource is difficult. Determining allocation means determining who gets what—and is a profound argument of fairness and equity reaching into the past and the future.

“Even more than setting the cap, determining allocation requires science that we typically don’t have. It is a stretch to say we can account for all the freshwater flows across New Zealand. At catchment scale we’re not too bad off, but can we always do this fairly for each farm?

“Problems with our modelling frameworks make accounting for nutrient pollution even harder. For every three or four units of nitrogen that leaches from the root zone in the Overseer model, only one typically shows up downstream in water. We lack frameworks for determining where this nitrogen went, and whether anyone should get credit for its removal prior to causing impacts on our freshwater.

[1](https://www.sciencemediacentre.co.nz/2019/05/07/freshwater-cap-and-trade-scheme-expert-reaction/)
“These are the factors that cause confusion in cap-and-trade schemes. If too much uncertainty or complexity undermine the ability of managers to make good decisions at the scale of their operations, then little is resolved. At the scale of farms, rather than giant power plants, this is almost sure to go badly.

“The only hope for cap-and-trade schemes, ... would be that the design of the market results in greatly improved information on our water resources, down to the scale of management decisions.”

Each main land use type has a contaminant profile. Forestry’s issue is sediment. Forestry already has a specific NES to address this, using a change-of-practice approach coupled with instream water quality requirements. The forestry NES-PF requires forest managers to develop and follow erosion and sediment management plans for high risk operations (earthworks and harvesting), particularly in high risk erosion areas.

Drystock issues are sediment, P and pathogens. These could be dealt with through farm plans that require erosion control and that address critical source areas as use of well-designed farm plans that match actions with effects and that are site appropriate will improve water quality for what are mainly overland flow issues (P, pathogens, sediment, some N).

Dairy issues are P, pathogens and N leach. The NPS-FM proposal is to allocate N leach capability. This does not reduce this contaminant and will not materially improve water quality, for reasons explained above.

N leach to groundwater issues are a strongly correlated to high land use intensity. These are likely to require intensity responses and controls rather than more general land use management. They may not lend themselves to the Farm Plan approach. The NPS and NES approach is set out as:

“The proposals here are intended to better enable councils to set limits for a sustainable level of nitrogen (and other pollutants) in each catchment. To reduce nitrogen discharge levels to meet those limits, there needs to be a system for allocating allowances to discharge nitrogen into water.

Councils could focus on obvious responses that tackle actions that are known to have a strong correlation to contaminant discharge e.g. stock out of waterways, lined effluent ponds, effluent irrigation only in conditions of soil water deficit, effluent system management processes to avoid blowouts. To do this requires more resource into interventions in both education and compliance, and a change in culture in agriculture so that poor practice is regarded as unacceptable rather than unfortunate “accidents”.

2. Do you think the proposals will bring New Zealand’s freshwater resources, waterways and ecosystems to a healthy state within a generation?

The legacy groundwater issues created by dairying will not be resolved in a generation, because the aquifer residence time exceeds a generation (e.g. Canterbury) so even if most dairy pollution was stopped now it would be longer than a generation before it was “healthy”. The proposals only vaguely allude to “change in land use”, but this will be the only successful option in some catchments. Implementation of this approach will require considerable political will. However the alternative is to cripple all land uses without achieving a successful outcome.

Surface water issues could largely be improved in a generation, provided the measures used to change elements of land use practice are:

1. strongly correlated to effects in water,
2. well designed and
3. well executed.
There is a substantial amount of science information on cause and effect links, however it is often in academic articles. It must be translated into lay language and made readily available. In that way it can be better used to incentivise best practice and empower all land use sectors to take ownership of their specific environmental issues. Strongly support “investing in developing and disseminating solutions”. Also strong support for requiring known solutions to be used. A number of these are procedural e.g. contingency planning and warning systems for effluent irrigation.

However in the discussion document much of the emphasis for science appears to be on characterising the water environment at a catchment scale, particularly to define bottom lines. Although defining bottom lines has value in identifying where the problem areas are and to assist in directing effort to the more significant problems, it should not be an objective to attempt full catchment accounting for attribution purposes. This is not technically possible. To do so also distracts from meaningful pollution reduction action. Policy approaches that align with polluter pays would be much more likely to drive pollution reduction behaviour than allocation will.

3. What difference do you think these proposals would make to your local waterways, and your contact with them?

If an allocation approach is continued there will be little change to waterway health. The diagram below indicates the difficulties in attempting to create precise and accurate allocation when the contributions to allocation are only able to be imprecisely modelled. Better outcomes would be likely via an approach that concentrates on farm plan change-of-practice, combined with some land use change to reduce intensity.
10. Impacts and implementation (Q4-6)

4. What actions do you think you, your business, or your organisation would take in response to the proposed measures?

Forestry operations are already governed by the National Environmental Standard for Plantation Forestry (NES-PF) which has heavy emphasis on effects of forestry on waterways, in particular sediment and sediment control. We do not accept the view of the Freshwater Leaders Group that changes to the NES-PF are required in order to stop poor forestry practices. We consider that this mistaken view is predicated on legacy issues that the NES-PF cannot reach back in time to correct. Nor can it reach back to correct inadequate regulatory monitoring and enforcement.

The NPS-FM will potentially require greater emphasis on water quality monitoring (in addition to the compliance monitoring already undertaken) to prove compliance with water quality attribute limits once these are confirmed. It is currently unclear how this monitoring will take place and who will be expected to undertake it.

The NES-F would logically run parallel with the NES-PF. I.e. foresters use the NES-PF and farmers use the NES-F, noting that the performance requirements in the NES-PF are more stringent and will lead to higher environmental outcomes than what is presently proposed in the NES-F.

5. What support or information could the Government provide to help you, your business, or your organisation to implement the proposals?

Making good decisions depends on having accurate and reliable information. Efforts to improve the range and quality of the data that informs the decisions of land users, industry, and both branches of government are welcomed. The discussion document identifies these topics:

- including environmental data in farm monitoring, collection and reporting
- improving data quality
- extending the Farm Monitoring Programme

These all improve information on attribution. However the biggest difference will be driven by having solid agreed information on actions that land managers / farmers can take to improve environmental performance. Modelling\(^2\) may assist with insights into the effect of high intensity farm systems, but of far more value to a fast improvement to environmental outcomes is good on-farm risk management. E.g. avoiding effluent irrigation failures.

With regards to foresters the continued monitoring and support of the NES-PF, in an equitable manner as proposed above, as the NES-PF already places significant emphasis on good forestry practices for high risk operations in high risk areas.

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\(^2\) “Government will expand the range of farm systems and conditions modelled, connections between support tools, and accelerate the recognition of new, more environmentally-friendly technologies in tools, such as Overseer®.”
6. Can you think of any unintended consequences from these?

Much effort seems to be focussed on modelling to support NPS-FM allocation policy. Cap and trade (purpose of allocation) will drive behaviour contrary to environmental improvement. E.g.: Where Overseer is used to set a farm nitrogen loss limit or determine compliance with nitrogen limits, there are significant incentives to deliberate manipulate Overseer modelling results to increase the output.

Decision Support Systems such as Overseer are being misused. Overseer is only competent for single time relative comparisons that identify less or more, but the apparent precision of the outputs is seducing users and policy makers into regarding it as accurate for catchment level analysis. It is not.

The proposal to “hold the line” will involve issuing resource consents for existing activities that have high contaminant discharge rates. These may be as section 9 land use consents, contingent on some management practices being carried out. Or they may be as section 15 discharge consents. If it is the latter then that is a massive wealth transfer to the land uses doing the most environmental damage, which is entirely inappropriate.

“Hold the line” will directly interfere with the ability to carry out structural reform in a way that does not accumulate future use rights (KWM recommendation 22a). The contaminant allocation process will create a private good from what is presently a socialised cost. If these are distributed according to “hold the line” this will secure what was a problem in the commons instead as a valuable resource into the hands of a few. This privatisation process is already underway. In the Waikato region Wairakei Pastoral is seeking (non-notified) consent to discharge over 520T of N leach to ground. This a non-complying activity in the proposed WRC PC1 for which hearing have just concluded. If WPL secure this consent it will severely constrain other approaches to manage the N leach issue in the upper Waikato. It is the privatisation of a public capacity to respond to a threat. It will secure rights to the holder and any attempt to modify this consent will undoubtedly spend a lot of time in court.

If a cap and trade scheme is introduced, the information to support it needs to meet the six characteristics of efficient property rights: Duration, Divisibility, Flexibility, Exclusivity, Quality of title, transferability. There is no information or methodology (e.g. accurate models) available at present that would allow such a right to be defined.
4. Set and clarify policy direction

Water commission (Q7-8)

7. Do you think it would be a good idea to have an independent national body to provide oversight of freshwater management implementation, as recommended by KWM and FLG?

8. Do you have any other comments?

It would not be a good idea to add another work-around. Instead the existing relevant government agencies must be required to fulfil these functions.

While it is tempting to start with a clean slate by creating yet another body, it would be far better to get the present ones to do the roles identified in the discussion document as specific requirements of the agencies. This does require that politicians support the civil service and ensure that government agencies do not descend into partisanship. Far better that agencies provide free frank and fair advice and have the technical resources to carry out the roles listed below than to create a new quango that then has overlapping responsibilities with the existing agencies. If the bodies whose role it would appear to be – the EPA or the Ministry for the Environment - lack the skills, resources or political will to fulfil this role then it is up to the ministers to ensure that they have secured the necessary resources and perform the role adequately. It’s not clear how adding yet another oversight role will improve this situation.

Of the list of suggested roles a number are already done by MfE: 1, 2, 3, 5, 8, 11, 12 and 13.

PCE could (4) identify and take recommend action to respond to any capacity and capability gaps within the system. Of the remainder some could be the role of MPI (6 – in conjunction with MfE) (7), some are of regional councils (9) including their special interest groups (SIGs) (6) (8) and (10)

Te Mana o te Wai (Q9-12)

9. Do you support the Te Mana o te Wai hierarchy of obligations, that the first priority is the health of the water, the second priority is providing for essential human health needs, such as drinking water, and third is other consumption and use?

Yes

10. Do you think the proposals will have the desired effect of putting the health of the water first?

No. The NPS-FM cap and trade allocation approach requires accurate attribution of total catchment activities to NOF objectives in waterways. However there is insufficient information to make such connections between aspects of land use and in-stream outcomes. Rather than full-on accounting the resources required to make this connection would be better used on:

1. removing some intensive land uses from catchments that are far from meeting necessary water quality objectives
2. requiring and supporting behaviour changes that improve trend direction.

11. Is it clear what regional councils have to do to manage freshwater in a way consistent with Te Mana o te Wai?

Not entirely. It looks as though the same processes that have been used to develop plans so far continue to be used, but that there are now three sequential steps to consider.

12. Will creating a long-term vision change how councils and communities manage freshwater and contribute to upholding Te Mana o te Wai?

Not unless the issue of allocation has been resolved or abandoned. Polluter pays would be much less fraught to implement and would make more progress than allocation will be able to.
New planning process for freshwater and revised NPS (Q17, 40-42)

17. Do you support the proposal for a faster freshwater planning process? Note that there will be opportunity to comment on this proposal in detail through the select committee process on the Resource Management Amendment Bill later this year.

Do not support the proposal for a faster freshwater planning process unless there are some very thorough checks and balances introduced into plan development.

Proposed changes to the RMA for faster freshwater planning is to replace the two-tiered hearing process with a single independent hearings panel. To prevent this process being overwhelmed by heavily resourced sector advocates would require that the original plan development process is subject to comprehensive legally binding criteria to prevent it being dominated by well-resourced and politically powerful sector(s). Absent of such scrutiny a one-step process is not appropriate. A prime example is the N leach allocation process used for Lake Rotorua which through a “collaborative process” grand-parented the rights of 45% of the N leach available to 12% of the land area, severely disadvantaging Māori and settlement land in the process.

There is no doubt that an appeal is slow and very expensive and to be avoided where at all possible but in this case the Council was determined to stick with this inequitable allocation. The Council hearing partially addressed this injustice and required a reallocation to Te Ture Whenua land. The Environment Court appeal has required a further reallocation to Settlement land rather than constraining land to forest in perpetuity, independent of its capability (confirming that Kaitiakitanga, whanaungatanga and rangatiratanga require more than some token consideration of mahinga kai).

The process proposed would not provide this reconsideration process. In a situation where a party is not even invited to be part of the collaborative process (as was the case for CNI with BOPRC for Plan Change 10, despite owning 8% of the catchment land) the outcome is then reliant on the independent panel. The risk is that well-resourced entities can front load rather than waiting to appeal, but that it is still a case that those with the most resources prevail.

18. Does the proposal make the roles and responsibilities between regional councils and territorial authorities sufficiently clear?

Yes

40. Are the purpose, requirements, and process of the National Objectives Framework clearer now? Are some components still unclear?

Yes the proposed National Objectives Framework is now clearer. In particular we support the classification of streams based on Climate Topography and Geology (CGT) into 12 discrete units, drawing from NIWAs River Environment Classification (REC) stream reach mapping.

41. What are your thoughts on the proposed technical definitions and parameters of the proposed regulations? Please refer to the specific policy in your response.

Some measurement techniques are not going to be as accurate as the NOF requires. The NOF accuracy therefore may need to be modified to reflect the capability of the instruments.

Support the use of Visual Clarity rather than Turbidity as the measure for suspended fine sediment - based on the capabilities of existing equipment. Although there appears to be some promise for automated turbidity monitoring, the current turbidity probes are too expensive for any individual landowner to purchase and are prone to going out of calibration. NIWA has expressed serious concerns regarding use of Turbidity (Hughes et al 2019). Visual Clarity is easy to measure (NIWA’s SHMAK clarity tubes) and thus supports active local community level or landowner engagement in
water quality monitoring. Turbidity could be a valuable measure if it can be strongly linked through sampling to clarity and sediment load (TSS).

The application of both the NOF Table 10 and Table 18 – Deposited fine sediment is problematic. The implied precision exceeds the reality of field measurement. Turbidity measurement repeatability between different makes of NEMS compliant turbidity probes (in calibration) is no better than 10%.3

Extract (page 6)
Our finding that nephelometric turbidity measurements are instrument-dependent, even for sensors of the same design,... In particular, treatment of nephelometric turbidity as an absolute quantity should be abandoned. ... We recommend that, instead of reporting FNUs (or other turbidity unit), the turbidity record should be converted to the variable of interest – such as SSC, or visual clarity – based on empirical (local) correlations.

If MfE does use turbidity then bottom line and all other fields should be expressed as whole numbers, not fractions.

Amend Table 10 to read: “Turbidity to be measured at median flow or below”. MfE identifies as that turbidity is a highly correlated with flow, and during flood flows will spike to values above 100 or even 1000 FTUs, turbidity should not be measured during “Events” (flood events).

The NOF values in Table 18 for Deposited Fine Sediment should be rounded to the nearest 5%. Here the implied precision is greater than the reality of field measurement. Repeatability of Deposited Fine Sediment measurements is not better than 5% and perhaps only 10%.

Definitions for subpart 3. It would make sense that the definitions for bank full discharge and bank full width instead are the definitions in the NES-PF, which has already gone through a very rigorous science, public and legal development process.

42. What are your thoughts on the timeframes incorporated in the proposed regulations? Please refer to the specific policy in your response.
No comment

5. Raise the bar on ecosystem health
New Maori value and threatened species values (Q13-16)

| 13. Do you think either or both of these proposals will be effective in improving the incorporation of Māori values in regional freshwater planning? |
| 14. Do you foresee any implementation issues associated with either approach? |
| 15. What are the benefits and impacts of either of these approaches? |
| 16. What implementation support will need to be provided? |
No comment

Hydropower exceptions (Q19)

| 19. Does the proposal to allow exceptions for the six largest hydro-electricity schemes effectively balance New Zealand’s freshwater health needs and climate change obligations, as well as ensuring a secure supply of affordable electricity? |

Regarding security of supply and climate change obligations to use non-carbon power, rather than entirely playing this off against freshwater health needs, a lot more could be done to reduce our reliance on hydro as peaking capacity, such as on sophisticated time pricing of electricity and adding other sources of power. However that involves different legislation. No further exceptions for other hydro schemes should be added however.

N, P S attributes (Q20, 21, 30-35)/ Ecosystem health attributes (Q20, 21, 39)

20. Do you think the proposed attributes and management approach will contribute to improving ecosystem health? Why/why not?

Control of actions that contribute to water quality decline, active monitoring of those actions, and enforcement are all required. Setting attributes and coming up with a management approach identifies which waterways need the most active management and provides for priority setting but water quality will only improve if this is followed through with requirements for action by those whose activities contribute significant amounts of contaminants. To improve ecosystem health requires active regulation and controls on intensive land use as self-management is not working.

Temperature has not been included in the NOF attributes. This may be an oversight as (high) temperature has a compounding effect with these, as can oxygen levels.

21. If we are managing for macroinvertebrates, fish, and periphyton, do we also need to have attributes for nutrients that have been developed based on relationships with aquatic life?

MCI, fish and periphyton are aggregator indicators, so in theory attributes that have been developed based on relationships with aquatic life won’t also be needed. The exception is for N leach because the cause has a large temporal delay before its effect is felt. For N leach the nutrient must also be measured, and measured on land or just below land (shallow groundwater) as well as in water.

New bottom line for nutrient pollution

30. Do you support introducing new bottom lines for nitrogen and phosphorus? Why/why not?

If the purpose of bottom lines is to identify which waterbodies need attention and give a rough order of magnitude of the problems, yes. But attempts to use these for a full-on catchment accounting exercise, no. This is because there are currently no realistic tools to accurately attribute contaminants to particular land use activities. An approach that will provide far quicker results is to require performance that avoids actions known to be strongly correlated to poor water quality outcomes e.g. correctly sized effluent ponds, correct application of effluent, management of effluent systems to get warnings about malfunction, retirement setbacks (for example as per the NES-PF)

31. If this proposal was implemented, what would you have to do differently?

Nothing. Forests have a very low nutrient output.

32. Do you have a view on the STAG’s recommendation to remove the ‘productive class’ definition for the periphyton attribute?

No comment

Reducing sediment

33. For deposited sediment, should there be a rule that if, after a period (say five years), the amount of sediment being deposited in an estuary is not significantly reducing, then the regional council must implement further measures each and every year? If so, what should the rule say?

A number of factors contribute to sediment deposition in estuaries. They include sediment delivery from a range of current land uses, the legacy effects of past land uses (e.g. Kauri logging and gold mining) which have caused a build-up of sediment in stream channels that is still working its way from streams out to the estuary, the effects of flood protection and land drainage schemes and the
effects of major storm events and deposition, and stream hydrology changes as a result of riparian planting.

Support deposited sediment measures in principle. Support that deposited fine sediment is managed under Appendix 2B (attributes requiring action plans) rather than being a hard limit under Appendix 2A, because of the complexity of catchment processes. Note the need for sound peer-reviewed science to support the measures, to ensure any controls and attribution of sediment delivery to specific landuse. I.e. Do not support novel modelling techniques such as CSSI for which repeatability of results and explanation (and corroboration with land use activity) of results are both lacking.

34. Do you have any comments on the proposed suspended sediment attribute?

Support that the proposals take into account natural erosion processes and recognise that natural levels of sediment in rivers vary across New Zealand. Support that numerical attribute states need to consider natural processes and be tailored to the specific freshwater body type in its catchment context.

Agree that suspended sediment is one of the key ecological stressors in many waterways in New Zealand (for plantation forestry sediment is the most significant potential contaminant). Support measures based on medians - recognising that suspended sediment levels are extremely variable between catchments and over time in the same catchment?

Concern about the accuracy of the proposed attributes and bottom lines for SS (turbidity).

Concern that the information provided makes it difficult to ascertain how the proposed suspended sediment attributes and bottom lines relate to current measured levels. Knowing this is important as it will enable land users to gauge how the measures relate to current levels. One information source is the ‘Erosion modelling to support proposed sediment attribute impact testing 2019’ which shows the expected annual mean sediment reductions required to meet proposed suspended sediment bottom lines provides. However this shows some unexpected results, such as fully native catchments requiring significant suspended sediment reductions and eroding hill country catchments indicated as having no improvement required. It appears that there may be errors in the proposed bottom lines, the modelled current sediment loading, or both. Further work looks to be required.

Concern that an unavoidable sediment increase at harvest time, which cannot be fully mitigated even with best practice, may not be accommodated. Note that this unavoidable spike is partially alleviated by use of medians (or a landscape approach for a large and multi-aged forest) rather than continuous measurement.

Seek clarification on how the measures are to be monitored and enforced spatially and over time (periodic monitoring at periodic pre-set times, or event-driven or continuous?) noting that each will give very different results.

Concern that the modelled data appears to have quite variable breaking down of catchments. In some places very large rivers with variable sediment loading (such as the Waikato and Waihou) are modelled as just one catchment; in other locations data is split down to quite small sub catchments. This coarse scale in some instances will affect ability to figure out the necessary responses to sediment loading.

Support clarity as being a more accurate and economically accessible measure than the proposal to use FNS (turbidity as a measure), which has high cost reported high levels of variation between

4 mapped dataset provided on the NIWA website
meters. NIWA: ... nephelometric turbidity measurements are instrument-dependent, even for sensors of the same design, and sometimes the same make and model... treatment of nephelometric turbidity as an absolute quantity should be abandoned.

35. If this proposal was implemented, what would you have to do differently?

It is possible that the level of monitoring required to demonstrate compliance with agreed attribute states (NPS FM) would change. However the discussion document and background material provides insufficient detail to allow a full assessment of what would be required. Variables include:

- Spatially. Is monitoring required in all waterways where activities are undertaken or just representative locations?
- Over time – periodic sampling vs continuous measurement
- Methodology - monitoring clarity is simpler and cheaper (and more accurate) to implement than turbidity monitors
- Attributes required – whether all attributes will be required to be monitored everywhere, or just the attributes of concern for a particular catchment
- Who does the monitoring and who pays
- Quality assurance requirements – NEMS level of performance

Depending on the answers to these questions there will potentially be a significant increase in the level of monitoring required, potentially at significant cost to land users.

Based on monitoring to date, we anticipate that freshwater leaving Kaingaroa forests will easily meet the proposed attributes in almost all times and cases. The exception would be sediment in high rainfall events (where all catchment will fail) after harvest at minor catchment level. Sediment management is the major focus of plantation forestry management and regulation under the NPS FM, which we believe adequately identifies the risk and the appropriate responses to continue to reduce this problem.

Threatened indigenous species

22. Do you support the new compulsory national value? Why/why not?

The construction of the NPS-FM definitions, appendices and clauses creates uncertainty regarding the threatened species that must be protected. The definition does not make a subset of the relevant threatened species for freshwater management but refers instead to the current criteria used to define all threatened species. The national value (Appendix 1A 2) does in part differentiate between species likely to be associated with freshwater and those not. However the entire country will be in one FMU or another, and it is not clear the extent to which the species relies on freshwater: “...may also include specialised habitat or conditions needed”. E.g. how are highly mobile avian species - that do not directly rely on freshwater for food or habitat - regarded? It appears that under NPS-FM 3.6, and 3.7 they could be included. Thus there is potential for very expensive, specialist assessment in NPS-FM 3.6, and 3.7 to clarify which species are considered relevant and how that will affect freshwater management. Clause 3.15 more appropriately requires: “known to contain threatened species” as does 3.17 “any threatened fish species”. It would be more appropriate that the definitions in the NPS-FM made clear that the nature of the threatened species must be relevant to FMU aquatic considerations, rather than relying on an appendix to set that out.


Appendix 1A 2 This refers to the extent to which an FMU that supports a population of threatened species has the conditions necessary to support the continued presence and survival of the threatened species. The basic conditions relate to aquatic habitat, water quality, and flows or water levels, but may also include specialised habitat or conditions needed for only part of the life-cycle of the threatened species.
**Ecosystem health policies (Q23-29)**

23. **Do you support the proposed fish passage requirements? Why/why not?**

Support the proposed fish passage requirements and note that provision of fish passage (1) has been mandatory since 1983 (Freshwater Fisheries Regulations), and (2) the NES PF includes specific fish passage requirements which are more comprehensive and demanding than the ones proposed in the NES-F.

For certainty of regulatory requirements we support that either (1) land used for forest (as defined in the NES-P) exclusively uses the NES-PF and that other land uses use the NES-F or (2) the provisions of the NES-PF for fish passage replace those set out in the NES-F at present.

24. **Should fish passage requirements also apply to existing instream structures that are potentially barriers to fish passage, and if so, how long would it take for these to structures to be modified and/or consented?**

Support the requirement for fish passage to apply to existing instream structures, on the basis that there is (1) a financially manageable staged approach to providing for fish passage for those landowners with a number of structures to remediate, (2) analysis of the effects of any structure replacement programme is done and it concludes – structure by structure – which ones require what (technical) remediation to provide fish passage and (3) a risk: benefit analysis is done to clarify whether the net effect of replacing barriers (e.g. culverts) is more or less harmful to stream stability and water quality than leaving them or modifying them. I.e. Do not support requiring existing stream crossings to have to meet all factors of NES-F 21(1). Very few existing culverts would meet all of the detailed requirements and to make them do so would require an enormous amount of work, cost and result in substantial stream disturbance.

Oppose requiring consent for an upgrade programme as imposing the costs of consent on an activity that will improve ecosystem health will create perverse incentives. Suggest it is a permitted activity provided key conditions are met.

Oppose full discretionary status for culvert construction. This should at most be a restricted discretionary activity. For culverts in plantation forest, the NES-PF should apply instead of the NES-F.

25. **Do you support the proposal to protect remaining wetlands? Why/why not?**

For certainty and to ensure that the nature of the regulation matches the nature of the threat, support that in plantation forests the NES-PF applies and the NES-F does not, thus wetlands in plantation forested areas continue to be managed under the NES-PF. This will (1) avoid the likely confusion of having two sets of rules in two different documents that set out to achieve a similar result, and (2) ensure that the regulations specifically designed for forest practice – the NES-PF - better serve the purpose of managing the threats and potential impacts on wetlands in plantation forests which are entirely different to those of animal-based land production uses.

Support initiatives to protect wetlands, but consider that the minimum size and the setback requirements will act as a strong disincentive to landowners responding positively to this proposal. If the limits were larger and the wetland extent only was fenced (rather than also having a setback), this would still be a significant step forward compared to existing practice.

Consider that the requirement for councils to identify, manage and monitor wetlands down to a size of 0.05ha is extremely ambitious. Forestry experience with SNA mapping to a size of 0.25ha created considerable challenges for Councils. The identification process, particularly for smaller than 0.05Ha with ephemeral characteristics will be very challenging.
Plantation forestry would be disproportionately affected by the NES-F regulations as it is possibly the only productive land use in which nearly all wetlands remain intact. This is as a result of (1) no land drainage, (2) the production tree species grown in NZ not tolerating wet land, and (3) no grazing. As a result wet areas readily regenerate into vegetation that would meet the definition of a wetland during the growing phase of the forest.

Generally the only time that forestry activities affect wetlands is once a rotation: at the time of harvest and re-establishment. The damage is usually limited to minor edge disturbance, which only occurs where health and safety issues mean this is unavoidable, and disturbance at crossing points where there is no alternative route. The impacts of forestry activities on wetlands are managed under the NES PF for routine forestry activities, and Regional Plans for herbicide application.

26. If this proposal was implemented, what would you have to do differently?
No change expected. The NES-PF requires that all wetlands down to a size of 0.25ha are protected and identified on harvest plans. As noted above, wetlands smaller than this will develop wetland vegetation, and other than harvest will be unaffected by forest management.

27. Do you support the proposal to limit stream loss? Why/why not?
NPS-FM 3.16(3) to (5) appears to relate primarily to urban streams.
Support the NES-F rules proposing to protect from stream loss. Stream data makes it clear that urban streams are some of the most degraded in the country, and while the focus has understandably been on rural streams due to the greater length and larger number involved, waterways in current and future urban areas will also contain valuable habitat and instream values. Where urban areas are close to the see the effects of urban modification to streams can result in the entire stream being lost as fish habitat.

28. If this proposal was implemented, what would you have to do differently?
No change. The NES-PF regulations already require this.

29. Do the ‘offsetting’ components adequately make up for habitat loss?
39. Do you have any other comments?
No comment

Swimming (Q36)

36. Do you agree with the recommended approach to improving water quality at swimming sites using action plans that can be targeted at specific sources of faecal contamination? Why/why not?
No comment

Flows and metering (Q37, 38)

37. Is any further direction, information, or support needed for regional council management of ecological flows and levels?
No comment

38. Do you have any comment on proposed telemetry requirements?
This does not significantly affect forest owners.

For the larger water takes getting real time data for water management purposes potentially has significant merit, so requiring the use of telemetry to monitor and transmit this data is appropriate. Requiring live data for smaller takes seems of limited benefit and very expensive. The main purpose for this data is to do water budgeting on longer time frames (generally) than hourly or daily. An
appropriate alternative may be to require the use of non-telemetered data loggers, and require that the data is downloaded and sent in periodically (e.g. quarterly or annually).

6. Support the delivery of safe drinking water

Drinking Water NES (Q43-45)

| 43. Do you agree with the proposed amendments to the Drinking Water NES? Why/why not? |
| 44. Are there other issues with the current Drinking Water NES that need to be addressed? |
| 45. Do you have any other comments? |

No comment

7. Improve ecosystem health by better managing stormwater and wastewater

Stormwater and wastewater (Q46-50)

| 46. Does the proposed Wastewater NES address all the matters that are important when consenting discharges from wastewater networks? Will it lead to better environmental performance, improve and standardise practices, and provide greater certainty when consenting and investing? |
| 47. Do you agree with the scope of the proposed risk management plans for wastewater and stormwater operators? Are there other aspects that should be included in these plans? |
| 48. What specific national level guidance would be useful for supporting best practice in stormwater policy and planning and/or the use of green infrastructure and water sensitive design in stormwater network design and operation? |
| 49. What are the most effective metrics for measuring and benchmarking the environmental performance of stormwater and wastewater networks? What measures are most important, relevant and useful to network operators, regional councils, communities, and iwi? |
| 50. Do you have any other comments? |

No comment

8. Improve ecosystem health by improving farm practices where needed

Restricting further intensification (Q51-53) NES pg 16

| 51. Do you support interim controls on intensification, until councils have implemented the new NPS-FM? Why/why not? |

Do not support interim controls on all types of intensification. Do support controls on further intensification to high intensity uses such as dairy and controls on further intensification within high intensity uses i.e. dairy. The modelled leach range within different forms of dairy practice substantially exceed the range of forestry to dry stock (10 to ≈22kgN/Ha) or within drystock (other than dairy support), so this is the appropriate area to focus on for improvement in the leach parameter - which is the contaminant associated with land use intensification.

To lock all activities at their present level and to restrict any land use change - set out in NES-F clauses 31-32 and subpart 4, clauses 42-28 will reward high intensity, high discharge systems, while penalising low input, low discharge systems. High intensity systems will be rewarded with the
greatest flexibility and choice in how to adapt their farming systems, while low intensity systems will be given virtually none. Locking N leach amount via resource consent will further incentivise high leach and provide large economic rewards to them for trading N leach capacity. This is grandparenting and these are perverse incentives.

The proposal set out in NES-F clause 31(2)(a), responding to the NPS-FM 2014, looks very much as though it would require councils to do per-property allocation. Oppose this because there are no tools available to do this in an accurate way. Consent duration (clause 32) is almost irrelevant as a tool because the likelihood of a replacement consent is almost certain (including RMA s104, particularly (2A)). It would be more appropriate to require consent review conditions that require changes to contaminant loads to meet the water quality changes during the term of the consent, tied to RMA 108AA(1)(b).

NES-F clause 31(2)(b), responding to the NPS-FM 2019, appears to give more scope for avoiding grandparenting. Timberlands supports an approach of using action plans that tackle issues via identifying the key sources and requiring agreed (and enforceable?) action to reduce those, thus setting a trend of improvement, rather than attempting to do full-on catchment accounting attribution and allocation.

NES-F clause 35 is grandparenting. Clauses 35(4)(c) and 36(3)(c) will prevent land use change from forest to other uses. For land owners whose land has been artificially constrained from some uses, such as Settlement land that has been recently returned, this acts as a secondary raupatu, while confirming the “rights” of those who have been creating significant contaminant externalities. Hold the line will create a perverse incentive for land users to maximise their contaminant losses within their current land use, so as to retain land use options. It rewards those who have contributed most to water quality degradation with the greatest land use flexibility, which will sheet directly to land value. By contrast land uses such as forestry, with very low contaminant losses, will be locked in forestry thus losing significant land value on land that does at times have the potential for alternative land use. Removing land use optionality is contrary to NZs laissez faire economic philosophy, in which goods are (relatively) free to move to alternative uses.

These grandparenting provisions put in place a de facto allocation system that will have long term impacts beyond those recognised by the Government’s analysis so far. The controls are mooted as ‘interim’ but there is no route out from “interim”. There is no direction away from highest leach, which will keep being the highest. Although the interim period is suggested as being ten years it is not certain, and there is no direction on how a just transition will be made.

Experience to date (Lake Rotorua PC10) is that once such rules are in place they become permanent.

These “hold the line” policies will not improve freshwater health, as nitrate leaching’s impact on freshwater health is determined by concentration. Hill country headwaters will remain ecologically healthy but the downstream problems would persist, with no meaningful improvement to freshwater health.

The current proposals mean that those leaching at the higher end of the scale will be allowed to remain at these very high rates while adjusting to the new regulations, meanwhile low input systems will be restricted their ability to innovate and adapt their land use systems to match the innate capability of the land and in their ability to adapt to newly created costs of implementing the proposal. Those with very high leaching outputs are inappropriately displacing a large range of uses with moderate leaching. The NPS-FM and the NES-F needs proposals for removing the worst high leaching activities from the catchment to enable moderate leaching activities to have some flexibility to operate.
52. For land-use change to commercial vegetable growing, do you prefer Option 1: no increase in contaminant discharges OR Option 2: farms must operate above good management practices. What are your reasons for this?

No comment

53. How could these regulations account for underdeveloped land, and is there opportunity to create headroom?

These regulations do not account for “underdeveloped” land and would have the effect of penalising owners of such land for their low contaminant losses.

The approach will have a disproportionate effect on multiple owned Māori land that has tended to be subject to land use intensification less rapidly than freehold land. Land owners of forested land recently returned via Treaty settlement will also be significantly affected.

Allocation is a completely flawed concept as there is not the supporting data to make accurate allocation. The only equitable option to create “head room” is to properly regulate those land uses that are operating well beyond the assimilative capacity of the land and losing excessive contaminant levels. This is the challenge for the farming industry and regulators.

Support that land should be treated like for like, with land of similar soils and land use capability facing the same constraints as their neighbour. All alternatives to a land resource based approach rely on an existing land use approach, which have the effect of picking existing winners and rewarding existing polluters.

Farm Plans (54-57)

54. Do you prefer mandatory or voluntary farm plans (acknowledging that farm plans may be required by councils or under other parts of the proposed Freshwater NES?) What are your reasons for this?

Mandatory, although for lower risk land the mandate may be set via permitted activity status with relevant conditions. Strongly prefer that the mandate is set as section 9 land use controls with a consequential s15 approval for incidental discharge, not as one that provides mandate via a section 15 discharge approval. The latter will lock in grandparented discharges and create or sustain a market in contaminants which drives completely the wrong behaviour.

There are a number of descriptors in the farm plan proposals that are too loose for compliance assessment or good performance. These include: (A) “as soon as practicable” (31(f), 39, 40 (4)), (B) “likely to be effective” (41(6)(b)), and (C) “doing the things outlined” (41(6)(c)). These need to be replaced with (A) set (but fair) time limits, (B) “known to be effective” (have some formal record of being proven e.g. riparian setbacks) and (C) meeting the requirements of.

Strongly oppose locking Overseer into regulations (clause 43-49). Overseer is a single time single place decision support tool that it is entirely inappropriate to use as though it can produce accurate or absolute numbers. It can’t. It does not meet the USEPA criteria for a model used in regulation (see PCE 2018 report)

Prefer a rule design that makes sure that the focus and effort is directed to those farms whose scale, location and stock type poses the significant risks of releasing contaminants. This would require a rule design that had threshold tests, so that it is only the activities with greater level of effects that require high levels of scrutiny (i.e. thus sets de minimus activity levels).

Freshwater module farm plans will grandparent emissions to historic levels, without regard to impact or contribution to the state of the freshwater system. They then seek reductions from this
state. This is both inefficient in terms of properly tackling the effects of large emitters and likely to be ineffective at addressing specific freshwater issues that relate to the land use

The cost of compliance or the level of on-farm action should be proportional to the environmental impact of the activities on that property on freshwater health. The freshwater module farm plan approach needs refinement to take account of this.

The NES-F Farm Plan module requires a nutrient budget and demonstration that the farm operation will reduce all emissions of nitrogen, phosphorus, sediment and microbial pathogens. This implies grandparenting current level of emissions, regardless of impact. The requirement to reduce all emissions, regardless of current levels or environmental effect, requires disproportionate effort compared to the effects of the activity. While this might avoid input controls that are so antithetical to the RMA principles, it will have the effect of seriously constraining some within-property constructive solutions.

55. What are your thoughts on the proposed minimum content requirements for the freshwater module of farm plans?

These could have a format similar to that in the NES-PF, which sets out in a schedule the risks to water quality based on the various land features on the property, and requires that the management plan responds to those risks. For agricultural use it would need to cover the other three contaminants and would also need to include process contingency planning for high risk activities such as dairy effluent management.

Some terms need to be defined more clearly. These include: “erosion prone land”, “soil types”.

56. What are your thoughts on the proposed priorities and timeframes for roll out of farm plans, as set out in the proposed Freshwater NES?

No comment

57. Do you have any comment on what would be required to ensure this proposal could be effectively implemented, including options for meeting the cost of preparing, certifying and auditing of farm plans; and on financing options for other on-the-ground investments to improve water quality?

Farm Plans appear plausible for the critical source area/overland flow issues. The stock intensity issues may need a different mechanism.

The policy could avoid direct input controls but use system inputs as the threshold test to identify production intensity and practices that need very close management. E.g. input thresholds, such as stocking rate, could be used as a screening technique to ensure that the focus is on where it needs to be, which for N leach issues is very strongly correlated to dairying.

To use Farm Plans as a regulatory tool needs to record actions that manage known effects with sufficient certainty that conformance to those can be checked. That means they need to be specified in such a way that it’s possible to tell what has to be done and that it has been done within the timeframe. Vague terms of “following best practice” or “in accordance with the code of practice” is not enough. The actions must be readily auditable and based on actions that are strongly correlated to effects of concern. There are a large number of scientific papers that set out these correlations although more work on getting them into the public domain in plain English would provide additional support for their message.

The Farm Plans would have to specify actions that are:

- relevant to the risks present on that property,
• strongly correlated to an effect of concern (e.g. if the concern is overland flow from the critical source area of a race, then capture/treatment of that flow)

For RMA water quality the formal regulator is the regional council. Council’s regulatory audit would check compliance with:

1. Actions known to mitigate effects e.g. riparian setbacks, that have been done according to the risks present on that property, in accordance with how the plan set out those setbacks and in a way that does mitigate the effects and

2. Processes that address risks e.g. effluent irrigation failure contingency processes such as presence of sensors and alarm systems.

**Immediate action to reduce N loss (Q58-64)**

**58. Which of the options (or combination of them) would best reduce excessive nitrogen leaching in high nitrate-nitrogen catchments? Why?**

The best way to reduce excessive N leach in high N leach catchments is to remove the high leach activities from those catchments. Requiring all activities to squeeze up to accommodate these new or newly intensified activities will in many cases not achieve the required in-stream contaminant profile, while putting many more land use activities at economic risk.

Partial support of option one for a nitrogen cap and that high discharging land uses be required to reduce to this cap. However, this approach should be also applied to catchments where significant change in N levels have occurred in the last 30 years. The actual threshold of those who must reduce should be derived from farm intensity which is most easily measured through stocking rate. All farms over a particular intensity should be required to make a reduction.

Oppose option two, as the proposed cap on total nitrogen applied in fertiliser per hectare per year would lock in land uses and is unlikely to achieve improvements in reductions in nitrate leaching.

Oppose option three, which would grandparent all current land uses rather than requiring reductions from the high-leaching activities. If Option three was revised to required farmers on high leaching farms (e.g. threshold stocking rate) and those who have created high leaching farms since 1995 to reduce, rather than all farmers, that would directly tackle the issue that these land uses and land use changes have created.

Oppose the use of the Overseer “model” to support the “hold the line” policies. The Overseer decision support tool is single-farm comparative only. It cannot produce absolute numbers nor accurate ones. It cannot accurately reflect the whole N pathway from on-farm inputs to N appearing in a lake or stream, because it doesn’t include activity in groundwater. Version changes may result in changes to the relative impacts between systems between versions, so it doesn’t provide a consistent answer for output files over time.

Using a decision support tool such as OVERSEER has value as a management aid to determine lower/lowest contaminant options.

**59. If you are in a high nitrate-nitrogen catchment, what would you have to do differently under these options?**

**60. In addition to those already identified, are there other high nitrate-nitrogen catchments that should be subject to these options?**

No comment
61. Do you think the action already underway in five regions (identified in section 8.4) will be effective in reducing excessive nitrogen leaching in those high nitrate-nitrogen catchments?

No. High N leach activities have been established in places that are not appropriate. There have been no direct rules to stop them, however they are breaching section 15 of the RMA which requires no discharge of contaminants to land in a way that will reach water, and there is no rule that permits such an action.

For those who have established such activities since (say) 2005\(^7\), by which time N leach issues were well known, their due diligence should have alerted them to the risks that they would need to be able to carry out their activities without relying on others in the catchment to accommodate their excessive N leach profiles. The FLG and KWM correctly note that some land use change will be required to address these issues. The question that has been assiduously avoided in the NPS-FM and NES-F is how to characterise which activities should go, and what process should be used to remove them.

62. Should there be higher thresholds for farms that produce food products in winter, and if so, which food products?

No comment

63. What alternative or additional policies could contribute to reducing nitrogen loss?

Remove the large area very high leach activities that are well beyond the assimilative capacity of the catchment from the catchment, by compulsory land use change. The emergent problems of N leach are strongly correlate to dairy expansion and intensification onto land types that cannot assimilate the outputs (leaky soils, in some cases exacerbated by irrigation). Although it will be politically and economically demanding to deal with, some of this activity has to be rolled back.

64. Do you have any comment on what would be required to ensure this proposal could be effectively implemented?

If this is referring to the proposal to immediately reduce N leach via requiring reductions in N leach, it would require (1) Reductions in intensity of land use, on a per property basis and/or land use change (2) Development and use of modelling that can accurately identify N leach profiles (i.e. not Overseer) and measurement/modelling of actions to confirm that they are reducing N leach outputs.

65. Do you support excluding stock from waterways? Why/why not?

Support stock exclusion. The proposed stock exclusion regulations appear to provide sufficient exceptions to be practically achievable for all farmers. They are significantly less stringent than the equivalent regulations in the NES PF which (1) requires 5 and 10m setbacks from all perennial waterways in all topography, not just larger streams and (2) for any water crossing requires all road runoff to be directed away from the waterbody.

Oppose the 20-hectare exemption proposed (NES-F Regulation 26) because these smaller properties can still have a significant negative effect on stream continuity for aquatic ecosystems. The threshold should be set at one hectare. This would align it with the NES-PF.

66. Do you have any comment on the proposed different approach for larger and smaller waterbodies?

If the purpose is to restore habitat for diadromous species then it is inappropriate to exclude smaller water bodies from this regulation.

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\(^7\) See timeline set out in Essential Freshwater October 2018 page 19-20
The Regulations must also recognise that the NIWA NZ Rivers digital model (REC) does not identify all headwater streams. First order streams that flow in a normal hydrological year should also be protected from stock (other than sheep).

67. Do you have any comment on the proposed five metre setback, or where it should be measured from?

The stream edge should be measured from the bank. The 5m setback appears to be suboptimal based on riparian management guidelines\(^8\). These concluded that 5–6 m would not become self-sustaining and should only be used on very small waterways/ no other option, on the basis that a narrow buffer is better than no buffer. A 10 m buffer width allows for indigenous vegetation succession and should result in a relatively low maintenance riparian buffer strip.

68. Are there any circumstances that are appropriate for allowing exemptions to the stock exclusion regulations? If so, please give examples.

Low intensity sheep grazing, as proposed.

Controlling intensive winter grazing (Q69-70)

69. Do you prefer Option 1: Nationally-set standards or Option 2: Industry-set standards? Why?

Support National standards.

The pastoral industry has demonstrated it is incapable of appropriate self-regulation. Suppliers and markets have little influence on the pastoral industry’s laggards and bad actors. The farmer shareholder co-op nature of many supply chains means that industry is not empowered to enforce self-regulation. In the time that Fonterra has said it could impose a “no pick up” penalty on poor environmental performance it has not availed itself of this option. There is a strong community ethic in rural NZ that inhibits anyone from “dobbing in” a neighbour. The degradation of freshwater in the last decade, coincident with numerous dry stock to dairy conversions and an increase in intensive winter cropping in Otago and Southland, including “spray and pray” on hillslopes, has shown the outcome of leaving it to industry or to the rural community to self-regulate.

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?

Oppose both area thresholds. Suggest a flat 20 ha.

Slope recommend this is tied to setback distance, with higher slope requiring bigger setback. Require that for permitted status the setback from critical source areas is 5m and these are not to be ploughed or grazed at the time the crop is grazed. Recommend that CSA are identified using DTM from LiDAR and the tractor GPS is used to adhere to these setbacks at time of seeding.

Feedlots and stock holding areas (Q71-75)

71. Do you have any comment on the proposal to restrict feedlots?

Support the definition of feedlots, and in general the identification and management of activities which can pose a higher environmental risk when not adequately managed.

Request that the text for NES-F clause 27(c) is replaced with an actual provision, as follows (or similar), not a reference out to an unknown regional council limit.

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\(^9\) or once (Renwick, Marlborough?)
Add a further provision that requires that there be no runoff or discharge of pad effluent to surface water from the feedlot or stock holding area.

27 (3) Any resource consent granted for the discretionary activity must include at least the following conditions:

a) the base of the feedlot must be sealed to a minimum permeability standard of $10^{-9}$ metres per second;

b) the area must be sited at least 50 m away from waterbodies, water abstraction bores, drainage ditches, and coastal marine areas;

c) there must be no runoff or discharge of pad effluent to surface water from the feedlot or stock holding area.

c) all animal effluent, or water or bedding material containing effluent, must be collected, stored, and disposed of in accordance with regional council regulations or a current discharge permit;

d) Materials used to absorb pad effluent or the effluent itself when:

   (i) spread on land as a means of disposal shall not exceed these maximum kgN/ha N loading rates: production forest or grazed pasture 150, maize silage 200, cut and carry 600; or

   (ii) [other disposal option than to land?];

d) if the consent is granted before the date that is 2 years after the commencement date, the applicant must, by that date, have a certified FW-FP for the farm to which the consent applies.

72. Do you support the proposal relating to stock holding areas? Why/why not?

Delete Clause 29(4) onwards. The matters described in 29(4) are not a default from a previous activity status set out in Clause 29(2). There is no circumstance, reason or route by which these matters set out in 29(3) cannot be met. 29(4) describes matters for enforcement action.

73. Do you think sacrifice paddocks should be included?

Yes. However 29(2) should include the same (revised) wording as 27(3)

29 (2)  c) there must be no runoff or discharge of pad effluent to surface water from the feedlot or stock holding area.

   c) all animal effluent, or water or bedding material containing effluent, must be collected, stored, and disposed of in accordance with regional council regulations or a current discharge permit;

   d) Materials used to absorb pad effluent or the effluent itself when:

      (i) spread on land as a means of disposal shall not exceed these maximum kgN/ha N loading rates: production forest or grazed pasture 150, maize silage 200, cut and carry 600; or

      (ii) [other disposal option than to land?];

74. What would you have to do differently if this proposal was implemented?

No comment

75. Do you have any comment on what would be required to ensure this proposal could be effectively implemented?

Better enforcement by regional councils.

Information on critical source areas readily available from regional council for use by land users as DEM LiDAR, to plan appropriate locations for stock holding sites.

Other comments NES-F (Q76-78)
“Vegetation destruction” is too loose and needs a de minimus. Significant indigenous vegetation is also too loose.

77. What are your thoughts on the proposed technical definitions and parameters of the proposed regulations? Please refer to the specific policy in your response.

Parameters are not sufficiently thought through. “Hold the line” would have most effect v cost if only applied to dairy and within-dairy-intensification re N cap. The total range of N leach at present and therefore the opportunities for remedy within this land use system (leach range modelled to span over 50kgN/ha) far outweigh the effects of making changes to drystock or some conversion of land from forest to other uses (leach range measured or modelled at 2.5 – 25kgN/ha).

N Cap requires N loss figures generated Overseer. This is an inappropriate reliance on this Decision Support System. Stocking rate would be a simpler threshold to trigger the need to scrutinise and manage the farm system via farm plan and (perhaps) consent process.

Oppose all definitions for subpart 4 – Nitrogen cap because they rely on Overseer, which is not sufficiently stable or accurate for this function in regulation.

Oppose 44 – trigger instead by stocking rate.
Concerns with 44(4)(c), 46 and 48 and their reliance on Overseer outputs. Overseer is not stable or accurate. Needs an alternative way of deriving the comparison of N leach.

Oppose 47(2) as this will be very resource intensive and expensive and introduce delay to action because it requires collection of all data before these properties can be ranked and the bell curve derived.

78. What are your thoughts on the timeframes incorporated in the proposed regulations? Please refer to the specific policy in your response.

No comment

11. Interactions between NES-FM, NES-F and other policies (79-80)

79. Do you think there are potential areas of tension or confusion between the proposals in this document and other national direction? If so, how could these be addressed?

Timberlands opposes allocation for the reasons set out below. In summary (1) It diverts attention away from the significant problems, (2) imposes unnecessary costs and constraints on those who contribute little to the problem, and (3) it is unlikely to be successful in lowering N leach to sustainable levels.

Timberlands opposes grand parented allocation. “Hold the line” or moratorium sets up for grandparented allocation.

Timberlands considers that the forest contaminant issues are well served by the NES-PF and that the NES-PF should be run in parallel to the NES-F, with the latter clearly identified as applying to farm land uses.

Support the NPS-FM clarifying and tightly defining the circumstances that will trigger regulation 6 of the NES-PF.

At present the NES PF (regulation 6) provides councils with the ability to develop more stringent rules to give effect to the NPS FM. Most of the activities regulated under the NES PF can have some effect on water so this effectively applies to the entire document. The intent of regulation 6 was that the ability to be more stringent only be utilised where this four-step test is met: (1) where a Council has developed attributes for FMU’s in their region; (2) the assigned attributes are not
currently being met; (3) forestry is identified as a significant contributor to the attributes that are not being met; and (4) the current NES PF provisions are considered inadequate to address the issues. It was also anticipated a Council would undertaking a full section 32 analysis to justify the need for additional rules. Experience to date is that this has not been the case. Without clarifying the relationship between these three national instruments: NPS FM, NES-PF and NES-F it is likely that the key benefits of the NES PF - in providing appropriate regulation for forestry with clarity and consistency – will be seriously undermined. Articulating how the requirements of the NPS-FM are given effect by the NES PF would assist. This could be achieved by regulations in the NES PF relating to compliance with freshwater attributes (once confirmed for an FMU) potentially removing the need for a greater stringency relating to the NPS FM.

The number of national direction documents being produced means that there is a great need to explain how these documents to work together. If not the inconsistency and duplication that exist at a regional and district level could well be replicated at a national level, leaving councils and communities grappling with how to make them work, at significant cost.

RMA changes

The changes to the RMA are slated to occur after the changes to the NPS-FM and the NES-FM. Changes to water and contaminant allocation regimes will therefore occur after land use has been locked into status quo, which is what is proposed by the moratorium.

This sequencing of first doing “hold the line”, and securing that with resource consents, will set in train actions that will be difficult to redirect, even with changes to the higher level instrument of the RMA itself. The main concern Timberlands has is that for the time of “hold the line” it will create a de facto allocation that will permanently embed a grandparenting allocation.

The ideological factors that contribute are:

1. The RMA takes an effects-based activity neutral philosophy to managing adverse effects on the environment. In the case of diffuse pollution with long time horizons before the effect is measurable, this approach works poorly because it is not possible to create perfect effect-attribution links that reach up to the cause in a timely way. In many cases the pollution horse has bolted and responses to the ecological threats that some activities pose (irrigating N into groundwater) are only reactive.

2. The NPS-FM NOF supports a cost-accounting approach to the allocation of “rights” to discharge specified contaminants. Cost-accounting is closed set and requires accurate accounting. Natural systems are semi-open set, and are very demanding and expensive to measure/count. This tension between proposed controls and nature of problem is essentially irreconcilable. The result of this poor match will be failure to measure (or agree on measurements) and failure to control.

All forms of allocation create a major distraction and delay from tackling known problems.

The main causes of the contaminants to water are well known and there is good scientific evidence linking cause and effect. This being the case means that effort should not be distracted from directly tackling those activities that are strongly correlated to high levels of contaminant discharge. Attempts at pinpoint accuracy attribution for every single source are a fruitless misdirection of effort. An 80:20 approach will address the main significant sources.

The RMA construct of effects-based management requires working back from the effects in the groundwater/waterbody to attempt to attribute the causes of contamination to particular land uses, and practices. The RMA effects approach also reinforces an approach of “you can do what you
like, provided your effects are within the bounds of xyz contaminants”. That philosophy requires accurate measurement of both the contaminant outputs and the per property outputs so that allocation regulations can be effective. i.e it sets up for a cap and trade model.

Unfortunately we have no ability to accurately measure, and a poor ability to accurately model the quantities of contaminants reaching groundwater. This means that a regulatory approach that relies on accurate numbers being used to allocate the “rights” to those contaminants will be subject to significant and quite rational debate on those numbers. That debate distracts from the main issue, which is to reduce the negative effects of land use on water.

The methodology to allocate the “rights” to contaminant discharge usually pits sector against sector in a competition to secure the most for sectors and within sectors (as we have discovered through regional plan changes e.g. BOPRC PC10, WRC PC1). That process is fraught and freighted with unconscious values. Because the allocation has significant material value to the person holding it, the focus is on gaining and retaining that allocation. i.e. there is a perverse outcome, which is that the rights to pollute has significant material value. The behaviour an allocation approach drives is therefore contrary to behaviour to reduce contaminants.

Within the envelope of allocation grandparenting sends even more of the wrong signals - within a system that already sends the wrong signals.

Oppose the proposed frameworks, rules, and standards which will lock in current levels of discharge into our waterways and lock-in existing land uses. This approach effectively rewards high intensity, high discharging systems (particularly high N leaching systems), while penalising low intensity, low input, and low discharge systems that work within the physical environment of the farm.

A fair approach would be one where each land user is expected to do their bit, in proportion to their impacts, in an effective and workable manner. “Hold the line” restrictions on land-use change do not recognise this proportional effect, serving to heavily penalise low N leaching activities and favouring high leaching ones.

Constraining low intensity farm systems will limit their capability to achieve the goals of the proposal or meet the additional costs of compliance. This would significantly disadvantage responsible farmers and proactive custodians of the land who have already sought out and achieved environmental innovations.

For attribution of contaminants to have a material cost and thus drive pollution reduction behaviour requires a different philosophical base = polluter pays.

80. Do you think a planning standard is needed to support the consistent implementation of some proposals in this document? If so, what specific provisions do you consider would be effectively delivered through a planning standard tool?

Not necessarily, however there are drafting matters that, if modified, would improve the certainty of the NPS-FM and the NES-F. For example, it would be better if some of the proposed regulations did not seek compliance via some uncertain, variable external reference – namely (1) those regulations that say “in accordance with regional council regulations or a current discharge permit;” and (2) those regulations that say “… must comply with all relevant rules in the relevant regional plan” (e.g. 22(1)(a)). The latter is particularly problematic because if the rules require something different from what the NES-F requires – either rule status or rule content – there is no guidance on which prevails, nor is there a process set out for dealing with inconsistencies.