

# Submission

## **ACTION FOR HEALTHY WATERWAYS:**

**A discussion document on national  
direction for our essential freshwater**

Submission to:  
Ministry for the Environment  
31 October 2019

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Your  
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## The Forest Owners Association

The New Zealand Forest Owners Association Incorporated (FOA) is the representative membership body for the commercial plantation forest growing industry. FOA members are responsible for the management of approximately 1.2 million hectares of New Zealand's plantation forests and over 80% of the annual harvest.

In 2018, the forest growing sector was worth \$6.38 billion in export value and is a 12% share of rural land use.

## Summary

The FOA supports the objectives of the Essential Freshwater Programme. We agree that healthy waterways are of critical importance to all New Zealanders. We also agree with the three stated objectives for freshwater.

As a land use that has relatively lesser impacts on water quality, and with national level regulation of the industry already in place, we believe that our industry is well placed to help meet water quality challenges.

Our submissions on key aspects of the proposal are detailed below. As far as possible we have followed the question format and numbering of the discussion document, noting that we have only answered those questions of direct relevance to our organisation.

We have also identified some aspects of the proposals that are of concern which in some instances had no related question in the discussion document. Where this is the case the issue has been raised under the question topic that most closely related to that issue.

## Responses to relevant questions in the discussion document

### **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?**

Parts of the approach set out in this document should certainly contribute to halting further degradation of New Zealand's freshwater. The proposed rules relating to feedlots, intensive winter grazing, stock holding, stock exclusion, wetland protection and requirement for all farms to have freshwater modules of Farm Environment Plans must bring about improvement. A key issue is that for rules to be effective they need to be implemented, monitored and enforced. The high levels of non-compliance with even relatively basic farming rules in many regions to date indicates that this area has been seriously lacking.

As further detailed below, the FOA has a fundamental concern with the proposed grand-parented approach that underpins many of the intensive farming rules that will inevitably be an impediment to achieving much needed improvement. Any regulatory approach that rewards polluters and penalises those that have low losses of contaminants can only serve to discourage voluntary improvement.

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

The proposals, if implemented effectively, should improve freshwater quality within a generation. Legacy issues with nitrogen contamination already entrained in groundwater could potentially take much longer depending on the lag time for groundwater to emerge. Similarly sediment already built up in freshwater systems over hundreds of years since commencement of land clearance can take a very long time to work its way out of some freshwater systems.

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

Our members' forestry operations are already governed by regulation, either through permitted activity regulations under the National Environmental Standard for Plantation Forestry (NES-PF) or through resource consents for activities. Both already have a heavy emphasis on impacts on waterways and in particular sediment being the major contaminant of concern for plantation forestry. If anything, this emphasis will only increase over time.

The only significant change our members see is potentially a much greater emphasis on water quality monitoring in addition to the compliance monitoring already undertaken, to prove compliance with water quality attribute limits once confirmed. It is currently unclear how this monitoring will take place and who will be expected to undertake it.

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

The package as proposed clearly places significant additional obligations on Regional Councils. Observing Regional Councils grappling with the challenges they are already facing we can see that this is going to be a significant challenge and will require substantial additional resourcing, the cost of which will inevitably be borne by ratepayers and resource users. It will be imperative that wherever efficiency and streamlining can be achieved by developing processes and systems at a national level to support Regional Councils, this should be a high priority.

One key area where national oversight and funding is clearly needed is in the development of robust models and tools for assessing contaminant losses. If regulators are to persist with attempting to allocate nutrient loss rights to land users then a key priority is improving (or replacing) Overseer to be a more accurate, fit for purpose and transparent. As clearly articulated in the Parliamentary Commissioner for the Environment's report on Overseer, it is clearly being used well beyond its intended purpose and has not been well ground truthed for numerous soil types and many land uses.

Aside from nitrogen there is the issue of how to retrospectively assess losses of other contaminants listed in NES-FW intensification rules. If an allocation approach is to be mandated then national assistance on how this is to be determined robustly and fairly is needed.

## **6. Can you think of any unintended consequences from these policies that would get in the way of protection and/or restoration of ecosystem health?**

The approach to managing intensification and the most intensive farming activities is in our view completely contrary to the objectives of the freshwater package.

Land use intensity is a key issue, with intensification having occurred to the point that some catchments are now intensified beyond what can be sustained by the environment. The key approach underpinning all of the intensity related rules in the NES-FW is to use grand-parenting to allocate rights to future land use based on past land use and contaminant losses. The ability to farm intensively has been allocated to those already undertaking those operations, with the greater losses a land user has, the greater land use options and flexibility going forward. By contrast land uses such as forestry, with very low contaminant losses, will be effectively locked into their current land use - forgoing any land value associated with alternative potential land use.

This approach unquestionably incentivises farmers to pollute and continue to pollute so as to maintain land use flexibility which links directly to land value.

## **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?**

Based on the performance of Regional Councils to date to deliver on freshwater objectives, there does appear to be some merit in having independent national oversight to ensure the intent of this package is achieved. That support is based on the premise that such an organisation is staffed with knowledgeable and experienced individuals, with a broad geographical spread and not captured by particular sector interests to ensure balanced representation. If that is not the case the same failings that have occurred at a regional level could simply be duplicated at a national level.

The alternative is for the Ministry for the Environment to be sufficiently resourced to fulfil the function of providing national direction and oversight.

## **8. Do you have any other comments?**

All sectors need clarity and certainty going forward. Regional attempts to resolve freshwater have to date been protracted, confrontational and expensive. In some regions tens of millions of dollars have been spent litigating regulation, funding that would unquestionably have been better spent on the ground achieving actual improvements to water quality. In some instances, the quantum of money spent on planners and lawyers could have funded buying out and retiring the most intensive land uses in the catchment, fully resolving the problems. Instead we find ourselves many years down the track, no better off, with councils now grappling with how to implement the resultant rules and some sectors facing an almost insurmountable targets to improve, or embarking on extremely expensive mitigations that may in time become redundant if it does not prove to be sufficient.

In our view the essential freshwater package should be aimed at achieving a step change improvement in water quality that should then be bedded in for a period of time to provide rural landowners certainty as to what they need to do and a chance to get on and work through and implement the requirements. Constantly changing regulations and moving goal posts can only create uncertainty and in many instances hamper progress as landowners wait to see where rules land to ensure they do not inadvertently find themselves disadvantaged by doing the wrong thing.



For the forestry sector the NES-PF has served to provide some level of clarity and certainty, at least for core activities. It is also imperative that such national direction is given a chance to bed in, with reviews undertaken strategically, rather than constantly pulling on levers to address the issue of the day. It is also imperative that the NES PF is not undermined by the NPS-FM recreating further variation.

**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.**

In principal the FOA supports faster processes for freshwater planning. In some regions we have experienced the regulatory processes dragging on at vast expense to regulators and the community. Some of this time and cost could have been avoided through better national direction much earlier, to avoid regions having to grapple with the same issues region by region. That said, it is apparent that many of the proposed rules developed under those regional processes have been copied directly into this freshwater package, so potentially it would have been much more difficult for the Ministry to develop national direction in a vacuum.

The FOA members' major caution is that faster planner will not necessarily give better outcomes. Managing water quality and who bears the cost of constraints is extremely complex and has massive implications for all New Zealanders, both urban and rural. We need to get it right and that inevitably takes time.

It is also apparent that as the RMA processes have become more complex and litigious it is tilting the balance of influence toward those organisations that are highly resourced. Streamlined hearing processes such as in Auckland region that require submitters to appear at initial hearings with lawyers, planners and expert witnesses in order to have any chance of being heard, can only ensure that RMA processes in New Zealand are dominated by the influences of the most resourced sectors, corporates and the wealthy. In some instances that may lead to quality of outcomes being traded for speed.

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

Setting of attributes and coming up with a management approach is clearly a first step. However, water quality will only improve if this is followed through with sensible and equitable regulation that will actually improve water quality, monitoring of both activities and water quality, and enforcement to ensure the regulations are being followed. To date the inability of some councils to enforce even the most basic of farming rules does raise some questions how they will resource and implement a vastly more complex and comprehensive set of requirements.

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

The FOA supports the requirement to ensure fish passage is maintained when installing stream crossings. Fish passage has been mandatory since 1983 under the Freshwater Fisheries Regulations more recently for forestry under the NES-PF.

The NES-PF and NES-FW have similar but different requirements which is confusing for land users. It is our strong preference that for clarity and simplicity all requirements for plantation forestry are retained under the NES-PF to avoid having to reference two different sets of rules.

With regard to the proposed provisions of rule 21 (page 10) our comments are as follows:

- The proposed requirements to install culverts that are significantly wider than the natural stream bed (rule 21(d)) are impractical. To meet the rule would require excavation into the stream banks to widen out the natural stream bed which will often be impractical and in many instances undesirable, resulting in unnecessary soil disturbance and destabilising stream banks up and down stream.
- We question how anyone could monitor or enforce clause (e) of rule 21 regarding timing (4/5 of the time). In the event material is flushed out of culverts during storm events as worded this would put landowners in non-compliance with the rules. This appears unreasonable. In such instances, the rule would require manual reinstatement of material in the culvert, where, from an environmental point of view it would generally be more desirable to allow nature to take its course and gradually refill the culvert.
- Clause (e) has a different requirement to the NES-PF (25% cf 20%). For the sake of consistency, the NES-FW should be set at the same level as the NES-PF.
- Clause (h) has different notification requirements to the NES-PF. Of note our members are finding the NES-PF notification provisions requiring notification to be provided 'within' a certain time frame becomes bureaucratic to comply with for larger scale operations. This effectively means notifications have to be provided in a piece-meal fashion and potentially re-notified if works are delayed due to weather. This is of no benefit to either the applicant or council and is just creating bureaucracy. The NES-PF and NES-FW notification provisions should be the same, and both should allow for practical timeframes – potentially allowing for multiple notifications to be made up to a year ahead to enable efficiency. The key issue is that the information is passed to the council in a timely fashion and an understandable format.
- We note there is no reference to the fish spawning indicator for general works in a stream. This is inconsistent with the NES-PF. For consistency the same requirements should apply to all.
- Rule 24: Dams, fords and non-passive flap gates (page 11): We note that the rules for fords are significantly less stringent than the NES-PF, with no restrictions on ford use. The two documents should have the same provisions.

#### **24. Should fish passage requirement also apply to existing instream 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?**

The FOA supports the requirement for existing instream structures to be modified over time to provide for fish passage. We are strongly opposed to the full detailed requirements of regulation 21 of the proposed NES-FW applying to existing stream crossings. Very few existing culverts would meet all of the proposed requirements relating to width, water flow, set down depth etc. To require all of these culverts to be replaced would result in an enormous amount of work, cost and stream disturbance, replacing existing culverts all over New Zealand on public roads and private land for often marginal benefits.



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

The FOA supports initiatives to protect natural wetlands. Plantation forestry will be disproportionately affected by the regulations to protect wetlands, on the basis that it is one of the few (possibly only) productive land uses that virtually all remaining wetlands remain intact. Forest owners have undertaken almost no land drainage, the tree species that are grown in New Zealand plantation forests do not tolerate wet conditions and typically are not planted close to wetlands.

As a result, any wet areas readily regenerate into vegetation that would meet the definition of a wetland during the growing phase of the forest, even if was not present at the time of planting.

By way of illustration photos below (SH12 North of Dargaville, Northland) show a typical situation in plantation forests throughout New Zealand. A fully intact wetland exists within the production forest, with the remainder of the wetland across the boundary on farmland fully drained and virtually non-existent.



Photos top to bottom showing a panorama view (left to right) of a wetland on a typical farm forest boundary – in this instance SH12 north of Dargaville.

The wetland is fully intact within the forest and fully drained and non-existent on the adjacent farmland.



The only time that forestry activities impact on wetlands is once a rotation at the time of harvesting of adjacent trees and re-establishment. The damage, if any, is limited to minor short-term edge disturbance, and at crossing points if there is no alternative access.

The impacts of forestry activities on wetlands including planting setbacks are managed under rules in the NES-PF for routine forestry activities, and Regional Plans for herbicide application.

We support the proposal in the NES-FW that the NES-PF prevails over the NES-FW in relation to wetlands. This will avoid duplication and is justified on the basis that threats and potential impacts on wetlands in plantation forests are entirely different to other land uses, as illustrated by the pictures below. We note that the NES-PF is currently under review and will be subject to periodic review going forward, so there is the opportunity for wetland provisions in the NES-PF to be amended if required to be in step with the NES-FW.

As a general comment we note that the requirement for councils to identify, manage and monitor wetlands down to 0.05ha in size is extremely ambitious, particularly given huge number of areas in New Zealand that would meet the definition of wetland. In our own experience with SNA mapping in our forests, even mapping down to 0.25ha presented a significant challenge to councils, with weeks of work ground truthing required to verify the mapping accuracy. Despite this even today we find mistakes in the SNA mapping at harvest time.

With regard to the detail of the wetland protection rules in the NES-FW we have the following concerns:

- Rule 5: Standard wetland monitoring obligation: It is somewhat unclear what the purpose of this rule is, but it implies that this condition must be applied to any activity that could damage a wetland area. This is of concern in a large production forest that may contain hundreds of wetlands. A requirement to monitor and report annually on every wetland, regardless of potential impact on them, is impractical and excessive. The purpose of the rule needs clarification.
- Rule 8: Vegetation Destruction (page 5): As currently laid out the rule suggests that *any* vegetation destruction within 10m of any part of a wetland is a non-complying activity. It is only with reference to the definition that it becomes clear that the rule is referring to destruction of 'significant indigenous vegetation'. It would be clearer if this were made clear in the actual rule rather than utilising the definition to form part of the rule.
- In the above rule 8 the term 'significant' is currently undefined – presumably it is referring to vegetation that has been mapped as 'significant' under a regional or district plan. Clearance of exotic production vegetation should be exempted from the rule (as is often the case under District Plan SNA rules), to allow for the situation where production forestry is mistakenly mapped as SNA due to map boundary errors.
- The layout of rules 10-14 (pages 5-7) is somewhat confusing as it does not follow the usual plan rule layout of permitted activity rules followed increasing stringent activity rules. It is also currently silent on activities that are outside of those described. It is assumed that where there is no applicable rule the land disturbance activity is permitted (subject obviously to further rules in a Regional or District Plan). It would be helpful if that were made clear. A particular concern is general soil disturbance (such as harvesting or earthworks) that is outside of a wetland but within the setback distances (10m and 100m) and that is not for any of the reasons described (restoration, drainage, flood control, nationally significant infrastructure etc). If the activity

does not result in drainage or any changes to the water level of the wetland, then presumably this activity should be permitted? Currently this is not clear.

- The wetland rules will make it a non-complying activity to cross any wetlands even with limited ecological values (potentially no indigenous vegetation). It is obviously preferable to avoid wetlands if practical, but in rural situations it is often impractical to avoid them. In our experience non-complying consents are extremely difficult to obtain. If crossing a wetland is not allowed it could render land inaccessible or alternatively push earthworks onto undesirable topography, to get around the wetland resulting in greater environmental impacts. Consideration should be given to a lower activity status (permitted or controlled) for localised damage to form a waterway crossing where no practical alternative exists.
- There is no allowance for maintenance of existing infrastructure across wetlands such as culverts on farm tracks and public roads. From our interpretation this would fall under rule 11 a non-complying activity. Consideration should be given to a permitted activity rule for maintenance of existing infrastructure and a controlled activity rule for replacement of existing crossings.
- It is a very common activity in plantation forests to create fire-fighting ponds in perennially wet areas, and due to the low flows, it is also common for wetland vegetation to establish in such areas. Under the proposed rules it will be a non-complying activity to maintain such water points (rule 11) and to extract water from them in event of fire (rule 17). This will result in an untenable situation of essential fire-fighting water sources becoming unusable creating risk to both the forest and the surrounding communities. Again, a permitted exemption is required.

## **26. If the proposal was implemented, what would you have to do differently?**

As noted above, plantation forestry does not typically result in the clearance of wetlands, and to the contrary as a result of afforestation, formerly grazed wet areas typically regenerate into wetland vegetation. We therefore do not anticipate doing anything differently. If the exemption for the NES-PF is not retained and the rules are not well drafted to be clear as to where they apply, we will require significant additional consents for routine activities within the vicinity of wetlands.

## **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?**

The wording of this question implies that all sediment deposition in an estuary is detrimental, is controllable and that in their natural state no sediment deposition would occur. In reality most New Zealand estuaries were formed as a result of sea level rise or tectonic uplift of former river valleys which have then become infilled with sediment to form the estuary features we see today. This natural infilling occurred well prior to any human occupation of New Zealand.

The level of ongoing sediment infilling is dependent both on ongoing delivery of sediment to the estuary and the estuary dynamics causing sediment to either flush or accumulate. While studies of estuaries have demonstrated that in some instances sediment deposition has increased as a result of human activity in the catchment, others show limited accumulation due to natural flushing taking place.



Even where studies have confirmed accelerated sediment accumulation is occurring there are typically numerous causes including:

- significant storm events causing erosion and sediment runoff from both productive and non-productive land (refer picture below)
- bank erosion
- impacts of past land use activities in the catchment (such as native logging and land clearance) that has built up reservoirs of deposited sediment in the catchment still working its way through the system
- effects of flood protection schemes that have cut off the natural sediment deposition zones of the flood plains resulting in direct delivery of water borne sediment to estuaries

Not all of these sources can be controlled and the FOA does not support a blanket mandatory requirement for councils to put in place measures to stop sediment accumulation in any estuary, without a robust scientific process to understand the natural estuary dynamics, all sources of sediment to the estuary and whether they can in fact be controlled.

A requirement to simply reduce sediment deposition without consideration of individual estuary dynamics could result in productive land uses bearing the cost of reducing sediment sources that are not in all cases the result of that productive land use, or in fact controllable, as is the case in the photo below.

Due to the complexity and variability of deposited sediment and the many unique factors influencing sediment deposition, the FOA supports that deposited sediment is managed under Appendix 2B (attributes requiring action plans) rather than being hard limits under Appendix 2A.

We question whether it is actually possible to measure deposited fine sediment to the precision implied by the values in Table 18. In our experience repeatability of deposited Fine Sediment measurements is not better than 5% and perhaps only 10%. If that is the case the attributes should potentially be rounded to the nearest 5% to avoid implying a level of accuracy that cannot be achieved in the field.



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

The FOA supports work to develop suspended sediment attributes for New Zealand waterways, acknowledging that suspended sediment is one of the key ecological stressors in many waterways. For plantation forestry, sediment is clearly the key contaminant of concern, with losses of most other contaminants typically at very low levels compared to other productive land use.

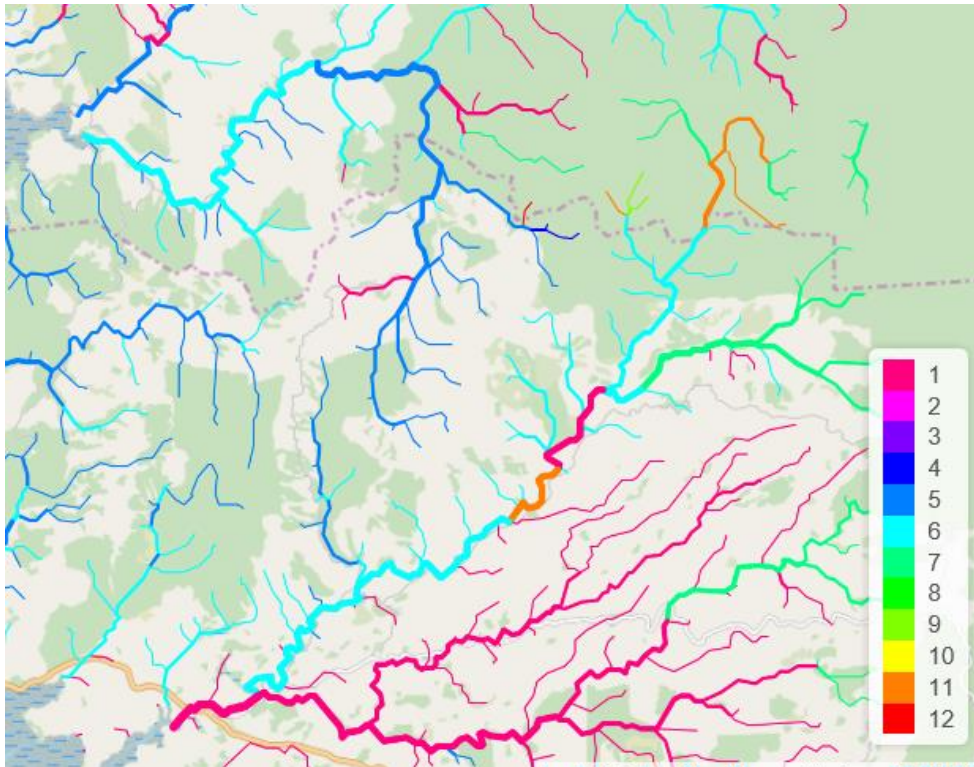
The FOA has the following comments in relation to the proposed suspended sediment attributes:

- We acknowledge the significant challenges of getting the measures right, given the natural variability of suspended solids both between different waterways (due to topography, geology etc) and over time within the same waterway due to varying flow and in particular storm impacts. This does make it an extremely difficult parameter to applying hard limits. The risk of getting it wrong is that we could have limits that simply cannot practically be achieved. Alternatively, the limits could be significantly less stringent than they should be.
- We support the approach of dividing waterways into bands based in geology, climate and topography which seems a sensible basis for managing variability. We do however note that in some instances the NIWA map shows some rather odd results with individual waterways apparently transitioning from one suspended sediment attribute class to another. In some situations, this can be explained by changing topography or geology but in others it is less explainable. This becomes particularly problematic where waterways are transitioning from significantly higher suspended sediment bottom lines, to lower ones.

By way of example the following is taken from the NIWA mapping tool modelled layer 'proposed classification system for turbidity for segments of the national river networks which we understand to be the layer to determine which SS attribute band a waterway falls into.

This particular snip shows tributaries to the Kawhia harbour. As can be seen the tributary running through the middle of this map transitions consecutively as it flows downstream through classes 7, 11, 6, 1, 11, 6 and 1 which corresponds to the SS bottom line for that waterway (from top to bottom) being 3.3, 1.6, 8.3, 3.2, 1.6, 8.3, 3.2.





We are unclear how Regional Councils will apply the limits in such situations. Can they take a pragmatic view of the waterway and apply a representative limit across the whole, or must each segment of the waterway achieve the bottom line as proposed for that individual segment?

There are also numerous situations where downstream water quality is required to be cleaner than upstream, which will not be practically achievable unless there is dilution occurring from a side tributary with lower sediment levels. It appears that the mapping needs to be reviewed to iron out any apparent mistakes, and there also needs to be some clarity as to how regional councils apply the limits where there are changing classes within a waterway and therefore bottom lines (as for the example above).

- The FOA questions the use of turbidity as the proposed measure of suspended fine sediment. In the main, routine monitoring of suspended sediment carried out to date has been measured by either suspended sediment (grab samples sent to the lab) or visual clarity (typically using clarity tubes). Both are significantly simpler and cheaper to monitor than turbidity, and therefore achievable for landowners and community groups to undertake monitoring. Turbidity probes are prohibitively expensive and are prone to going out of calibration and from experience have a reasonable degree of inherent error, with two different probes potentially giving significantly different results for the same water. The obvious advantage of using turbidity is the ability to produce a continuous record monitored remotely. If this is to be the adopted measure, it would be helpful to have relationship graphs provided to correlate between turbidity, suspended sediment and clarity for particular waterway classes, to enable landowners and community groups to undertake monitoring using simpler and cheaper equipment.
- The proposed attributes and bottom lines expressed to one decimal place imply a level of precision that to the best of our knowledge cannot be achieved by available field measurement

equipment. As we understand it the repeatability between different makes of NEMS compliant turbidity probes (in calibration) is no better than 10%.<sup>1</sup> Quoting from that paper (pages 5 & 6):

The results from our experiment show that different ISO 7027 compliant sensors can output very different numerical FNU values on the same fine sediment suspension. At the highest suspended sediment concentration (SSC) of 339 mg l<sup>-1</sup> tested in the experimental tank, the turbidity ranged five-fold – from 127.5 FNU on an Observator Analite NEP500 sensor, through to 648 FNU for a handheld Hach 2100Q unit. Previous authors have attributed differences in the outputs of different sensors to factors such differences in spectral emission of light source, spectral sensitivity of detector, detector angle and beam configuration; combined with the very different optical properties of natural suspended particulate matter in comparison to formazin particles. The results of this experiment suggest that even very subtle differences (e.g., different tolerances used in the manufacture of components) in sensors compliant with the *same* international standard can influence turbidity sensor response.

Our finding that nephelometric turbidity measurements are instrument-dependent, even for sensors of the same design, and sometimes the same make and model, has important implications. In particular, treatment of nephelometric turbidity as an absolute quantity should be abandoned. Instead, turbidity should be recognised as a valuable proxy for several sediment-related variables of interest in water quality, provided suitable local calibration occurs. 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 there is variability of this magnitude between different instruments it does bring into question how councils will monitor and enforce compliance with bottom lines expressed to one decimal place, using in field measurement devices.

- We support the attribute for suspended sediment to be based on median values, recognising that suspended sediment levels are extremely variable over time, with storm events delivering very high turbidity levels for short periods of time. However currently it is not at all clear in the attributes table (Table 10) that the intention is that the proposed attributes and bottom lines are to be applied as median values. This needs to be made explicitly clear to avoid confusion and debate.
- It is currently unclear how the measures are to be monitored and enforced either spatially (in representative waterways or every waterway) and over time (periodic or continuous). For forest owners this becomes particularly important in large forests with many waterways present, where monitoring every waterway would become costly and impractical. With regard to timing the footnote to Table 10 implies the intent is to carry out monthly monitoring over a minimum period of 24 months. It would be helpful to have guidance on this.

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<sup>1</sup> Andrew Hughes, R. Davies-Colley and S Heubeck (2019) Comparability of ISO 7027 compliant turbidity sensors. NIWA internal report.

### **35. If the proposal was implemented what would you have to do differently?**

Assuming the proposed attributes are realistic and robust we anticipate that freshwater leaving plantation forests will easily meet the attributes and bottom lines during the growing phase of the forest, on the basis that monitoring typically shows freshwater from production forests to be similar to indigenous forests during the growing phase. The key issue will be control of sediment at harvest time.

Sediment has always been a major focus of plantation forestry management and regulation and under the NPS-FM clearly this will continue, and if anything, be a greater focus. The industry will continue to review and update practices in our forests to minimise sediment losses as far as practical.

A key potential area of change is the level of monitoring required. It is currently unclear to us how monitoring will be undertaken to demonstrate compliance with the agreed attribute states under the NPS-FM, both spatially and over time.

Depending on the answers to these questions there will potentially be a significant ramp up in the level of monitoring required, at significant cost to land users, either directly or indirectly (via rates).

### **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.**

As noted in some of our answers to the questions above:

- Some of the proposed attribute limits have a higher degree of accuracy than can practically be delivered by field measurement.
- The FOA questions the use of turbidity as the measure of suspended sediment, noting the cost and inaccuracy of field measurement equipment.
- The intention that the Table 10 (turbidity) attributes are intended to be applied as median measure needs to be made clearer. An alternative approach is that monitoring could be carried out at or below median flow level.
- It would make sense for the definitions for bank full discharge and bank full width to align with the NES-PF. Having national environmental standards with different definitions for equivalent terms is confusing.

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

The FOA is strongly opposed to the proposed controls on intensification with the ability to intensify based on past land use and past contaminant losses. While the controls are proposed as 'interim' there is no indication in the NES-FW that this is intended to be the case. In our experience once such rules are in place they will become permanent and intensive land users will lobby strongly for this to be the case, so as to minimise impositions on their activities to meet water quality objectives.

The approach is in effect grand-parenting, rewarding those who have contributed most to water quality degradation with the greatest land use flexibility going forward which will sheet directly to land value.

By contrast land uses such as forestry with very low contaminant losses will be effectively locked in forestry losing significant land value on land with alternative land use options.

The approach also creates a perverse incentive for land users to maximise their contaminant losses within their current land use so as to retain land use options.

As a practical comment we question how councils will retrospectively assess past contaminant losses to give effect to the intensification rules. Firstly, there is the problem of how to assess changes in contaminant losses between land uses. There is currently only a model for assessing N losses (Overseer) which is not well placed for assessing relative losses between different land uses, some of which have had little or no actual calibration. For the other attributes (phosphorous, sediment and *E. coli*) there are no models and generally no records for assessing past losses. We question how this assessment would occur, other than for forestry conversions to farming where contaminant losses would clearly be well below any alternative productive land use.

Secondly there is the issue of accuracy of records for past reference periods. This is already presenting problems in the Waikato region where land has changed hands and records do not exist. As time passes this can only become more problematic as the reference dates become further into the past and records become increasingly difficult to find or prove.

In the longer term it is our view that the only rational path forward is that land should be treated like for like, with land of similar soils and land use capability facing the same constraints as their neighbour. Any alternative is picking winners and rewarding polluters.

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

These regulations clearly do not account for under-developed land and penalise owners of such land for their low contaminant losses.

The approach will have a disproportionate effect on multiple owned Māori land that due to the ownership model has been developed less rapidly than European freehold title land. Landowners of forest land recently returned to Māori ownership under Treaty claims will be significantly affected.

The only equitable option in the longer term to create head room is to effectively regulate those land uses that are operating well beyond the assimilative capacity of the land and losing excessive contaminant levels. This is the challenge going forward for the farming industry and for regulators.

As noted above, in the longer term it is our view that land should be treated like for like, with land of similar soils and land use capability facing the same constraints as their neighbours.

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

Given production forests are typically the lowest N leaching land use in a catchment, we do not have a view on how best to reduce high leaching land uses. However as a general point we do note that Overseer has been the tool of choice for most regional councils when assessing Nitrogen losses from land use in a catchment. As detailed in the Parliamentary Commissioner for the Environment report on Overseer, the level of ground truthing of Overseer for many land use types (and soil types) is extremely light. Overseer uses a blanket leaching rate of 2.5 kg/ha/year for any forestry, regardless of species, management, soils or point in the rotation. Studies show that a figure of 2.5kg/ha/year is representative of leaching rates for forestry on low fertility land that has not been previously farmed.



However, for forestry planted on previously fertilised farmland leaching rates can be much higher for considerable periods of time as excess Nitrogen gradually works its way out of the system. In all forestry sites there is also typically a short spike in N losses at the time of harvest as debris breaks down and nutrients become available. It is therefore possible that the use of a blanket leaching figure of 2.5 under Overseer is significantly underestimating N losses from forests in some catchments, which could throw out overall catchment accounting where there are large areas of forest. The Scion developed model NuBalM is a far more accurate model for assessing N losses from forestry.

#### **65. Do you support stock exclusion from waterways? Why/why not?**

The FOA supports stock exclusion. In our view stock exclusion is a fundamental first step to improving water quality and the proposed stock exclusion regulations appear to provide sufficient exceptions to be practically achievable for all farmers.

Of note the fencing setbacks are less stringent than the equivalent regulations in the NES-PF requiring 5m and 10m planting setbacks off all perennial waterways in all topography. Given the well understood relative impacts of production forestry vs pastoral farming on water quality, this does not seem particularly logical.

#### **66. Do you have any comment on the proposed different approaches for larger and smaller waterways?**

While this does not affect our members directly, indirectly it does affect afforestation decisions where one land use has significantly more stringent requirements than another on the same land. The picture below serves to illustrate the difference between the NES-PF and stock exclusion regulations.



The waterway in this picture is well less than 1m wide and currently has full stock access. Under the NES-FW it will not be required to be fenced. In the background is a small woodlot that has been planted prior to the NES-PF and is to 1-2m setback, well within the minimum 5m setback under the NES-PF. The forested area will be generating minimal nutrients, *E. coli* or sediment during the growing phase and providing shading of the waterway. The only impact will be at a very short term spike in sediment at harvest time (likely minimum in this topography) and a temperature increase until shade re-establishes.

By contrast the farmed section will be receiving constant contaminant inputs and has no shading at any time. In such situations the disparity in the setback requirements of the two instruments does not seem logical and is not underpinned by science.

### **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?**

A key issue of concern to the FOA is how the various national and regional instruments dovetail together. Of particular concern is how the NES-PF interacts with the NPS-FM. Currently the NES-PF (regulation 6) provides the ability for councils to develop more stringent rules to give effect to the NPS-FM. Given most of the activities regulated under the NES-PF can have some impact on water, this effectively applies to all activities carried out under the NES-PF. The intent of regulation 6 was that the ability to be more stringent only be utilised where absolutely necessary - where a council has developed attributes for FMU's in their region, the assigned attributes are not currently being met, forestry is identified as a significant contributor to a particular attribute not being met, and the where current NES-PF provisions are considered inadequate to address the issues. As indicated by the NES-PF guidance document, it was anticipated a council would document this process through undertaking a full section 32 analysis to justify the need for additional rules.

In reality this has not been the case, with the few regional councils who have added rules, doing this with the simple justification that the rules relate to water quality. With the further development of the NPS-FM to include sediment and the introduction of an NES-FW the development of additional regional rules for forestry could proliferate, completely undermining the benefit of the NES-PF providing for clarity and consistency. If every region develops a different set of rules over and above the NES-PF we are effectively back where we started making the NES-PF redundant.

It is the FOA's strong preference that the final NPS-FM and NES-FW dovetail with the NES-PF in order to maintain as much as possible a consistent approach. One way this could be achieved is for the NES-PF to specifically articulate how the requirements of the NPS-FM and NES-FW apply to plantation forestry. Potentially this could be achieved by regulations in the NES-PF relating to compliance with freshwater attributes (once confirmed) for an FMU. This would then remove the need for greater stringency under the NES-PF to give effect to the NPS-FM. This issue is absolutely critical to the ongoing viability and workability of the NES-PF.

We note that this issue of clear alignment and interface between national instruments will extend beyond forestry issues. Given the significant number of national direction documents being produced, in our view it is essential that every effort is made to align and integrate the documents to work together. If not the current inconsistency, duplication and contradictions existing at a regional and district level will be replaced by an additional layer of the same at a national level, leaving councils and communities grappling with how to make them work.



## General comment in relation to discharges

The NPS-FM and the NES-FW fails to address the legal issue of how to deal with the diffuse and direct discharges of sediment from land where rural activities are undertaken. The NES-FW continues to confuse the issue by using terms such as ‘leaching’ and ‘contaminant loss’, rather than the RMA term ‘discharge’.

Furthermore, there is no clear recognition that rural land uses have diffuse and direct discharge of sediment and other contaminants from the everyday land use activity of growing grass and running stock. Despite referring to modelling undertaken in the Horizons and Waikato regions as to sediment loss (Action for healthy waterways page 65 Section 8.3 Improving farm practices through farm planning) there has been no reference to the research undertaken that clearly shows that there are sediment discharges from pastoral farms, not just from earthworks and or land clearance. We refer you to Waikato Regional Council Technical Report 2012/02 (*H Ritchie, Diffuse sediment in Waikato Waterways -Sources, practices for reduction and policy options*). The executive summary on pages 3 and 4 states that:

*“Sediment loss is driven mainly by precipitation, with geology and land use/ land cover explaining much of the residual difference between sites. Climate change is expected to increase sediment loss.”*

*Pasture slopes generate two to five times more sediment than comparable forestry slopes, except during forestry harvest periods. Harvest causes a rapid peak in sediment generation, but with good practice in harvesting, sediment loss can return to preharvest levels within one to two years. A twelve-year monitoring study of paired pine and pasture catchments, including the harvest period, showed that the suspended sediment yield from pasture exceed that of the pine catchment by 1.5 times (Eyles and Fahey 2006). This figure would be higher over the whole forestry rotation as pasture yields would exceed forestry yields in all years except the immediate post-harvest period.*

*Apart from consents associated with earthworks and forestry operations, sediment has not generally been managed through regulatory means.”*

As the NPS-FM and NES-FW are national directives we would expect that finally there would be clarification as to how to legally deal with diffuse and direct discharges of sediment and other contaminants from farms. With regard to provisions for discharges from rural land use the NES-FW is inconsistent with the provisions of the NES-PF. While this submission does not deal with any preferred legal approach there should be consistency at a national level. This is the opportunity to provide clarity in relation to land use and discharge rules.

Unfortunately, Part 3 (Farming) of the NES-FW does not provide clarification. Part 3 does not provide for any discharge regulation and in particular does not provide discharge regulations for the permitted activities. It is therefore assumed that the legal approach is that the activity regulations under Part 3 are empowered under section 30 (1) (c) (ii) and the effects of the discharges have been assessed to ensure the maintenance and enhancement of the quality of water in water bodies and coastal water and that no discharge regulations are required.

This would follow the practical considerations arising from the findings of the Board of Inquiry into the Tukituki Catchment Proposal meaning that it would not be appropriate or reasonably

practicable to include discharge rules in the NES-FW pertaining to diffuse discharges from farming activities. Subsequent cases have relied solely on land use rules (under s 30(1)(c)(ii) of the RMA) to control the effects of farming activities on water quality (e.g. P & E Ltd and Mawhinney).

Part 3 makes no provision for a regulation for a permitted discharge of contaminants in compliance with section 70 of RMA and nor does Part 3 make any reference to resource consent for discharges associated with the farming activities.

The drafting of Part 3 confuses the assumption that the above legal position has been undertaken. The different confusing regulations are as follows:

- a. Regulation 27 (3) (a) provides for a minimum permeability standard which must assume that there will be some discharge of contaminants. However, there is no reference to the regulation being an activity for a discharge rather than a land use activity.
- b. Regulation 29 (2) (a) has a similar provision.
- c. Regulation 29 (3) refers to measure to control run-off and contaminant loss but again no reference to the activity being an activity for a discharge rather than a land use activity.
- d. Regulation 38 (Contents of FW-FP) j) refers to action points to reduce nitrogen discharges but there is no provision for a discharge regulation.
- e. Regulation 38 (3) refers to contaminant losses but again there is no provision for a discharge permit for the contaminant losses.

The lack of clarity on this issue will lead to confusion when councils consider compliance with the NES-FW, when they consider the extent of any resource consent application and draft any related regional plans.

This could be clarified by:

- a. A clear statement in Part 1 NES-FW that the regulations are undertaken under section 30 (1) (c) (ii) RMA and that resource consents for diffuse discharges of contaminants are not required as the effects have been dealt with under the activity regulations.
- b. A clear statement in Part 1 that any direct discharge of a contaminants to land and or water under section 15 of the RMA will require a resource consent.
- c. Regulation 38 (3) (d) and (h) to be amended to identify the management of diffuse discharge of sediment to water bodies. Note that this proposes an assessment beyond just diffuse discharge of sediment from land disturbance activities.
- d. Add a section 6 to Part 1 as to identification of the matters where a section 15 discharge consent would be required for direct discharges of contaminants to water bodies.

Thank you for the opportunity to provide comment on this important discussion document.

Sally Strang



Chair, FOA/FFA Forest Resources and Environment Committee