
**Submission
of
China National
Forestry Group
regarding
Greater Wellington
Regional Council
Natural Resources
Plan – Plan Change 1.**



DECEMBER 14

Authored by:
CR Richards

Preliminaries



<p>*Submitter Name: Full name, or Name of Organisation / Company</p>	China Forest Group Company New Zealand Ltd
<p>Contact person for submission: (If different to above)</p>	Hamish McGregor
<p>Telephone no: (Not required)</p>	
<p>*Address for service: (Email, or physical address) Please note, an <u>email address</u> is the preferred method</p>	Hamish@forest360.nz
<p>*I wish to be heard in support of my submission at a hearing</p>	yes
<p>*I would consider presenting a joint case at the hearing with others who make a similar submission</p>	yes
<p>*I could gain an advantage in trade competition through this submission</p>	no
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<p>Please enter your feedback in the next worksheet "2) Feedback on Provisions". All of the provisions in the proposed change have been included so please place your comments in the corresponding cells. If you have questions on how to use this submission form please visit our Submitter User Help Guide or email one of our friendly team at regionalplan@gw.govt.nz</p>	

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Introduction

Following are the submissions of China Forestry Group (CFG) in response to the proposed Greater Wellington Regional Council Natural Resources Plan Change 1 (PC1).

CFG are submitting on the basis that they either will or could be significantly adversely impacted by the rules as proposed in PC1 and potentially in other whitua as the NRP progresses through future plan changes to adjust to the outcomes of other whitua processes.

Who are we?

CFG are owners of forests in the Greater Wellington Region. The forests are commercial plantations forests that occur in various parts of the wider region but include what were the Council owned forest assets that were sold as cutting rights by the Regional Council in 2018. CFG also own freehold forests in the Wairarapa and considerable estate nationwide.

Day-to-day management of the forests in the Southern North Island is undertaken by the forest management services firm Forest 360 (based in the Wellington Region) in accordance with management agreements and plans exercised between the two parties. All management of the past GWRC forests is undertaken in accordance with the terms and conditions of the 'Cutting Right' agreements including regular reporting to and liaison with GWRC staff on matters including management and coordination of risks and interactions related to the extensive public use of parts of the estate, protection of important historic features, biodiversity matters and regular operational compliance monitoring.

Forest 360 hold FSC environmental certification for the estates that are the subject of this submission.

Local forestry operations from planting and replanting to harvesting are undertaken by workers and contractors from the general region while products from the forests supply both regional processing plants and the Wellington Port.

CFG and its associates are thus part of the communities of Whaitu Te Whanganui -a-Tara and Te Awarua-o-Porirua and their outputs and efforts contribute directly to the social, economic and environmental fabric of the local and wider region.

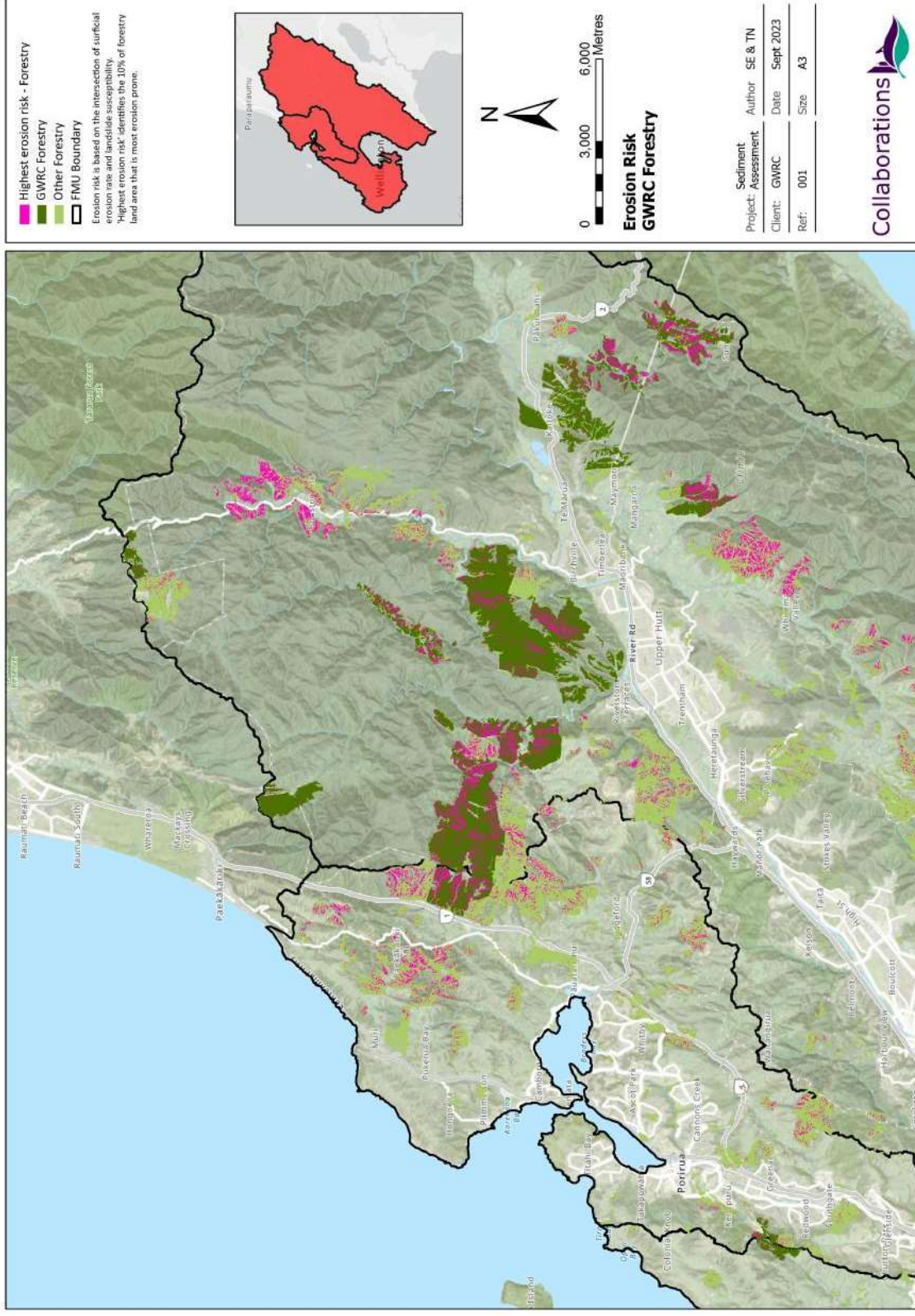
Nature of the Estate

The CFG estate as relevant to the two Waitua, the subject of this submission, are listed in the table 1 below and illustrated in Map 1

Table 1: Summary of CFG cutting right forests and minimum % lost production.

Whaitua	Forest	Gross Area	Net plantation	Plantation (high risk) (ha)	%lost	Other infrastructure & reserves (ha)
Te Awarua-o-Porerua	Puketiro	254.2	243.7	33.3	13.6	10.5
						0
Te Whanganui-a-Tara	Puketiro	1106.9	1077.4	131.9	12.2	29.5
	Akatarawa	45.6	43.6	0.6	1.4	3
	Hukinga	299.7	233.8	25.7	11	65.9
	Mangaroa	146.3	141.0	23.3	16.5	5.3
	Puketiro	227.3	196.4	35.1	18	30.6
	Pakaratahi	534.7	464.8	33.2	7	69.9
	Valleyview	1124.7	1085.7	47.5	4	39
	Whakatikei	153.7	149.3	1.3	0.8	4.4
Total				331.8	9.1	258.1

Map 1 CFG estate affected by proposed plan.



Key Matters of Submission

Form of Submission

CFG is deeply concerned about several aspects of proposed Plan Change 1. In general, we believe many of the proposals are poorly founded and require considerable research and explanation in a form that is not well catered for by the prescribed tabulated format anticipated by GWRC. To address this, more detailed discussion around the points of concern listed below are made in the main body and appendices of this submission. The prescribed format and responses are referenced to these arguments in part 2 of this submission.

Points of Concern

CFG note the following as being the key areas of concern.

1. A flawed and short-changed process for consultation/representation with directly impacted sectors.
2. Extension of controls beyond the recommendations of the whitua committee reports.
3. A necessity of rules (as applied to forestry) that are not supported by Council's own data and past records.
4. Rules that if imposed, are unable to be implemented in practice without writing off a considerable amount of additional estate due to the spatial logistics of harvesting and roading.
5. There appears to be no consideration of the ETS and other cost liabilities contingent upon non-replant of land retired by nature of the PC1 rules.
6. Deficient execution of duties in - NES-Regulation 6 Stringency.
7. Improper and inadequate - Secn 32 analysis.

CFG urge GWRC to remove the sections of PC1 related to forestry, align their rules to those of the NES-CF and set a path to work collaboratively with industry participants and land-owners to implement good practice, and where needed, engage on how to refine and plan land management outcomes that will fulfill the objectives without excessive bureaucracy and cost.

Part 1

Submission on issues of concern

1.1 Consultation and engagement process.

CFG acknowledge that plan change 1 is a necessary response to the requirements of the NPS-FW and that given the generally poor state of freshwater throughout many parts of NZ, there are complex interactions and many interests to be recognized in any rule-based response. It is also noted and acknowledged that the formation of the whitua committees was a genuine attempt to ease the process through by resolving issues before plans or rules were made. However, we note that as far as we can see from a review of a sample of the proceedings of the waitua committees :

- Te Awarua -o-Porerua Whitua (TAP) operated until 2018 and formulated an action plan and recommendations published in April 2019¹.
- Te Whitua te Whanganui-a-Tara (TWT) seems to have continued a little longer with its implementation plan² published in Nov 2021
- As far as can be determined at the formulation of the Whitua Committees, there was only one identifiable party with forestry expertise in TAP and that party was only represented within the committee until 2018. There appears to have been no such expertise base represented within TWT.
- Rule-making is a role of the Council – it is of concern therefore that over the gap in time between the completion and reporting of action plans and the publishing of the PC1 rules, GWRC did not first undertake further engagement with sectors that clearly were going to be directly, and potentially significantly, adversely impacted as a consequence of the divergence of GWRC’s own thinking as to the rules they believed were required to achieve the freshwater objectives and actions arising from the whitua committees’ recommendations.

¹ <https://www.gw.govt.nz/environment/freshwater/protecting-the-waters-of-your-area/te-awarua-o-porirua-whaitua/>

² <https://www.gw.govt.nz/environment/freshwater/protecting-the-waters-of-your-area/whaitua-te-whanganui-a-tara/>

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- It is noted that replanting on nominated high risk land is not included in the notified plan as a non-complying use but that this is intended and will aim to be rectified by way of submissions by GWRC³. While commentary around this is included in the Section 32 document, some submitters may not be aware of or study this analysis. It is inappropriate that GWRC engage in a less than transparent mechanism to insert rules they claim to have intended but erroneously failed to include in the public documentation submitters will place reliance upon.
 - It is clear that PC1 proposed rules are a material change to rules in the recent GWRC NRP. Given the nature and significant impact of the proposed changes, good protocol would suggest there should have been direct engagement with the potentially seriously adversely affected parties in a reasonable and timely fashion. To notify such significant changes in late October with submissions closing in mid-December while documents and technical information, amounting to over 1000 pages has to be studied and understood, amounts to nothing less than bad faith.
 - As described in the following sections, GWRC's placing reliance on the work of the whitua committees as the basis for their rules does not stand scrutiny and of itself is an act of bad faith.

- To the extent that forestry was represented at all within the expertise in the whitua deliberations, and particularly the latter periods, the outcomes proposed in PC1 arise in an environment of direct under representation and engagement with sectors that have the potential to be significantly adversely impacted.
- To the extent that the proposed PC1 rules reflect a material departure from any previous discussions or involvement in any venues open to the sector, GWRC should have directly sought to engage with the sector to understand the wider implications and practicality of the types of rules it proposed.
- The recommendations of the respective whitua committees would not have raised concern from the sector. Those recommendations were underpinned by an expectation that the sector and GWRC could and would work constructively within the framework of existing tools available, and in doing so should be able to achieve the water quality objectives within the two whitua.
- The subsequent outcomes are materially different in every respect and represent a gross breach of faith in the RMA public process, as does the extremely limited timeframe required to research and engage in the current submission process and the attempt to use Council submissions to rectify material oversights not included in PC1.

³ Pers comm – Email from GWRC D.Boone Nov.8th 2023

1.2 Controls beyond the recommendations of the Whaitua Committee.

CFG Acknowledge the work of the whaitua community-based committees. While we have concerns that in their formulation, operation or engagement, there appeared to be a paucity of involvement with sector expertise that might have added value to the process, it is clear upon review of the final implementation plans presented in 2019⁴ and 2021⁵ that there was nothing arising from those workstreams and recommendations that would have been regarded as unreasonable. Upon evaluation of the work of the whaitua committees, it has been astonishing to identify the major disparity between the recommendations of the whaitua committee reports and the proposed rules of PC1.

- It is notable that in respect of Forestry, TAP made the following comment *“The NES-PF allows for more stringent rules in a regional plan to be set to give effect to an objective developed under the NPSFM, including more detailed local-scale assessments and mapping of erosion susceptible land that would trigger consent. The Committee considered whether more stringent rules were required to achieve the sediment objectives and concluded that the permitted framework of NESPF should be given time to be implemented. The Committee did, however, think it was important to ensure the forestry operations were carried out in compliance with good practice and the NESPF requirements and recommended all permitted forestry operations were monitored for compliance and enforcement action taken where necessary.”* The Committee also concluded that it was important to improve understanding and mapping of erosion prone land at the local whaitua scale to inform future planning; this has been incorporated into recommendations in section 11.1.
- It is notable that in respect of the specific recommendations ([Appendix 1a](#)) of the TAP committee, and reflecting their commentary above, NO recommendation was made that plantation forests should be retired nor that there was any specific identifiable need for high levels of stringency over and above that already available through good implementation and monitoring of the (then) NES-PF.
- It is notable that in respect of the specific recommendations of the TWT committee ([Appendix 1b](#)), no recommendations were made in respect of plantation forestry that required its retirement and removal. Recommendations did follow the theme of support in, and for, good land use planning techniques and property scale management in high erosion

⁴ <https://www.gw.govt.nz/assets/Documents/2021/11/Te-Awarua-o-Porirua-Whaitua-Implementation-Programme.pdf>

⁵ https://www.gw.govt.nz/assets/Documents/2021/12/Te-Whaitua-te-Whanganui-a-Tara-Implementation-Programme_web.pdf

risk areas and support and monitoring and enforcement of good forestry practice subject to the (then NES-PF).

- In effect, while recognizing some risks and potential water quality risks from forestry, neither whitua committee recommended an explicit need to retire areas of production forestry from the relevant whitua land areas.
- Neither whitua committee considered there to be any requirement for a major strengthening of the regulatory regime. Instead, both recognized the existence of the NES-PF (as it currently was) and urged a focus on education, correct implementation and sufficient monitoring and where necessary, enforcement, all aspects of which were tools available to council in the existing regime.
- The whitua recommendations also sought close liaison between the sector and GWRC land management staff when looking at land use management planning around high-risk erosion sites.
- Neither whitua committee made recommendations seeking to address an explicit adverse link between forestry as a productive landuse and the water quality attribute standards or objectives they sought to rectify or achieve.
- As documented in the next section, CFG contend that GWRC have no basis in data for justifying the proposed PC1 rules.

- The recommendations of the respective whitua committees would not have raised concern from the sector about a pathway to unreasonable or draconian rules requiring significant and focused responses.
- The Whitua Committee's conclusions and recommendations are considered a measured, reasonable and appropriate responses to the water management situation that prevails today and the approaches to solving it.
- Notwithstanding the recognition that not all data that might be desired was available, and an absence of such data was not a reason to avoid mitigatory actions, it appears data that was available did not trigger a perception of need or urgency for the whitua committees to recommend significant and stringent changes to the regulatory framework surrounding forestry.
- It is difficult to conclude other than, in preparing PC1, GWRC has deviated significantly from the recommendations of its own whitua committees of its own accord and for its own reasons.
- The subsequent outcomes in PC1 as they relate to forestry are materially different in every respect in PC1 and represent a gross breach of faith in the RMA public process and the work of the whitua committees.

1.3 Rules (as applied to forestry) that are not supported by Councils own data and past records.

The work of the whitua committees was to set targets and make recommendations on methods to achieve where necessary, improvements across a range of water quality measures in a manner that reflected community needs and aspirations based on the cross section of community knowledge, skills and experience called upon within the committees. The base starting point for these deliberations was the available data arising from the GWRC water quality monitoring sets and the NoF framework that established national bottom lines for key water quality attributes.

The two whitua committees established, over the course of their deliberations and the catchment areas they had defined, the attributes that defined the water quality in those catchments, the current state of those attributes and the objectives they sought to see the attribute obtain if it was managed correctly. The schedules of those current and future state attributes by catchment system are in [Appendix 2a](#) (TAP) and [Appendix 2b](#) (TWT).

Available water quality monitoring data from GWRC were obtained from the council's website portals. Data specifically relevant to sediment⁶ and broader ecological health⁷ were extracted as these were the attributes identified as most likely to be influenced by forestry activity. The most recent data relevant to the catchments was listed as collected in the 2021/22 years.

This data is summarized in [Appendix 2c](#) and [Appendix 2d](#).

The following discusses those monitoring results in relation to generally observable forestry harvesting and earthworks activity over the period of the water monitoring and the whitua committees deliberations.

Table 2 below, summarises the match between catchments or catchment groups with plantation forests present in them, and the relevant water quality attributes from monitoring data.

⁶ <https://www.gw.govt.nz/annual-monitoring-reports/river-water-quality-and-ecology/sediment.html>

⁷ <https://www.gw.govt.nz/annual-monitoring-reports/river-water-quality-and-ecology/ecology.html>

Table 2: CFG Forest distributions in relation to Whaitua sub-catchments and monitoring sites.

Whaitua	Whaitua catchment	Stream with plantations	Monitoring site	Plantation
Te Awarua -o- Porirua	Pouewe	Horokiri Headwater	Horokiri at Snodgrass	Prt Puketiro
Te Whanganui-a-Tara	Wainiuomata small forested and Te Awa Kairangi forested mainstems	Whakatikei Akatarawa Akatarawa Akatarawa Pakaratahi	Whakatikei at Riverstone Akatarawa at Hutt Akatarawa at Hutt Akatarawa at Hutt Pakaratahi r	Prt Puketiro Hukinga Valley View Akatarawa Pakaratahi W
	Te Awa Kairangi rural streams	Mangaroa	Mangaroa at Te marua	Mangaroa

Forestry activity in the catchments

Pouewe Catchment–Horokiri r

This catchment is bounded on the west side and upper reaches by exotic and native forest. To the east and including the tributary Paekakariki catchment, the land is largely forested with reverting native scrub hardwood, gorse and small plantations. The lower reaches and valley floor are pastoral and lifestyle or other rural landuse. The valley floor is the route of the transmission highway that involved major earthworks over many years.

Aerial sequences indicate little if any harvesting in the catchment before 2009. Harvesting involving a small percentage of the total catchment commenced in 2015 and finished around 2017. By 2020, green up of much of this area was well advanced while new harvesting commenced at the end of 2022 in another area. Significant riparian retention is visible in parts of this later area.

For this Horokiri catchment of approx. 3,500 ha total, an evaluation of harvested area for the 20 year period 2002-2021 indicated very small proportions of the catchment have been exposed to potentially elevated levels of sedimentation, above baseline (i.e. native cover equivalent), from forestry activity (Table 3). For 11 of the 20 years there was no activity or had been no activity over the previous 4 years indicating a likelihood of natural or near natural baseline yield from those areas over the 11 years. All harvesting was undertaken prior to the existence of the NES-PF regulations.

The Whaitua Action Plan set sediment targets for the lagoon receiving environments with major reductions (40%) required an implied from contributing catchments rather than targets specified for the streams themselves. Medium term objectives of NoF state 'A' were sought for MCI and native fish in the streams.

Monitoring results for sediment indicated: Clarity – Poor - NoF status ‘D’, Deposited sediment - NoF status ‘A’ (modelled status was ‘B’), suspended sediment and total suspended sediments – lowest band.

Monitoring results for stream ecology indicated: MCI 107 – NoF status B, and % EPT taxa and Overall Habitat Scores sitting in the medium ranges.

An ecologist’s report⁸ for Puketiro forest referred to fish survey data at points adjacent to part of the plantation in an upper section of the Horokiri.r that showed high rankings for the presence of diadromous fish species. This suggests at least reasonable water quality at that location.

Table 3: Progression of harvesting in the Horokiri stream.

Period	Total catchment	Max harvest Area/yr (ha)	Max harvest area (%catchment) (2013)	Average harvest area (% of total catchment)	Max cumulative exposure ⁹ (ha)	Cum exposure (%Catchment) (2014)	Average cumulative exposure ¹⁰
2002 - 2021	3,500	88	2.45%	0.4%	201	5.6%	1.61%

Given the timing and scale of forestry activity, the small percentage of the catchment under harvest over the prior 20years, large proportions of the catchment under closed canopy forest (exotic and native) at any one time, and the large percentage of the catchment under livestock management as well as the immediate proximity of major highways and highway construction, it seems unlikely that forestry is having the significant impact that has led to or is sustaining the relatively poor state of the Horokiri.r.

Te Awa Kairangi forested mainstems-Whakatete.r

This catchment is overwhelmingly dominated by permanent indigenous forest but with exotic plantation forest occupying some of the middle reaches and native reversion and urban development the lower reaches.

Aerial sequences indicate harvesting and earthworks activity started around 2009 through to 2017. After a change of forest management around that time, further harvesting continued at least through to the years of the latest reported water quality monitoring. By 2022 all pre 2017 land was under full canopy cover.

The Whaitua Action Plan set sediment targets for streams and rivers in the catchment to meet NoF state ‘A’ for clarity and deposited sediment and NoF state ‘A’ for MCI and native fish.

⁸ Ecological Assessment of Puketiro & Valley View Forests- Enviro-Research Sept 2020/May 2021

^{9 & 10} The accumulation of harvested areas over 4 years – the approximate period from year of harvest of the first block after which sediment yield will have returned to near baseline.

Council monitoring results indicate clarity is at NoF 'A' status as is deposited sediment – This is despite modelling of these attributes indicated they were expected to be 'B'. MCI for this river is currently 'A', while EPT% and overall habitat are in the highest ranges.

In this catchment the fact that modelled NoF status attributes were lower than actual, possibly reflect assumptions about the effect of the harvesting in tributaries all of which were modelled to be even lower than the mainstem river. Given that harvesting and earthworks have been in train for an extended period up until the latest published monitoring, and given assumed effects are expected to be cumulative downstream, the fact that this river site is already at NoF 'A' status for the key attributes suggests the effects have not been as significant as assumed.

While no MCI or water quality monitoring data is available from the Whakatikei at the plantations, a survey from a site between Valley view and Puketiro revealed a presence of 5 fish species, 4 diadromous and 1 non-diadromous which was ranked as 'Average' and likely representative of fish diversity in the mid-catchment area including upstream of the plantations.¹¹

It is also important to note that almost all the harvesting and earthworks undertaken in the contributory forest was undertaken pre the National Environmental Standard for Commercial Forestry (NES-PF/CF), and at the time of the transfer of management in 2017-18, significant sums were required to remediate what were recognized poor practice in harvesting and earthworks conducted prior to that date. See Photo 1 & 2.

Te Awa Kairangi forested mainstems–Akatarawa r

This catchment is overwhelmingly dominated by permanent indigenous forest but with exotic plantation forest occupying some of the lower hill reaches and pastoral development the lower valley floor.

Aerial sequences indicate significant harvesting and earthworks activity started in the main plantation forest around 2009 through to 2014. Small areas were harvested after 2017 but by that stage green-up was well advanced in earlier harvest sites and in latter sites by approx. 2020.

The Whaitua Action Plan set sediment targets for streams and rivers in the catchment to meet NoF 'A' classes for clarity and deposited sediment and NoF state 'A' for MCI and native fish.

Council monitoring results indicate clarity is at NoF 'A' status as is deposited sediment. MCI for this river is currently 'A', while EPT% and overall habitat are in the highest ranges. Such MCI scores were also returned from the river within the Akatarawa plantation forest (part harvested) where the MCI was 124 (excellent) and the TiCI score of 123.3 (pristine)¹².

¹¹ Ecological Assessment of Puketiro & Valley View Forests- Enviro-Research Sept 2020/May 2021

¹² Assessment of ecological values of Hukinga Forest – Enviro-Research. 2022

Given that harvesting and earthworks have been in train for an extended period up until the latest published monitoring, and given assumed effects are expected to be cumulative downstream, the fact that this river site is already at NoF 'A' status for the key attributes suggests the effects of forestry activities have not been as significant as assumed.

Te Awa Kairangi forested mainstems–Pakaratahi r

This catchment is overwhelmingly dominated by permanent indigenous forest but with exotic plantation forest patches occupying some of the lower hill reaches and pastoral development the lower valley floor.

Aerial sequences indicate no significant harvesting and earthworks in this part of the catchment. A small area of harvesting could have potentially influenced the water quality monitoring results of the Hutt river at the Te Marua intake site. Other harvesting in this forest area drains into a tributary that could only influence the Mangaroa monitoring site.

The Whaitua Action Plan set sediment targets for streams and rivers in the catchment to meet NoF 'A' classes for clarity and deposited sediment and NoF state 'A' for MCI and native fish.

Monitoring results indicate clarity is at NoF 'A' status as is deposited sediment. Interestingly, MCI for this river is currently 'B', while EPT% and overall habitat are in the upper middle ranges. Given no harvesting and a dominance of closed canopy vegetation in the catchment, it seems likely that the sample site location within pastoral landuse or some other factor is influencing the lowered results.

At the Hutt river site, clarity, deposited sediment are NoF 'A' status while MCI and Habitat measures mirror the Pakaratahi site.

Te Awa Kairangi rural streams–Mangaroa r

This catchment broadly aligned NE-SW, is overwhelmingly dominated to the SE by permanent indigenous forest in the side tributaries draining the Rimutaka ranges but with exotic plantation forest patches occupying some of the lower hill reaches. However, the main route of the Mangaroa after exiting the ranges, flows along and adjacent to pastoral farm and rural lifestyle landuses.

Aerial sequences indicate the only harvesting and earthworks in this part of the catchment commenced around 2018 and was mostly completed around 2020. Greenup is well underway in most parts by 2022 and riparian retention is evident.

The Whaitua Action Plan set sediment targets for stream and rivers in the catchment to meet NoF 'C' class for clarity in the short term and 'A' in the long term, and 'A' in the short term for deposited sediment. A NoF state 'B' is sought for MCI and 'B' short term and 'A' long term for native fish.

Monitoring results indicate clarity is at NoF 'D' status although deposited sediment sits at 'A' and suspended sediment and total suspended sediments are in low ranges. MCI for this river is currently 'C', while EPT% and overall habitat are in the upper middle ranges.

With low suspended sediments and given the low proportion of the total catchment subject to recent or long-term harvesting and earthworks, it seems unlikely that plantation forest activities are a major factor in the poor clarity and MCI attribute states. The long length of the main stem of the catchment proceeding through pastoral and agricultural land use is a more likely explanation. The tributaries that are under pine forest were modelled at a higher status than the mainstem. While this may reflect the harvesting status at the time the modelling was done, it also reflects the established science that over a long time series, plantation forests will generate better water quality than current pastoral use.

An ecologist's report for Mangaroa forest¹³ found NIWA data that although dated (2002), showed at the time, that Cooleys creek that flows adjacent to Mangaroa plantation forest had fish species densities of average and high for three diadromous native species and high for Brown trout. This compares with recent 2018 data from the main stem of the Mangaroa that showed lower rankings and low for Brown trout. The view was expressed that Colletts stream that runs through the center of Mangaroa forest is likely to exhibit similar results to Cooleys creek. While not a replacement for actual water quality data, the presence the fish listed in the surveys give an indication that the water quality is at least not bad in the small plantation tributaries and likely better than the main stem of the Mangaroa r.

Plantation Forest spatial and temporal considerations.

It is well recognized that forest harvesting and earthworks can locally and temporally raise sediment levels during and in the immediate aftermath of such operations. Over the long run period of a rotation however, impacts on waterbodies are low and often trend toward baselines established for native forest areas¹⁴, especially if riparian buffers are retained (or created as is now required).

Such impacts are also much reduced if harvest sites are disaggregated in time and space, a feature that is typical in much of the plantation cover in the TAP and TWP whitua and will repeat and increase slightly in disaggregation as a function of the rotational age of the stands that make up the plantations. As illustrated in Table 3 and the preceding paragraphs, forestry activities have been undertaken over several preceding years in some catchments displaying good water quality results. Occupying relatively small proportions of the total catchments in which they are located, the extended timeframes for harvest have still not resulted in NoF attribute values declining below objectives. At the same time due to the spatial layout of the surrounds, expansion of plantations, other than onto farmland, which would reduce all contaminant loads in the long term, is not a

¹³ Ecological Assessment of Akatarawa Saddle, Maungakotukutuku & Mangaroa Forests – Enviro-Research May 2021

¹⁴ <https://www.nrc.govt.nz/media/hcft3fi/pakuratahitamingimilandusestudyreportchapter5hawkesbayrc.pdf> (note: this work is underway to repeat this study from the end of the second to into the third rotation.)

possibility. Thus, in combination, there can be no threat of increased levels of impact, only a natural progression diminishing effects over time in tributaries to rivers that are already meeting NoF targets.

In other catchments, particularly the Horokiwi and Mangaroa, council monitoring results are relatively poor. While harvesting in portions of these catchments has been undertaken in recent years, around the time of the latest monitoring results, the proportions of the total catchment areas subject to harvest are low. In both catchments the relevant waterbodies pass through large proportions of pastoral agricultural land and in the case of the Horokiwi and its main tributary, remain close to long reaches of heavily used highway and the earthworks associated with the recently completed Transmission Gully SH1. Given the long-standing knowledge about various land use effects, it seems highly likely given the current status of the streams, that a focus on the other land uses will generate the standards required notwithstanding that updated and upgraded attention to sediment controls in forestry earthworks is a legitimate expectation.

It appears that GWRC have either not recognized or given no consideration to the temporal effects of forestry in relation to land use contaminant effects. All land use creates contaminant effects, however a short term increase in adverse effects that then return to levels similar to natural baseline especially if assisted by other land use good practice, is very different to an adverse effect (even when mitigated by good practice) arising every day from a land use such as farming or urban use. By definition that becomes a permanent 'pressure' change to the environment.

Forestry Practice - Landuse

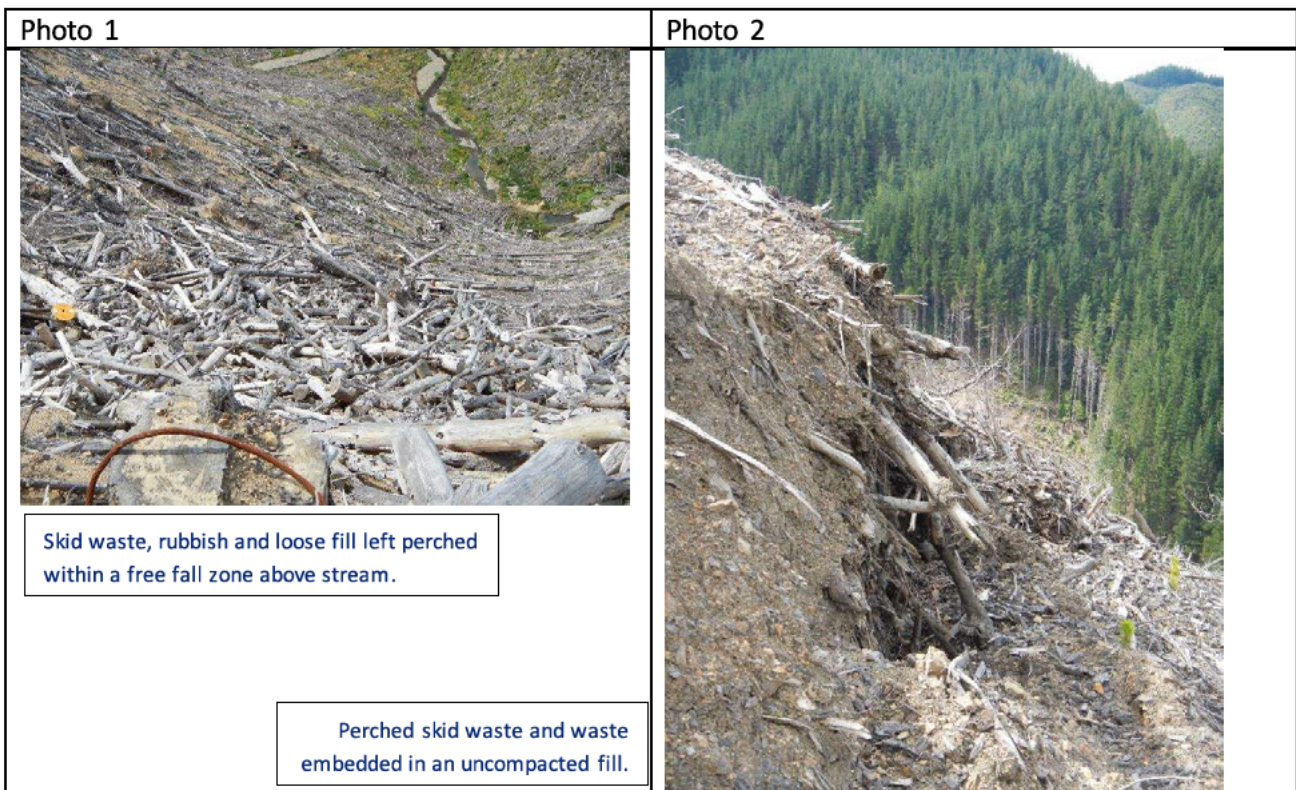
As identified in the sections above, in some of the catchments and forests where activity has continued over several years, or even relatively recent works, that activity occurred prior to the introduction of the NES-PF now NES-CF. In effect GWRC is basing its assessments of the efficacy of the regulatory framework upon standards that predated the current regime. This includes first rotation planting that had no regulated riparian setbacks from streams, nor regulation related to harvesting around or over streams nor discharge limits.

It is noted also that neither of the whaitua committees recommended the introduction of stringent new rules, instead advocating that the NES-PF be given time to adjust and bed in, backed up by, education, monitoring and where and if necessary, enforcement. These reflect similar sentiments to those documented in the guidance documents on implementation of the NES-PF produced by the Ministry of Primary Industries. As pointed out and illustrated in photos 1 & 2, prior to 2017/18 when GWRC sold cutting rights to their forests, harvesting and earthworks standards in the forests within which CFG have cutting rights were of a poor standard with significant expenditure required to mitigate risky situations.

In forests this company is involved with, monitoring has been undertaken quarterly. One matter that is notable from those, is the constructive interaction between monitoring staff and forest management to achieve and where needed in the dynamic environment of a harvesting operation, test alternatives to achieve the best results possible.

Matters that have apparently been overlooked is that in addition to requirements for setbacks around streams and wetlands that didn't exist in many cases prior to the introduction of the NES-PF (i.e. mature forests preceding the NES-PF may well have been planted to the stream edge), most forestry companies review their plantable boundaries after harvest. The purpose is to avoid repetition of past planting mistakes that lead to difficult, dangerous, expensive, or environmentally risky plantation layouts. As a result, most second rotation estates see increased non-productive reserve, retirements, and riparian areas, and in many cases riparian buffers are much larger than the minimum.

To some extent past retirements and riparian exclusions are visible in CFG's estate in various locations. The results already happening over the last few years reflect the same sentiment sought by the whitua committees in respect of promoting good land use and land use decision making, education, and working with Council land managers to achieve good outcomes. The difference here is that it has already been happening, apparently unrecognized, for some years.



Forestry Practice – Earthworks

There is no argument that earthworks at the time of harvest is the single largest manageable contributor to sediment yield in forestry^{15,16}. These concerns were recognized in the numerous regulations that were built into the NES-PF and the further modified NES-CF, to target sediment generation including, the requirement for an earthworks management plan, discharge standards, and the preparation of a range of best practice guides and an earthworks manual. All these responses are somewhat analogous to the requirements embedded within farm plans.

It is noted that in Policy WH.P28 clause (b) refers to the requirement for preparation of erosion and sediment control plans that are implemented through rule WH.R20(b) and Schedule 34, which references the forest practice guides. All these guides have been being rolled out subsequent to or about the time of the formal introduction of the NES-PF and inclusive of the disruption of Covid, have had little time to bed in as was recognized by one of the whitua committees. It is also relevant that at least in respect of the GWRC's web available data, the state of stream water quality reflected the cumulative effects of activities almost entirely pre-dating the NES-PF.

Setting a discharge standard that the "concentration of total suspended sediment from the plantation forestry shall not exceed of 100g/m³" also poses problems in that such a quantum does not appear to be relatable to a particular stream attribute or the topography, geology, soils of the whitua. It is a uniform standard irrespective of activity or location/circumstance and appears principally designed around the use of point discharges to water from large sediment capture and concentrations ponds with fixed infrastructure with or without flocculation, neither of which can be utilized across many locations in a forestry context. The 100g/m³ is also difficult to implement, requiring laboratory analysis, is unable to deliver real-time feedback to practitioners and has no temporal component which is highly relevant to the forestry situation.

In the forestry earthworks context, limiting exposure, cover, bunding and dispersal to land with or without primary treatment are the main methods by which sediment can be controlled. Forestry practice guides focus on the tools to achieve this. Discharges as do occur should be largely diffuse. A corollary is the requirements being made of farm plans in the agricultural sector.

The visual clarity standard that accompanies the suspended sediment standard is included, presumably, to accommodate wet periods when a stream is flushing or streams with a naturally higher sediment load. This is far more relevant to any rural landuse and is able to be applied on the spot in real time to diffuse discharges to water. Notwithstanding, there is a perversity in the

¹⁵ Sediment sources and delivery following plantation harvesting in a weathered volcanic terrain, Coromandel Peninsula, North Island, NZ. M.Marden, D.Rowan C.Phillips Australian Journal of Soil Research 2006

¹⁶ Water Quality in New Zealand's Planted Forests: a review B Baillie D Neary NZ Jour of Forestry Science 2015

requirement for a lower decline in visual clarity as described, of 20% in class 1 and schedule F1 rivers because often those rivers come from areas inclusive of plantation forestry. Allowing a higher clarity loss in lower quality rivers is acknowledging a continuation of higher levels of contaminants.

CFGC contend this whole area needs reconsideration by GWRC including an approach focused on education, training and where necessary enforcement as recommended by the whitua committees, not a proliferation of new rules and variants of the NES-CF.

In developing PC1 rules as they relate to forestry, GWRC:

- Have taken little if any cognizance of the spatial and temporal patterns of harvesting over the past years and sought to understand the influence that might or might not have had on the attribute states of relevant catchments.
- Appears to have placed reliance on the NPS-FW obligations to avoid delaying actions notwithstanding incomplete information. However, although the available data was not well set up to differentiate between land use effects at sub-catchment levels, the data that was available indicated that where catchments were largely forested (native and plantation) and with some harvesting over extended periods, NoF targets were being met already and could be expected to continue to be so.
- Overlooked that in other catchments where plantations were a relatively small % of catchment area, catchments with large sections of their reaches aligned with pastoral and urban infrastructure had markedly poorer attribute results. Such outcomes would conform to the generally recognized NZ wide trend that water quality attributes decline in order from undisturbed native forest, through exotic forest through pastoral land use down to urban.
- Have assumed that the regulations for earthworks and harvesting under the NES-PF have no efficacy toward achieving the goals of the NPS-FW, yet at the time of the collection of published data, the NES-PF was barely law, and most of the harvesting that might have contributed to any adverse freshwater outcomes had been undertaken in the prior decade. In places within CFG's Cutting Rights areas, past standards were below those considered acceptable when the first transfers to cutting rights occurred in 2017/18.
- Failed to give any account to the fact that as forests progressed through their first to their second rotations, normal practice and NES regulatory requirements saw provision of increased setbacks and retirement and reservation of problematic harvest areas.
- Overlooked recognition that while not all data that might be desired was available and an absence of such data was not a reason to avoid mitigatory actions, it appears data that was available did not trigger a perception of need or urgency for the whitua committees to recommend significant and stringent changes to the regulatory framework surrounding forestry.

1.4 Impractical rules that will require writing off much larger areas.

CFG have concerns related to the approach taken by GWRC to define areas of 'high erosion risk' and the application of those findings to the landscape. We believe these to be totally unworkable in any practical sense and will result in a de facto ancillary write-off of much larger areas of the estate than the figures estimated by GWRC.

In the first instance while we do not have the available time nor resources to delve into the detail of some of the modelling used and do not question the accepted generality of their use, we do have specific concerns that we are unable to verify have been adequately accounted for and will therefore compromise the outputs and conclusions generating the GWRC's response.

The universal erosion model: While this is a well-recognized formulae and its application to estimate sedimentation arising from open exposed soil surfaces from earthworks, predictions from cutover are likely to significantly overestimate yield. This is because a cutover site remains a roughened surface, with (normally) a high component of topsoil with its inherent organic layers, and a widely scattered overlay of light slash and branches, all of which serve to ameliorate waterflow concentration and trap sediment on site.

At the same time forest practitioners often make use of those light slash resources on site to assist in retention of sediment on site. This is a technique with a purpose analogous to the GWRC Sediment and Erosion Control 2021 techniques of 'site roughening' and 'site cover'. Previous research¹⁷ has confirmed that sediment contributions from poorly controlled earthworks far outweigh those from the cutover and that the focus needs to be on the earthworks and operational and infrastructural intersects with flow paths.

Landslide susceptibility: We note the modelling that eventually led to the mapping of the highly erosion prone areas, based on Lidar surfaces and principally, on slope and rainfall, led to the map outputs. Our concern is that a lidar surface does not represent the underlying bedrock surface. While there will often be a general correlation between visible surface and landslide susceptibility the actual trigger for a landslide event is normally an interaction between the underlying bedrock topology, bedrock nature, rainfall intensity and the surface soil composition and topology. It is well observed that in some more robust geologies it is sometimes slightly less steep topography that is subject to landslide because the soil is deeper and/or subterranean waterflow is concentrated and /or the soil regolith becomes more saturated, particularly in mid slope or upper depositional zones.

¹⁷ <https://ir.canterbury.ac.nz/server/api/core/bitstreams/87e10ad1-7cfa-4002-8066-fcd1be5bbc97/content>

Underlying geology and geological form is a critical component behind the likelihood and susceptibility of slopes to mass movement erosion, the form of erosion that on any given site, if it happens, contributes substantially greater sediment yields than surficial erosion. These factors were taken into account in the development of the NES-PF ESC layers which in this region recognized the relatively stable nature of the underlying Mezoic greywacke¹⁸. While far from perfect, the ESC was designed as a national surface useable by everyone, that can be contributed to, updated and modified as more relevant data and technical tools become available.

GWRC in creating its own erosion susceptibility layers from a very unimproved basis of information that by its own admission excluded geological considerations and has not been peer reviewed, appears to have arisen simply to support a set of council staff-initiated methods and rules that were never recommended by its own community whaitua. Furthermore, for the reasons noted above, the 5m² resolution of the underlying lidar and the method applied will invariably often be wrong and a poor predictor of stability in the field, in practice, leading to the perversity of some areas being retired that in practical terms were not at risk of slipping, while other areas not retired may suffer landsliding in severe weather events.

It is difficult not to conclude that the introduction of the PC1 rules around forestry and the disassociation of those rules from the recommendations of the whaitua committees reflects a reaction of council staff to the events of Cyclone Gabrielle in Tairāwhiti. The soils and most importantly the underlying geologies that drove the mass landslide storm response in that region are however very different to the situation in the TWT & TPT whaitua.

Pixelation of estate: The derivation of the 'Highest Erosion Risk – Plantation' surfaces by nature of its application method have clearly led to a "pixelation" of the forestry estates. It is beyond impracticable to consider that a forest manager can manage an even-aged radiata plantation stand on steeper terrain in accordance with a rule set that in theory on one patch enables forestry to continue and a few metres away disallows it, all on a repeating and disaggregated patch pattern.

Harvesting feasibility is determined by topography, boundary constraints (reserves and riparians etc) and machine configurations. On steeper hills cable systems are the main extraction technology and cable systems involve extraction in straight or near straight lines. Similarly, roads have gradient and alignment limitations dictated by topography, access points, construction machinery and truck configurations. Mid-slope roads do not have the luxury of maintaining required geometries while zig

¹⁸ <https://www.gns.cri.nz/our-science/land-and-marine-geoscience/te-riu-a-maui-our-continent/geology-of-new-zealand/urban-geological-maps/wellington/>

zagging in and out or around retired patches. The consequential effect is that while the GWRC data suggest that in the estate GFG manages, anything from an average of 9% up to 18% might be retired due to PC1 rules, the actual effect will be very much greater.

Because harvest and road planning are a complex process, it is not possible to establish the actual magnitude of estate write-off that will occur as a result of the proposed PC1 rules. A full planning exercise in advance of the whole forest areas would be required – a resource intensive exercise.

We note that recommendations from the whitua committees included general themes (not specific to forestry) that include developing site and property level plans with landowners and funding and support for sediment mitigation activities. We view these as positive steps that could equally be applied to the forestry sector not just other rural land uses. Working jointly with GWRC land managers on landscape scale plans for future replanting, considering riparian setbacks, wetland creation, small retirements etc. may be more productive, cheaper and effective than the application of blunt and ill-formed rules that in effect confiscate property rights to achieve objectives that are not even reliably justified by the current data.

In developing PC1 rules as they relate to forestry, GWRC:

- Modelling surficial erosion on a cutover site with the universal erosion formulae is likely to overestimate sedimentation contributions due to the conditions that exist within a cutover. It is relevant for the unmitigated earthworks component of a forestry operation.
- GWRC in creating its own erosion susceptibility layers from a very unimproved basis of information, that by its own admission excluded geological considerations and has not been peer reviewed, appears to have arisen simply to support a set of methods and rules that were never recommended by its own community whitua committees.
- The landsliding component of GWRC erosion modelling is likely inaccurate and a poor predictor of stability as it has not factored underlying geological influences. The relative geology of the area is robust and the influence of the interface between the bedrock and soil regolith is likely to positively influence slope stability.
- The application of the highest erosion risk mapping layers and associated rules in PC1 lead to a 'pixilated' estate. Such an estate will be near impossible to manage in any practical way other than to write-off much larger lower risk adjacent areas in order to rationalize the estate to boundaries that are workable. The PC1 rules thus amount to confiscation of property in order to achieve objectives, the benefit of which are not well justified by the existing data, by way of application of models that are unlikely to be capable of accurately or precisely predicting the need.
- GWRC should engage with the sector in a similar way as promoted by the whitua committees for other rural landusers and seek to have site specific engagement over good land use practice and future estate layout if they have concerns.

1.5 Consequences of prohibition on replant & cost to forest owners.

At a sector webinar hosted by GWRC it became quite apparent that GWRC staff had no comprehension of the operation of the Emissions Trading Scheme (ETS) and the potential liabilities and complications created by PC1.

Plantation forest areas that were planted in a plantation prior to Jan 1990 are automatically registered by the Government in the ETS. New forests planted on already clear land (pasture), after Dec 1989 can be and may be registered in the ETS.

Unless very recently planted, and older forest in the scheme will be registered under the “stock change” method and as such carries with it, significant financial liabilities if the forest is not replanted. Sums amount to the sum of accumulated carbon credits at time of harvest at the current unit price. The liability rests with the landowner. Contingent liability might be avoided if the harvest site is reafforested with a permanent forest, including native forest cover, that achieves a specified height (5m for natives) within 20yrs.

With between 4 % and 18% of productive area by forest to be removed from production, CFG have assessed the potential liability for the area to be retired to be in the order of 330ha, of pre 1990 forest. At the current ETS pricing of around \$70/tonne total liability could be in the order of \$18million before adding areas are written off after harvest as the pixilation of the estate leaves a greater area unviable as a future plantation. The added margin of write-off could potentially double the liability.

GWRC have assessed the total area of compulsory retirement to be in the order of 1000ha. The magnitude of liabilities from additional write-offs due to an unviable spatial land configuration and the unavailability of age class information across the two whitua preclude an estimate in this submission, but clearly could be substantially greater than the CFG component.

Such additional losses may also fall severely upon smaller landowner /forestry participants. In some cases, it could potentially lead to the total write-off of a plantation site, an issue that is discoverable through applying council property records to the high-risk erosion layer. This exercise should have been undertaken as an inherently necessary part of the impacts of the Secn 32 analysis.

There are various scenarios that could play out under the ETS as shown below in Table 3. Across the region and all forests affected by PC1, some or all of the scenarios may play out.

Table 4 Scenarios arising PC1 generated ETS liabilities.

Scenario	Leased Land / Cutting Right		Privately owned land & forest		comment
	Pre 1990	Post 1989	Pre 1990	Post 1989	
Forest not replanted	Liability rests with landowner unless covered in agreements.	Liability rests with landowner unless covered in agreements.	Liability rests with landowner.	Liability rests with landowner.	Requirement of PC 1. Compensation for private landowners?
Replant with long lived exotics	No liability.	No liability, credit revenue accrues to forest owner over term of lease	No liability.	No liability, credit revenue accrues to owner.	A potential option.
Replant with natives	No liability <u>IF forest of tree species meet 5m within 20yrs.</u>	No liability <u>IF forest of tree species meet 5m within 20yrs – minimal revenue to forest owner.</u>	No liability <u>IF forest of tree species meet 5m within 20yrs.</u>	No liability <u>IF forest of tree species meet 5m within 20yrs – minimal revenue to forest owner.</u>	Ensures liability annulled and native forest criteria met. But expensive land preparation and pest / weed control for extended period along with costs of planting and seedlings. Who pays? Longer period to achieve site erosion control objectives.
Retire to reversion	Liability if cover or height criteria not met at 20yrs.	Liability if cover or height criteria not met at 20yrs – <u>minimal revenue to forest owner.</u>	Liability if cover or height criteria not met at 20yrs.	Liability if cover or height criteria not met at 20yrs – <u>minimal revenue to forest owner.</u>	Cheap but liability risks if native forest criteria not met. Risk of reversion dominated by weeds (honeysuckle / gorse) leading to liability and large increase in N leach to water. Natural regen pine also. Extended period to achieve site erosion control objectives.
Don't harvest	No liability but no income from stranded asset.	No liability, convert to permanent regime – income to forest owner (if feasible under lease).	No liability but no income from stranded asset.	No liability, convert to permanent regime – income to forest owner.	Likely exercised by private owners. Over decadal time frames, pines may slowly collapse or stands may collapse synchronously as a result of storm events. Compensation for stranded assets.

During the GWRC hosted webinar, participants were referred to PC1 documents to see the support proposed for the changes envisaged under PC1. Under Method M44 pg 56 the method is:

“Method M44: Supporting the health of rural waterbodies Wellington Regional Council, working with primary sector organisations, will undertake a programme(s) to support the health of waterbodies, including rivers, streams, estuaries and harbours, impacted by rural activities, including to...” and goes on to list

“investigate financial support and rates relief options” and

“promote uptake of good management practice in rural land uses (as they might apply to forestry)”.

This method is presumably included to give effect to the themes coming from the whitua committee recommendations to provide assistance, free field advice etc. as well as investigating rates relief etc. However, sums involved in rates relief are likely miniscule to zero given the land will have no commercial value upon implementation of PC1. Advice in whatever form should be free given the public interest being served but none of this has any meaningful certainty. All such council undertakings are merely words subject to the vagaries of local body politics, 5yr and annual plan budgets and council priorities of the day – there is no long-term commitment of any tangible nature.

The clear lack of understanding of, or consideration given, to the obligations under the ETS by GWRC leaves unanswered a number of questions.

- Why should a forest owner or leaseholder be expected to foot the costs of restocking an area for the supposed benefit of the wider public, in order to avoid the liabilities generated by a rule created in the wider public interest?
- If Council seeks native forest reforestation, who is going to bear the high cost and take on the liability of ongoing management?
- If reversion is a chosen route, who bears the risk and cost of managing the areas through to an ETS compliant forest stage including removal of natural pine regeneration?
- Forest owners may simply walk away as the costs of PC1 and lack of future economic land use options makes non-harvest the best option. Who compensates for stranded assets or potential liabilities in the distant future if there are incidents arising from synchronous collapse?
- Compensation or assistance methods as expressed are in a form that is practically worthless and reflect a culture of avoidance of accountability and lack of recognition of the costs PC1 may impose upon forest owners.

1.6 Deficient execution of duties- NES-Regulation 6 Stringency.

GWRC have placed reliance on Regulation 6 of the NES-PF (now NES-CF) to enable the proposed introduction of a raft of new rules requiring consenting for forestry activities and for a portion of the productive estate, eventual abandonment.

Regulation 6 of the NES provides for a rule in a plan to be more stringent than the NES if the rule “gives effect to – (a) an objective developed to give effect to the National Policy Statement for Freshwater Management”. However, this regulation does not provide carte blanche, the justification for the introduction of rules that have not been adequately evaluated. In anticipation of this risk, the Ministry for the Environment published specific guidance in respect of this matter.¹⁹ Specifically the RMA Secn 32(4) in relation to a section 32 evaluation, requires that “If the proposal will impose a greater or lesser prohibition or restriction on an activity to which a national environmental standard applies than the existing prohibitions or restrictions in that standard, the evaluation report must examine whether the prohibition or restriction is justified in the circumstances of each region or district in which the prohibition or restriction would have effect”.

The guidance (Secn 4.1) further elaborates stating “When new rules are being introduced in a regional or district plan, the section 32 evaluation therefore needs to specifically consider whether a rule needs to be more stringent than the NESPF. If a council considers that a more stringent rule than the NES-PF is justified, this should be clearly documented in the section 32 evaluation report” AND (Secn 4.2) “It is important that users of the NES-PF can identify where a more stringent plan rule prevails over the NES-PF in accordance with Regulation 6. All councils are required to:

- Demonstrate why proposed rules more stringent than the NES-PF are justified in the circumstances of the region or district (section 32(4))”.

In reviewing the documentation associated with PC 1, CFG contend that GWRC have demonstrably failed to show the need for the stringency they have sought to apply. We note:

As detailed in section 1.3 of this document, GWRC’s water quality data is insufficient and does not support the stringency upon forestry it seeks to apply. We do not contest the ‘Objectives and Attribute limits’ being sought, but in respect of forestry activities GWRC does not have the evidence to support their rules. This is particularly the case given some monitoring sites are already meeting the attribute targets and where not, the relative role of forestry activity is (on a land area occupation basis), small while the drivers for poor quality, based on similar trends around the country, likely arise

¹⁹ <https://www.mpi.govt.nz/dmsdocument/27720-Resource-Management-Regulations-guidance-National-Environmental-Standards-for-Plantation-Forestry>

from the extended proximity of reaches of the particular streams to agricultural activity, major highways and urban and semi-rural development.

GWRC have sought (as described during the council hosted webinar) to imply an “equitable contribution” as the basis for more stringency including the retirement of productive land using the highest risk 10th percentile as the hurdle. As detailed in Section 1.4 of this document we noted the modelling to determine sediment yield for forestry is questionable, and its practical application at a field scale likely inaccurate and unmanageable.

While plantation retirement to a full unmanaged native woody vegetation cover would ultimately reduce sediment yields from such areas to natural baseline (which would naturally be higher than similarly vegetated land on low gradients of similar geology and soils), it remains unclear how an ‘equitable’ share based on area aligns with an effects-based response to partitioning a sediment budget against landuses.

Given the well-established knowledge that production forest are likely to produce more sediment during harvest than pastoral agriculture on the same landform but return to near natural baselines shortly thereafter, and given the nationwide consistency of trends across land use of an ordered progression of declining water quality across most attributes from native forest, exotic forest, pastoral agriculture, cropping/hort and urban, the proposed rule sets seem unjustified. For a given hectare of production forest at harvest, the increased sediment yield relative to pastoral land use is offset by decades of below average yield. Additionally, the effects, whether sediment or other attributes, are a permanent day-to-day feature on pastoral sites.

CFG believe that in seeking blanket rules to retire an allocated portion of private forestry land use, GWRC have failed to provide the justifiable and quantifiable link between the action and the water quality response. One might question if the equivalent 750 ha of land proposed for compulsory retirement was instead targeted at compulsory retirement to native or even production forest of 50m of each side of the lowland Mangaroa and Horokiri mainstems, 75km of riparian would likely rapidly achieve quantum improvement across all water attributes.

As discussed in section 1.2 of this document CFG have noted that in setting more stringent rules than those of the NES-PF (CF), council planners have ignored the recommendations arising from their own community processes. The whitua committees specifically noted that the NES-PF had been in place a very short time and should be left (at that stage) to do its job. While there was comment about some evidence that some in the industry were not yet (at that time) operating fully to the standards – that would not necessarily be surprising given the comprehensive nature of the regulations that had only been in place 1-2 years.

Equally, if there were substandard operations being found, that of itself is not a failure in the NES-PF. The fact that activities were identified as 'below standard' shows a standard was identifiable and the issue lies in the matters of either training and awareness (newness of regulations), monitoring, or enforcement. All these things were pointed out as necessary implementation roles that the council should be focused on in relation to forestry activities in the two whitua. Nowhere did the whitua committees recommend more stringency nor even retirement of plantation forests. They also more generally recommended council engagement with landowners over education, awareness and good management practice and options as well as encouragement and incentives.

GRWC has proposed new stringency requiring forestry activities to require a controlled consent for all activities in the whitua, ESC plans - a bit more than required under Schedule 4 of the NES-CF, prohibited replanting in certain areas and numeric discharge limits. The proposed rules are justified by GRWC as being required to give effect to the target attribute states (TAS) and objectives established by the whitua committees. At the time of the deliberations of the whitua committees, any effects upon water in the whitua such as they were, that could have been attributed to forestry activity, had it been identified and measured, were a cumulative summation of multiples of previous years of activity predating the NES-PC/CF. As already shown in photos 1 & 2 some of this was well below standard.

At the Webinar, GRWC staff also supported their stringency position arguing that the NES-PF/CF allowed activities as permitted and didn't enable control over operations. This is incorrect. The NES-PF provides for control through the mechanisms of:

- a) Enabling request for provision of Schedule 3-5 management plans to Council. While council cannot stop an operation if they believe a proposed activity will be unable to meet the permitted activity standards it can advise a party of its concerns – which following through the subsequent steps would be ignored at the forestry incumbent's own peril.
- b) All relevant activities must be notified to the council. This means councils are aware of when and where forestry activities will be being undertaken and can schedule monitoring as they see fit.
- c) Councils are enabled to undertake monitoring of permitted activities under the NES-PF/CF and Councils are enabled to charge monitoring cost recovery fees as for any other consented activity.
- d) Permitted activities under the NES-PF/CF come with performance standards. A breach of those standards or an unnotified material deviation from the plans supplied to council are open to enforcement action.

At the time of the formulation of the NES-PF, there was deliberative consideration of this structure. The core philosophy underpinning it is that through the notification and plan processes, council staff could prioritise their regulatory effort – focusing firstly on any players with whom they had concerns

regarding their performance history and secondly on those for whom they considered a submitted plan would not achieve required outcomes. Enacting such provisions gave an orderly control function without a burgeoning bureaucracy involving consenting, cost delay and uncertainty while also rewarding those who developed good performance records.

CFG believe GWRC need to operate in good faith – reflecting the recommendations of the whitua committees and devote its efforts toward understanding the industry practice guides, working with the sector and focusing on education, awareness, monitoring, compliance and engagement and assistance with the sector in matters of landscape scale land use planning where mutually agreed strategies for post-harvest stand boundary rationalization, riparian enlargement or minor retirements or alternative species might be discussed. The fact that similar methods seem to be a ‘normalised’ response (via farm plans) to many of the issues around pastoral agriculture but is barely on the agenda in respect of forestry is a glaring inconsistency.

CFG contend that GWRC have no basis on which to justify the PC1 changes.

- The long-term implied effects arising from forestry relate to management practices pre-dating the NES-PF/CF.
- They have negligible basis nor data to establish the current operations under the NES-PF/CF as unable to contribute to the meeting of the TAS and equally importantly,
- They have in no way established or been able to describe how their stringency proposals differentially add value over regulations of the NES-CF and the sectors associated good practice guides and earthworks manuals, nor by what margin.
- GWRC are either mis-informed or mis-guided as to the levels of control available to them under the NES-PF/CF.
- GWRC should reconsider their approach and follow the recommendations of their whitua committees who appear to have recognized appropriate pathways for achieving the objectives and TAS they set.

1.7 Improper and inadequate - Secn 32 analysis

GWRC in their Section 32 analysis have, in prt B secn 3.2 placed weight upon the requirements of the National Objective Framework (NoF) to 'make use of the best available information at the time' AND 'that Councils must not delay making decisions solely because of the quality or quantity of the information available. This is understandable, however not delaying and lack of information does not annul the requirements for establishing the need or otherwise for regulatory stringency as laid out in Secn 1.6 above of this submission document.

As laid out, the requirement for stringency must be justified, "*the evaluation report must examine whether the prohibition or restriction is justified in the circumstances*" and the council must demonstrate how the stringency is required. Justification is not simply an entitlement given because one has to give effect to the NPF-FW and NoF. Demonstration of the justification needs to be based on reasonable fact.

GWRC record in part D of the section 32 evaluation that the evaluation is based around a framework of matters being:

- Environmental – water quality.
- Cultural - mana whenua imperatives.
- Economic – general conclusions re financial impact. And
- Social – Community sentiment – positive and negative.

GWRC, para 36 state, and it is acknowledged by CFGC, that due to complexity, a data driven cost/benefit evaluation related to economic, social and environmental costs would be difficult to do and "of limited value due to the mandatory requirements of the NPS-FM". Instead GWRC chose to undertake the Secn 32 analysis as a "planning assessment of expected costs and benefits drawing on professional understanding of the outcomes that can be expected"- full text below²⁰.

In discussion related to the matter of sedimentation, and the objectives, with which CFGC do not disagree, GWRC record in the following paragraphs on policy that, (Para 115) "*the policies.....direct the actions needed to identify and better control or change the uses of land that generate sediment loads that are or could contribute to the resulting environmental issues*" and Para 116 "*The actions directed by the policies are necessary to give effect to the recommendations of the WIPs and mana whenua whaitua*"

²⁰ Para 37. Accordingly, the section 32 assessment has been completed as a planning assessment of expected costs and benefits. This draws on professional understanding of the outcomes that that can be expected to arise with the policy/rule options considered in the development of the plan change provisions (policies, rules, and other methods) to implement the objectives of PC1. The objectives arise from the NPS-FM national direction including the WIP (community planning) processes required by the NPS-FM. In this regard, the assessment set out below gives effect to section 32 of the RMA.

implementation plan” and “*the requirements of the NPS-FM to meet the TAS.....*”. As already noted in Prt 1 Secn 1.2, the proposed rules DO NOT give effect to the recommendations of the whitua committees.

In the introductory commentary of the Secn 32 analysis in section 5.1.5 outlining the intent of the package, it is stated that forestry is a major land use in the two whitua at 13.5% and 8% respectively, figures that of themselves are not particularly helpful in isolation from the other uses of land. More importantly that statement follows that the area has recently reached or is nearing commercial maturity so that harvesting is consistently occurring and expected in these FMU’.

In fact, over the past decade or more, much of the plantation area in the two whitua has already been harvested and is in its second rotation. As discussed in Prt 1 Secn 1.3 of this submission the bulk of the area of a plantation forest is producing near base-line natural sediment for most of a rotation and the actual aerial and temporal exposure to higher sediments yields is much smaller than the proportion of the gross area.

In the forests within the two whitua in which CFG hold cutting rights since 2018, (Table 2) much of the area of the larger forests, Hukinga, Puketiro and Valley view, was harvested from 2013 to 2018 with a bit more in Puketiro until 2021. There is little left to harvest, past areas are now greened up or well into the second rotation. Also as already discussed, most of that harvesting was pre-NES-PF regulation and some of it was of a very poor standard.

In parallel, anecdotally, it would appear that in those catchments that have had a sustained history of past harvest, water quality monitoring (Whakatikei and Akatarawa) is showing good results. Plantation forestry has been a moderate scale of commercial landuse in these otherwise largely (indigenous forested catchments). Conversely, in Mangaroa and Horokiri catchments, plantation forestry has been a small to modest component of catchments where aside from the indigenous protection land, use is dominated by pastoral agriculture, lifestyle and peri-urban development.

GWRC have undertaken their Secn 32 analysis on the basis of a value judgement comparison between their ‘preferred’ option being PC1, the ‘status quo’ and an alternative with additional measures which involves option 1 plus a “exposed area” regulation.

In relation to the assessment, CFGC submits as follows having ignored the ‘additional measures’ option:

	Option 1 Preferred	Option 2 Status Quo	CFG submission
Costs			
Environmental	<p>Very High but reducing to Medium: This approach will commence to reduce loads of sediment generated from plantation forestry and vegetation clearance on high erosion risk land, as the provisions take effect.</p> <p>However, the contribution of sediment reduction from these activities in these FMUs may be relatively slow, so the overall environmental costs of sediment to water quality, ecosystem health and people will endure, while these and mitigations to reduce sediment.</p>	<p>Very High: The existing environmental costs of sediment, including from plantation forestry and vegetation clearance on high erosion risk land entering water bodies in these FMUs is very high. The existing policy framework has not adequately addressed the issue, so little or no reduction in environmental costs can be expected.</p>	<p>The stated very high environmental cost is not supported by GWRC data nor is the relativity between the options given:</p> <p>High risk erosion zones are relative erosion evaluations not actual risk and heavily dependent of surficial flow which in forestry sense is less significant relative to pasture.</p> <p>No account taken of temporal or spatial differences unique to forestry.</p> <p>No recognition of activity requirements under NES-PF including riparian setbacks, let alone NES-CF which was discounted. No recognition of influence of past activity being pre-NES-PF.</p>
Social	<p>Low: The social cost of this policy option will largely sit with plantation forest owners and industries that support the forestry sector. The cessation of future plantation forestry on highest risk erosion land, setting of sediment discharge limits and implementation and monitoring of industry best practice operating methods in the forest operations will have a low social cost.</p>	<p>Very High: The existing social costs resulting from sediment, including from plantation forestry and vegetation clearance on high erosion risk land entering water bodies in these FMUs is very high. The loss of values for the waterbodies for recreation and amenity is very high for all people.</p>	<p>Preferred option fails to recognise that much larger areas of forest may become unusable due to the 'pixilation' of the estate. There is potential that some small landowners (who may have planted forest to retire farmland) may find their whole landholding unusable and unavailable for reasonable use in the future.</p> <p>Conflation of forestry effects to social costs of poor water quality in the whole lower catchment compared with "low" social costs to forestry in the preferred option. There is and has been no attribution of the relative impacts of forestry upon whole catchments relative to the totality of effects, thus the conclusion is invalid and unsubstantiated.</p>
Economic	<p>Medium: The requirement for a resource consent and to prepare sediment and erosion management plans for plantation forestry, including to achieve and demonstrate compliance with sediment discharge limits will incur additional costs to forest/landowners but much of this information is already required under the NES-PF regulations and industry best practice guidelines.</p>	<p>Low: The economic costs of the existing policy framework are low, with only very limited resources being applied to implementing or monitoring sediment reduction measures in plantation forestry or vegetation clearance on erosion prone land.</p>	<p>There are many areas of alignment between the requirements of the NES-CF forest practice guides and requirements for earthworks plans. The sector accepts those costs.</p> <p>GWRC have failed to objectively evaluate the marginal benefit of option 1 over and above good execution of the mechanisms available to them under the NES-CF.</p> <p>Consenting is a slow, expensive and uncertain process – Forestry harvest involves a protracted process of</p>

	<p>The cessation of future plantation forestry on highest risk erosion land may incur future economic costs for forest/landowners and related industries. The future revenue from this land may be reduced as it is no longer used for plantation forestry. The highest risk erosion land is also generally the least favourable land for plantation forestry due to accessibility issues and lower productivity, creating higher operating costs and lower margins. Therefore, the economic cost of ceasing future plantation forestry on this land may be low.</p>		<p>scheduling wood products to processors and markets in a continuous fashion. Harvesting is a factory floor that shifts location regularly. The Government's purpose in establishing the NES-PF/CF was to reduce uncertainty and proliferation or rule variants throughout the country.</p> <p>PC1 rules pose some potential for ETS liabilities for private landowners.</p> <p>Rules requiring retirement of private land to permanent native rather than other species (possible under the NES-CF) also potentially significantly increases the adverse economic impact. In larger estates, pixelation may also render much larger areas unworkable, requiring a write-off of significant estate value.</p> <p>Costs to convert retired land to native permanent cover may be high to individuals. GWRC are vague as to what levels of assistance (incentives) will be provided.</p>
Cultural	<p>Very High but reducing: The costs to mana whenua from the sedimentation of rivers, estuaries and harbours, and consequential loss of mahinga kai and taonga is very high. Reduction in sedimentation and improvement in these values will take some years, so the current cost will continue for the medium term.</p>	<p>Very High: The costs to mana whenua from the sedimentation of rivers, estuaries and harbours, and consequential loss of mauri, mahinga kai and taonga is very high. The existing policy framework is inadequate to bring about the improvements needed to reduce the cultural cost.</p>	<p>As discussed under social costs – comparison with status quo are conflating forestry related impacts to being the totality of impacts upon whole catchments and is misleading.</p> <p>Concerns of tangata whenua are acknowledged and their involvement in the whitua process was significant – they, through the final reports of the whitua process did not recommend the requirements now proposed in PC 1.</p>
Benefits			
	Option 1 Preferred	Option 2 Status Quo	CFG submission
Environmental	<p>Increasing to High: The progressive cessation of plantation forestry and revegetation and stabilisation of highest risk erosion land will, eventually, deliver high environmental benefits as the loss of sediment from land to water bodies reduces, water quality improves and ecosystem health recovers. The revegetation of land in permanent forest may also provide opportunities for carbon sequestration and enhancing indigenous</p>	<p>Very Low: The environmental benefits from the existing policy framework are very low to none, as the current degraded environmental state has largely developed under this framework.</p>	<p>The supposed differential environmental benefits between options is an emotionally loaded statement without reliable substance.</p> <p>The current 'status quo' involves a step up in practices and standards that didn't exist when most past harvesting was undertaken. Just as the preferred option will deliver improved environmental options over time so too will the status quo via better construction and sediment control techniques, improved harvesting techniques, riparian</p>

	biodiversity, which may also produce additional significant environmental benefits.		<p>creation and stream protection. GWRC have not established the marginal differential benefit.</p> <p>The reference to the “current degraded state” referred to under status quo is thus wrong in fact and continues the conflation of forestry effects to the whole catchment. It also ignores trends implied in current GWRC data and the results of survey work in forest streams.</p>
Social	<p>Increasing to High: The social benefit from lowered sedimentation loads in rivers, estuaries and the harbour will be high as the values of these water bodies for cultural use, amenity and recreation are restored.</p> <p>Retaining vegetation on high erosion risk land and revegetating land as permanent forest will also bring social benefits derived from increased carbon sequestration and enhanced biodiversity.</p>	<p>Very Low: The social benefits from the existing policy framework are very low to none, as the current degraded environmental state has largely developed under this framework.</p>	<p>Again, a subjective and loaded comparison conflating forestry effects in the status quo to the whole catchment and estuaries while attributing major benefits to the whole catchment from relatively small proportions of total catchments subject to the preferred option. The preferred option if applied, is not capable of materially remediating most of the catchment and the level of attribution is not quantified and probably not quantifiable.</p> <p>It also ignores trends implied in current GWRC data and the results of survey work in forest streams. It is clear that in some streams with links to plantation forests “social benefits” are already very high inclusive of wider biodiversity ecosystem services provided by plantations, notwithstanding they will not be to the same degree as a mature native forest ecosystem.</p> <p>Added carbon sequestration hypothesized from the implementation of retirement is likely to be modest to low given the likely native forest sequences that will naturally prevail in the upper slopes.</p>
Economic	<p>Low: The economic benefits of plantation forestry land being revegetated to permanent vegetation is expected to be low. Opportunities for earning carbon or biodiversity credits may provide for some revenue from the land that is no longer used for plantation forestry or land upon which vegetation is retained as permanent forest.</p>	<p>Low: The economic benefits from the existing policy framework are largely derived from not using financial and physical resources to address the environmental degradation, allowing this to persist.</p>	<p>Considerable financial resources are already expended since the introduction of the NES-PF/CF where good execution of the forestry practice guidelines is undertaken.</p> <p>The overall assessment for both options is correct – the direct economic benefits to the forest owners are low to nil. The wider benefits accrue to the community at large in both cases.</p>

			Benefits proposed via opportunities for carbon sequestration in native forest are, under current settings, low unless GWRC are going to subsidise the cost of establishment which may be high on some sites as may be the costs of managing reversion to a ETS compliant state.
Cultural	Increasing to Very High: There will be high to very high cultural benefits eventually derived from the reduction in sediment entering water bodies. The restoration of mana whenua values of rivers, estuaries and Porirua Harbour will bring significant benefits for the health and well-being of Ngāti Toa tangata, Māori and the people of Wellington Region. The contribution to the cultural benefits will be from progressive cessation of plantation forestry and restoration of permanent forest on high erosion risk land and avoiding vegetation removal unless necessary to achieve broader goals.	Very Low: The cultural benefits from the existing policy framework are very low to negative, as the current degraded environmental state has largely developed under this framework.	<p>The supposed differential cultural benefits between options is an emotionally loaded statement without reliable substance.</p> <p>The comparison conflates forestry effects in the status quo to the whole catchment and estuaries while attributing major benefits to the whole catchment from relatively small proportions of total catchments subject to the preferred option. Suggesting a 'very low' outcome will apply under the status quo, but increasing to very high applies to the preferred option is wishful thinking. The reality is that in both cases benefits will be slow to accrue, the marginal benefit of both options being applied as not being applied at all will, in the context of the totality of land use in the catchments, be low, and the marginal added benefit between the options low and difficult to determine.</p> <p>In relation to the preferred option narrative concerning vegetation clearance – in the forestry context, clearance of non-plantation forest vegetation is minimal and also controlled by the NES-PF/CF. Any major clearance of other vegetation, (including gorse) unless for permanent carbon forestry, is very unlikely, is outside the scope of the NES-CF and as such remains within scope of council regulation.</p>
Effectiveness How successful will you be in providing the outcome set by the objective?	The reduction of sediment from plantation forestry and vegetation clearance on high erosion risk land is one of a suite of actions necessary to contribute towards meeting the targets for sedimentation, and the objectives for water	The existing policy framework is unsuccessful at achieving outcomes set by objectives in NRP, WIPs or national instruments.	<p>It is correct that the proposed PC1 rules are part of a suite of actions and that on their own, the policy package will not achieve the objectives.</p> <p>The policy objective are at catchment levels – the effectiveness of the targeted rules as they apply to</p>

	quality, ecosystem health, cultural well-being in the water bodies. This policy package will not, on its own achieve the outcome set by the objectives.		forestry cannot be ascertained because there has been little attribution to land use based data, consideration of relative site occupancy, consideration of spatial and temporal distributions nor consideration of marginal benefits between regulatory regimes in applying stringency to the NES-CF. The effectiveness is thus highly questionable.
Efficiency Do the benefits of the option outweigh the costs?	The net benefits to society will be high and the monetary costs to achieve this will be medium, so the benefits outweigh the costs.	This existing policy framework is not successful. While costs may be low the benefits are lower still.	<p>The statements have no basis. Given the modest to low proportion of land in forestry, the at best contradictory insights coming from GWRC's own data, and the failure to address the marginal added benefit between regulatory regimes despite the obligation to do so when applying stringency, there is no basis to say the current regulatory regime is not successful. Only at the global catchment/landuse scale can one conclude that the current or past regimes in their totality, as they apply to all landuses, have most definitely not been successful.</p> <p>The specific marginal added benefits arising from the proposed controls as they relate to forestry, vegetation clearance on high-risk land and farming >20ha were described by Greer²¹ "The impact this will have on contaminant losses cannot be quantified, but it is likely negligible compared to the required retirement, livestock exclusion and space planting".</p> <p>CFG Contend that the preferred option is in fact highly inefficient, being high cost, bureaucratic and uncertain.</p>

²¹ Torlesse Environmental – Greer 2023a Assessment of alignment between the regulatory provisions and targets. Pg34

Part 2

Submission points

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
		<i>Amended New Not applicable to Whaitua Not applicable to Te-Awarua-o-Porirua N/A</i>	<i>Support Oppose Neutral Amend Not stated</i>	<i>Part 1 Schedule 1 Both</i>	Please provide a summary of the reasons for your feedback on each provision to help us understand your position	<i>Please describe the actual changes to the provision that you would like to see and, where possible, include your suggested alternative wording. NOTE: Any deletions should be identified using strikethrough, and insertions should be identified using bold.</i>
2.2 Definitions	Afforestation	<i>Amended</i>	<i>Amend</i>	<i>Prt 1</i>	<i>Mis alignment</i>	<i><u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u></i>
	Earthworks	<i>Amended</i>	<i>Support</i>	<i>Sched 1</i>	<i>Avoids unintended capture in general earthworks rules- Retain.</i>	<i><u>Retain deferral of definition to the NES-PF/CF earthworks definition in forestry</u> otherwise other forestry activities (e.g harvesting) would be included in the general earthworks definition. <u>Align with NES-CF as above.</u></i>
	Erosion and Sediment management plan	<i>Amended</i>	<i>Amend</i>	<i>Prt 1</i>	<i>Separate schedules creates confusion- need unjustified</i>	<i><u>Work to NES-CF schedule 4 & 5.</u> There is a great deal of overlap in key elements between existing NES-CF requirements and PC1. Avoid cross-over and overlap with existing processes developed under the NES-CF</i>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
2.2 Definitions	Harvesting	Amended	Amend	Prt 1	Mis alignment	<u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u>
	Highest Erosion risk – Plantation forestry	New	Oppose	Prt 1	Map process faulty – inappropriate for purpose, unjustified	<u>Abandon as process flawed – see Parts 1 - 1.3,1.4 & 1.5 of this document.</u> Consult properly and work with industry.
	Highest erosion risk land (woody vegetation)	New	Oppose	Prt 1	Not a big issue for forestry but likely same problem as above	<u>Abandon as process flawed – see Parts 1 - 1.3,1.4 of this document.</u>
	Mechanical Land Preparation	Amended	Amend	Prt 1	Mis-alignment	<u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u>
	Registered forestry adviser	New	Support/Amend	Prt 1	Registered members of the NZ Institute of Forestry are automatically also Registered Forestry Advisors	<u>Add sub-clause (d) “and includes a Registered Member of the New Zealand Institute of Forestry”</u>
	Replanting	Amended	Amend	Prt 1	Mis alignment	<u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u>
	Stabilisation	Amended	Amend	Sched 1	Does not include other methods	<u>Clarify relationship between earthworks and forestry earthworks.</u> PC1 proposes Schedule 34 ESC that references methods from forest practices guides but these are missed from definition that only includes GWRC ESC guideline 2021.
	Vegetation clearance -rules WH.R20,21,P.R 19,20	Amended	Amend	Prt 1	Mis alignment	<u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
5.4.5	Rule 128,132 – Use of beds – new structures	Amended	Amend	Sched 1	Mis alignment	<u>Align as “has the same meaning as given in section 3 of the Resource Management (National Environmental Standards for Commercial Forestry) Regulations 2023”.</u>
6.16 FW action plan programme. Pg52	Method M39 Freshwater Action plan for threatened FW species	New	Support/amend	Prt 1	Threatened freshwater species exist within and utilize habitat provided by Plantations	<u>Action plans for species must also include partnership with landowners/forest owners</u> within whose areas such species occupy habitat or are dependent upon the ecosystem services supporting the habitat.
	Method M40 Fish passage action plan	New	Support/amend	Prt 1	Objective supported but needs to include working with landowners.	<u>Prioritisation must include consultation with landowners</u> where action identified as required.
	Method M41 Identifying degradation of freshwater bodies	New	Amend	Prt 1	Text/purpose/execution unclear. Support publishing of trends (provided monitoring intensity sufficient). Amend text re identification and action	<u>Review and rewrite.</u> Identification of trend of degradation as “not being natural” is mis scoped. The purpose should be identification of trend(s) related to TAS that are negatively divergent in terms of nature and rate, from those set in the Waitua action plans. Any response should involve reviewing the plan TAS for applicability, the data reliability indicating the adverse trend, and the degree to which changes in practices spurred by current regulation have occurred (or not) and any other influences as to why efficacy may not have been as expected, <u>before introducing a plan change.</u>
	Method M43 Supporting improved urban water quality outcomes	New	Support	Sched 1	An essential component	Given nationally established trends that natural water in urban environments is consistently poorest – It is essential that this is addressed.
	Method M44 Supporting the health of rural waterbodies	Amended	Support/amend	Sched 1	This reflects recommendations of waitua committees	<u>Amendment needs to include ‘deliver a specific programme of enqaagement with forestry practitioners’.</u>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
Objectives						
8.1 FW Objectives TAT – Whanganui -a- Tara Pg 57	Wh.O1	New	Amend	Sched 1	Clarify the 'Waiora state'. Ahua (natural character). Natural character is not a condition fixed in time.	Amend: The description needs to include the caveat that natural character refers to a waterbodies state in response to a variety of input conditions that are managed to achieve a level of naturalness. However, issues such as climate change and in particular storm frequency and intensity may, in the future, mean 'natural character' is not the same as the targets being strived for now. The risk is a mismatch between what is attempting to be legally enforced and what is achievable!
	Wh.O2	New	Support	Prt 1	NA	NA
	Wh.O3	New	Support	Prt 1	NA	NA
	Wh.O4	New	Support	Sched 1	NA	NA
	Wh.O6	New	Support	Sched 1	NA	NA
	Wh.O8	New	Support	Sched 1	NA	NA
	Wh.O9	New	Oppose/Amend	Sched 1	Requirement for attribute improvement in all river reaches if TAS not meet in Prt FW management unit monitoring sites.	This does not reflect good management. Adjust to reflect A failure to meet TAS at a part FMU monitoring site should require identification of the problem source and a focus on raising the TAS performance in that area. TAS in some sub catchments may be met already and not practicably able to be improved.
Policies						
8.2 Ecological Health Policies	WH.P1 Improvement of Aquatic ecosystem health.	New	Support /Amend	Sched 1	Sub-clause (d) refers to requirements to achieve changes to land use activities.	The common usage of the term 'land use' is often more associated with rural or primary production land uses. In the context of this plan it needs clarification to include urban land use since this is a major source of contaminants.
	WH.P2 Management of activities to achieve TAS and coastal water objectives.	New	Amend	Sched 1	Sub-clause(f) refers to 'requiring active management.... earthworks, forestry etc...	As stated this is a meaningless term – such activities are already actively managed!. Amend to reflect management of these activities in accordance with established regulatory frameworks and good practice codes. Similar modifications could be applied to sub-clause (h) since of themselves, farm plans are not actions that improve water quality, they are a means to describe the good practice codes, regulations and actions that will be applied to a site.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.2 Ecological Health Policies	WH.P3 Freshwater action plans role....	New	Oppose / Amend	Sched 1	Freshwater action plans are prepared in partnership it Mana Whenua but also the community	The Policy needs to include the requirement <u>that Action Plans prepared in partnership with Mana Whenua and the community consultative groups “shall implement the recommendations of the relevant whaitua committees, identifying, in detail, the actions, including where relevant, justifiable and effective, additional regulation to achieve the target attribute states as well as other non-regulatory means to support relevant environmental outcomes”.</u>
	WH.P4 Achievement of visual clarity attribute states.	New	Support /neutral	Sched 1	Insufficiency in data	<u>More work is required.</u> While not disagreeing with the aggregated outcome reflected at the WQ monitoring site, there has been insufficient WQ monitoring in the wider sub-catchment to partition out the primary constituent cause of the poor clarity therefore action to achieve the outcome may be mis targeted.
	WH.P6 Cumulative adverse effects.	New	Neutral	Sched 1	Typo sub clause c(ii)	“in determining the improvement to water quality required in (ii), and.....” <u>(ii) should be (i)</u>
	WH.P8 Avoiding discharges of specific products and waste.	New	Support	Sched 1	NA	NA
	WH.P10 Managing the effects of stormwater discharges.	New	Support /amend	Sched 1	Sub clause c doesn't include temporal matters to be taken into account.	<u>Include further subclause (vi) to account for temporal nature of any discharge.</u>
8.2.4 Rural Land Use/Forestry						
	WH.P23	New	Amend	Prt 1	Clarify what woody vegetation can be and provide options	<u>Make provision for indigenous and exotic permanent forest</u> subject to controls to provide for better alternative income opportunities for farmers
	WH.P25 Managing rural land use change.	New	Support	Sched 1	NA	NA
	WH.P26 Managing livestock access to small rivers.	New	Support	Sched 1	NA	NA
	WH.P27 Promoting stream shading.	New	Support	Sched 1	NA	NA

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.2.4 Rural Land Use/Forestry	WH.P28 Achieving reductions in sediment – plantations.	New	Oppose/ Amend	Sched 1	Policy enables rules that do not have sufficient data to support the nature of the rules.	<u>Remove policy and reset to recognize substantive deficiencies covered in part 1 of this submission document.</u> Policy not well aligned with waitua committee recommendations – See Prt 1 Sectn 1.2. Council’s own data does not support nature of policy – see Prt 1 Sectn 1.3. Enabled rules are not practicable and imply write-off of much larger areas – see Prt 1 Sectn 1.4 and potentially high financial penalties – see Prt 1 Sectn 1.5 Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Sectn 1.6 GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1
8.2 Earthworks Policies	WH.P29 Management of earthworks.	New	oppose	Prt 1	Policy sets up a confused pathway between definitions, policy and general earthworks rules and forestry earthworks under forestry rules.	<u>Make clear this policy refers to general earthworks and is does not apply to earthworks in forestry – Include new policy covering forestry earthworks and relate to the regulations of the NES-CF separation of earthworks.</u> PC1 in its forestry rules proposes Schedule 34 ESC for forestry. This references methods from forest practices guides, as it should. General earthworks rule requires ESC only referencing GWRC ESC guidelines 2021 that does not include forest adapted techniques. Objectively assess need for stringency see Prt 1 Sectn 1.3 & 1.6 and utilize NES-CF as the Government intended.
	WH.P30 Discharge standard for Earthworks.	New	Oppose	Prt 1	Proposed 100g/m ³ has not been related to actual river /estuary sedimentation levels. Measurement ill-suited to diffuse discharge from land. Measurement method is retrospective rather than real time.	<u>Clarify application to general earthworks not forestry earthworks.</u> Impractical measure for realtime feedback in dynamic operations where diffuse discharges predominate. See Prt 1 secn 1.3 forestry practice. Clarity rule has perverse outcome in that plantation forests often have high macroinvertebrate indices

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	WH.P31 Winter shutdown.	New	Oppose	Prt 1	Forestry is a factory providing continuous supply of feedstock for industry and markets – they cannot stop	<u>Clarify application to general earthworks not forestry EW to be undertaken under NES-CF.</u> Earthworks are programmed to be done mainly over summer and drier periods. Policy makes no provision nor continuity nor emergency and maintenance.
8.3 Rules						
	Wh.R1 Point source discharge of specific contaminants.	New	Support	Prt 1	NA	NA
8.3.2 Stormwater	WH.R2 Storm water to land	New	Support/amend	Sched 1	Lack of clarity under subclause (d)	<u>Amend to include threshold or other text to recognize high intensity rainfall events.</u> Sub-clause (d) provided no threshold and is therefore unrealistic. Any property down slope of another MAY potentially suffer 'exacerbation' of flooding if a rainfall intensity is severe enough. High intensities (e.g Wellington near railway station- suffered surface flooding after approx. 12mm/hr).
	WH.R3 Storm water from existing individual property to surface water	New	Oppose/amend	Prt 1	Confused links between definitions and application. Assume intended to apply to urban situations. Does this / does this not apply to forestry land use? The 50gm/m3 in Schedule F1 streams or those with high MCI establishes a perverse outcome relative to those not on schedule 1 and low MCI.	<u>Clarify rule to apply to urban and industrial or similar circumstances - detach from rural land use and remove potential overlap with forestry regulations.</u> <u>Amend to remove perverse outcomes created by rule – remove grams/m³ discharge requirements and utilise mixing protocols only in rural diffuse discharge situations.</u> Map 77 pg 293 and schedule 1 shows many of these streams or their tributaries include plantations within their catchments that have been harvested in the past. High MCI recordings are a regular feature of plantation forest streams. Rule as is, potentially penalizes productive forestry in these catchments when history indicates it has been compatible with NoF /TAS objectives. Conversely, rule is permissive to landuse in those catchments already below standard and is contrary to policy objectives.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.3.2 Stormwater	WH.R5 Stormwater from new and redeveloped impervious surfaces.	New	Oppose /Amend	Prt 1	As for WH.R3	As for WH.R3
	WH.R11 WH.R12 pg 93	As above	As above	As above	As above	As above
8.3.4 Landuses	WH.R17 pg97 Permitted activity. Vegetation clearance highest erosion risk land	New	Oppose	Prt 1	<p>Clearance of non-plantation forest vegetation in a plantation setting often involves minor damage, the sedimentation consequences of which are minimal to nil. Larger clearance e.g. road alignments, are minimized due to cost. All other non-plantation forest clearance has been avoided or minimized for years as a consequence of NZ forest Accord.</p> <p>Rule creates unnecessary bureaucratic overlap, cost and confusion.</p>	<p><u>Separate vegetation clearance associated with plantation forest activities from general vegetation clearance and incorporate as already regulated in existing plantations under the NES-CF. Remove rule and align requirement with NES-CF 2023.</u></p> <p>Vegetation clearance <u>for afforestation</u> remains controlled by Council.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.3.4 Landuses	WH.R18 Controlled – Vegetation clearance highest erosion risk land	New	Oppose	Prt 1	<p>Clearance of non-plantation forest vegetation in a plantation setting often involves minor damage, the sedimentation consequences of which are minimal to nil. Larger clearance e.g. road alignments, are minimized due to cost. All other non-plantation forest clearance has been avoided or minimized for years as a consequence of NZ forest Accord.</p> <p>Rule creates unnecessary bureaucratic overlap, cost and confusion.</p>	<p>Separate vegetation clearance associated with plantation forest activities from general vegetation clearance and incorporate as already regulated in existing plantations under the NES-CF. <u>Remove rule and align requirement with NES-CF 2023.</u></p> <p>Vegetation clearance <u>for afforestation</u> remains controlled by Council.</p>
	WH.R19 Vege clearance Discretionary-	New	Oppose	Prt 1	As above	<p><u>Remove rule and align requirement with NES-CF 2023.</u></p> <p>As above.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.3.4 Landuses	WH.R20 Controlled Activity Plantation Forestry	New	Oppose	Prt 1	<p>Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data.</p> <p>Proposed rules promulgate substantive uncertainty, delay and cost unquantified benefit.</p>	<p><u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6 Council has significantly under-estimated the costs, arising to forest owners. See- Prt 1 Secn 1.4.</p> <p>GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua Committees – See- Prt 1 Secn 1.2. Councils Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7. Perverse outcomes arise from differential clarity rules.</p>
	WH.R21 Discretionary use Plantation Forestry	New	Oppose	Prt 1	<p>Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data, nor by recommendations of their whitua committees.</p> <p>Proposed rules promulgate substantive uncertainty, delay and cost unquantified benefit.</p> <p>May remove alternate farm landuse income opportunities for afforesting land to be taken out of farming.</p>	<p><u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6. Council has significantly under-estimated the costs, arising to forest owners. See- Prt 1 Secn 1.4.</p> <p>GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua committees – See- Prt 1 Secn 1.2. Council's Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7. Perverse outcomes arise from differential clarity rules.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
8.3.4 Landuses	WH.R22 Plantation Forestry on highest erosion risk land - Prohibited	New	Oppose	Prt 1	Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data.	<u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6. Council has significantly under-estimated the costs, operational impacts and potential liabilities arising to some forest owners. See- Prt 1 Secn 1.4 and 1.5. GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua committees – See- Prt 1 Secn 1.2. Council's Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7
8.3.5 Earthworks						
	WH.R23 Earthworks – permitted	New	Amend	Prt 1	5m minimum setback from surface water body for earthworks is contrary to the objectives of whole plan. Permissive regime applies to areas under farm plan – a corollary to the NES-PF/CF Subclause (g) “...no discharge....” And (h) “.... prevent a discharge...” Contradicts all other rules recognizing some discharge will happen	<u>Align with NES-PF /CF 10m setbacks for perennial streams, set visual discharge standard recognizing some discharge always likely to occur albeit minimal or not noticed. .</u> Apply NES-PF/CF inclusive of discharge requirements to forestry to avoid discriminatory differentiation between landuses.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	WH.R24 Earthworks – Restricted Discretionary	New	Oppose	Sched 1	<p>As discussed in WH.P29 there is a lack of clarity and potential crossover between policies and rules related to general earthworks and forestry earthworks.</p> <p>Earthworks season – no provision for emergency works</p>	<p><u>Clearly separate forestry earthworks and align with NES-PF CF 2023.</u></p> <p>Forestry earthworks and associated discharges and methods to manage are catered for in the NES-PF/CF. The erosion risk method proposed by GWRC is relative, and lacks meaningful accuracy and in-field applicability in the relatively robust geologies of the low and moderate ESC classes as used over the same areas in the NES-PF/CF. GWRC has made no reliable connection quantitative connection between forestry activity and actual levels of sedimentation. See – Prt1 Secn 1.3 GWRC for the same reasons as above have been unable to evaluate the need for and benefit from added stringency. See – Prt1 Secn 1.6</p> <p>The GWRC’s proposed rule set contravenes the recommendations of it’s own whitua Committees. See – Prt1 Secn 1.2</p>
	WH.R25 Earthworks -non-complying	New	Oppose	Sched 1	As above	<u>Realign full rule set to NES-PF/CF as described above.</u>
8.3.6 Nutrients and Sediment from pastoral farming.	WH.R26 Farming Activities <20ha	New	Amend/oppose	Prt 1	<p>Unlike for forestry there is no discharge limit. Methods focus on higher erosion land but ignore the reality of significant sediment generation arising simply from stock pugging on gentle soils.</p>	<p><u>Review data and rewrite with an objective for consistency in effects based rule response.</u> GWRC data, while sparse, gives insight to possible alignment of sedimentation with national trends in that the streams with poor TAS were those that included reaches with long exposure to adjacent pastoral and lifestyle farming on relatively gentle terrain. The inconsistency between land uses and lack of data informed attribution is graphic! Neither is account taken of temporal matters – notwithstanding whatever sediment and other contaminant generation arises from a farm, it is permanent and relative to natural levels elevated. Forest land use is elevated during harvesting and roading but rapidly returns to near baseline.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	See WH.R27 Farming activities >20ha	New	Amend/oppose	Prt 1	As above	As above
	WH.R28 & WH.R29 Livestock access to small rivers	New	Amend/oppose	Prt 1	Inadequate protection Farm plans provide for management options but may not necessarily achieve objectives.	<u>Revisit and align to effects driven approach.</u> Disparity of regulatory approach – stock access and adjacency effects to streams less than 1m wide cf earthworks (5m setback) and forestry (10m NES-PF/CF) on all perennial streams with discharge limits. Refer point noted above re source exposure to lowland pastoral agriculture which is potentially explanatory of and relevant to the poor TAS of the Mangaroo r.
	WH.R30 Use of land for farming - Discretionary	New	Support	Prt1	Effectively provides for continuation of current activities subject to efforts to meet good practice even if unable to meet the permitted activity standards so long as NoF TAS attributes already met in sub-catchment	<u>Change a align with objectives of PC1.</u> Either Council accepts there are times when even with application of good practice permitted standards cannot be met and allows continuation of activity provided river TAS already compliant – in which case it needs to consider other rule sets for activities in TAS compliant streams OR council doesn't accept the precedent in which case it should be effects driven and agnostic between land use. Highlights discrepancy in approach to different land use. GWRC data already indicating NoF/TAS being met in some catchments where forestry activity has been undertaken for years and under steadily improving good management practices and very limited likelihood of future increases in intensity or expansion of area given existing landuse matrix.
8.3.6 Nutrients and Sediment from pastoral farming.	WH.R31 Change of rural landuse - discretionary	New	Oppose/Amend	Prt 1	The proposed rule contradicts objectives not only to maintain but "improve" water quality	<u>Amend to ensure consistency and neutrality between landuse activities.</u> Proposed rule could see contaminants from land use approved upto or beyond the required TAS threshold and the Council has little in place to assess the margin or decline in freeboard for a TAS margin. Conflicts with intent to 'improve WQ' and is inconsistent with rules proposed that constrain existing activities when TAS targets already met.

9 Te Awarua-o-Porirua Whaitua

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
Objectives TAP Pg113	P.01	New	Amend	Sched 1	Clarify "Mauri is restored and <u>waters are in a natural state</u> ". Natural character is not a condition fixed in time.	Amend: The description needs to include the caveat that natural state refers to a waterbodies state in response to a variety of input conditions that are managed to achieve a level of naturalness. However, issues such as climate change and in particular storm frequency and intensity may in the future mean 'natural state is not the same as the targets being strived for now. The risk is legally enforceable unachievable goals!
	P.02	New	Support	Prt 1	NA	NA
	P.03	New	Support	Sched 1	NA	NA
	P.04	New	Support	Sched 1	NA	NA
	P.06	New	Oppose/Amend	Sched 1	Requirement for attribute improvement in all river reaches if TAS not meet in Prt FW management unit monitoring sites.	This does not reflect good management. Adjust to reflect a failure to meet TAS at a part FMU monitoring site should require identification of the problem source and a focus on raising the TAS performance in that area. TAS in some sub catchments may be met already and not practicably able to be improved.
Policies						
9.2 Ecosystem Health Policies	P.P1 Improvement in aquatic ecosystem health	New	Support /Amend	Sched 1	Sub-clause (d) refers to requirements to achieve changes to land use activities.	The common usage of the term 'land use' is often more associated with rural or primary production land uses. In the context of this plan it needs clarification to include urban land use since this is a major source of contaminants.
	P.P2 Management of activities to achieve TAS and coastal water objectives	New	Amend	Sched 1	Sub-clause(f) refers to 'requiring <u>active manaqement...</u> earthworks, forestry etc...	As stated this is a meaningless term – such activities are already actively managed!. Amend to reflect management of these activities in accordance with established regulatory frameworks and good practice codes. Similar modifications could be applied to sub-clause (h) since of themselves farm plans are not actions that improve water quality, they are a means to describe the good practice codes, regulations and actions that will be applied to a site.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.2 Ecosystem Health Policies	P.P3 Freshwater action plans	New	Oppose / Amend	Sched 1	Freshwater action plans are prepared in partnership it Mana Whenua but also the community	<u>The Policy needs to include the requirement that Action Plans prepared in partnership with Mana Whenua and the community consultative groups “shall implement the recommendations of the relevant whaitua committees, identifying, in detail, the actions, including where relevant, justifiable and effective, additional regulation to achieve the target attribute states as well as other non-regulatory means to support relevant environmental outcomes”.</u>
	P.P4 Contaminant load reductions	New	Amend	Sched 1	Clarify landuse includes urban landuse/	<u>Clarify landuse</u>
	P.P5 Localised adverse effects of point source discharges.	New	Support	Sched 1	NA	<u>NA</u>
	P.P6 Cumulative point source discharges	New	Amend	Sched 1	Clarify notion of point source relates to permanent or fixed sources NA	<u>Clarify intent</u> Include temporal component if point source is not permanent or fixed source
	P.P8 Avoiding discharges of specific products and waste	New	Support	Shed 1	NA	NA
	P.P9 Managing the effects of stormwater discharges.	New	Support /amend	Sched 1	Sub clause c doesn't include temporal matters to be taken into account.	Include further subclause (vi) to account for temporal nature of any discharge.
	P.P13 Pg 126 Stormwater discharges from new and redeveloped impervious surfaces	New	Oppose/amend	Sched 1	Confused links between definitions and application. Assume intended to apply to urban situations. Does this / does this not apply to forestry land use?	<u>Clarify rule to apply to urban and industrial or similar circumstances - detach from rural land use and remove potential overlap with forestry regulations.</u>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	P.P14 Stormwater contaminant offsetting?	New	Oppose/amend	Sched 1	Confused links between definitions and application. Assume intended to apply to urban situations. Does this / does this not apply to forestry land use?	<u>Clarify rule to apply to urban and industrial or similar circumstances - detach from rural land use and remove potential overlap with forestry regulations.</u>
9.2.4 Rural land uses & earthworks pg 129	P.P22 Achieving reductions in sediment from farming activities - High risk erosion	New	Amend	Prt 1	Clarify option for permanent woody vegetation to include exotic tree species with conditions to provide for alternate economic returns from permanent species	<u>Amend to provide alternatives.</u>
8.2.4 Rural Land Use/Forestry	PP.P24 Managing rural land use change.	New	Support	Sched 1	NA	NA
	P.P25 Promoting stream shading.	New	Support	Sched 1	NA	NA
WH.P28	P.P26 Achieving reductions in sediment – plantations.	New	Oppose	Sched 1	Policy enables rules that do not have sufficient data to support the nature of the rules.	<u>Remove policy and reset to recognize substantive deficiencies covered in part 1 of this submission document.</u> Policy not well aligned with whitua committee recommendations – See Prt 1 Sectn 1.2. Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Enabled rules are not practicable and imply write-off of much larger areas – see Prt 1 Secn 1.4 and potentially high financial penalties – see Prt 1 Secn 1.5 Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6 GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	P.P27 Management of earthworks sites	New	oppose	Prt 1	Policy sets up a confused pathway between definitions, policy and general earthworks rules and forestry earthworks under forestry rules.	<p><u>Make clear this policy refers to general earthworks and is does not apply to earthworks in forestry – Include new policy covering forestry earthworks and relate to the regulations of the NES-CF separation of earthworks.</u></p> <p>PC1 in its forestry rules proposes Schedule 34 ESC for forestry. This references methods from forest practices guides, as it should. General earthworks rule requires ESC only referencing GWRC ESC guidelines 2021 that does not include forest adapted techniques.</p> <p>Objectively assess need for stringency see Prt 1 Secn 1.3 & 1.6 and utilize NES-CF as the Government intended.</p>
8.2.4 Rural Land Use/Forestry	P.P28 Discharge standard for earthworks sites	New	oppose	Prt 1	Proposed 100g/m ³ has not been related to actual river /estuary sedimentation levels. Measurement ill-suited to diffuse discharge from land. Measurement method is retrospective rather than real time.	<p><u>Clarify application to general earthworks not forestry earthworks.</u></p> <p>Impractical measure for realtime feedback in dynamic operations where diffuse discharges predominate.</p> <p>See Prt 1 secn 1.3 forestry practice.</p> <p>Clarity rule has perverse outcome in that plantation forests often have high macroinvertebrate indices.</p>
	P.P29 Winter shutdown of earthworks	New	Oppose	Prt 1	Forestry is a factory providing continuous supply of feedstock for industry and markets – they cannot stop	<p><u>Clarify application to general earthworks not forestry EW to be undertaken under NES-CF.</u></p> <p>Earthworks are programmed to be done mainly over summer and drier periods. Policy makes no provision nor continuity nor emergency and maintenance.</p>
9.3 Rules						
	P.R1 Point source discharge of specific contaminants.	New	Support	Prt 1	NA	NA

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.3 Rules	P.R2 Stormwater to land	New	Support/amend	Sched 1	Lack of clarity under subclause (d)	<u>Amend to include threshold or other text to recognize high intensity rainfall events.</u> Sub-clause (d) provided no threshold and is therefore unrealistic. Any property down slope of another MAY potentially suffer 'exacerbation' of flooding if a rainfall intensity is severe enough. High intensities (e.g Wellington near railway station suffered surface flooding after approx. 12mm/hr).
	P.R3 Storm water from existing individual property to surface water	New	Oppose/amend	Prt 1	Confused links between definitions and application. Assume intended to apply to urban situations. Does this / does this not apply to forestry land use? The 50gm/m3 in Schedule F1 streams or those with high MCI establishes a perverse outcome relative to those not on schedule 1 and low MCI.	<u>Clarify rule to apply to urban and industrial or similar circumstances - detach from rural land use and remove potential overlap with forestry regulations.</u> <u>Amend to remove perverse outcomes created by rule – remove grams/m³ discharge requirements and utilise mixing protocols only in rural diffuse discharge situations.</u> Map 77 pg 293 and schedule 1 shows many of these streams or their tributaries include plantations within their catchments that have been harvested in the past. High MCI recordings are a regular feature of plantation forest streams. Rule as is, potentially penalizes productive forestry in these catchments when history indicates it has been compatible with NoF /TAS objectives. Conversely, rule is permissive to landuse in those catchments already below standard and is contrary to policy objectives.
	P.R5 Stormwater from new and redeveloped impervious surfaces.	New	Oppose /Amend	Prt 1	As for WH.R3	As for WH.R3
	P.R6 P.R10 P.R12	As above	As above	As above	As above	As above

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.3.4 Landuses	P.R16 Permitted activity. Vegetation clearance on highest risk land	New	Oppose	Prt 1	<p>Clearance of non-plantation forest vegetation in a plantation setting often involves minor damage, the sedimentation consequences of which are minimal to nil. Larger clearance e.g. road alignments, are minimized due to cost. All other non-plantation forest clearance has been avoided or minimized for years as a consequence of NZ forest Accord.</p> <p>Rule creates unnecessary bureaucratic overlap, cost and confusion.</p>	<p>Separate vegetation clearance associated with plantation forest activities from general vegetation clearance and incorporate as already regulated in existing plantations under the NES-CF. <u>Remove rule and align requirement with NES-CF 2023.</u></p> <p>Vegetation clearance <u>for afforestation</u> remains controlled by Council.</p>
	P.R17 Vegetation clearance on highest erosion risk land - controlled	New	Oppose	Prt 1	<p>Clearance of non-plantation forest vegetation in a plantation setting often involves minor damage, the sedimentation consequences of which are minimal to nil. Larger clearance e.g. road alignments, are minimized due to cost. All other non-plantation forest clearance has been avoided or minimized for years as a consequence of NZ forest Accord.</p> <p>Rule creates unnecessary bureaucratic overlap, cost and confusion.</p>	<p>Separate vegetation clearance associated with plantation forest activities from general vegetation clearance and incorporate as already regulated in existing plantations under the NES-CF. <u>Remove rule and align requirement with NES-CF 2023.</u></p> <p>Vegetation clearance <u>for afforestation</u> remains controlled by Council.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.3.4 Landuses	P.R18 Veg clearance - Discretionary	New	Oppose	Prt 1	As above	<u>Remove rule and align requirement with NES-CF 2023.</u> As above.
	P.R19 Plantation forestry – Controlled Activity	New	Oppose	Prt 1	Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data.	<u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES- PF/CF or the gains under the proposal – see Prt 1 Secn 1.6. Council has significantly under-estimated the costs, arising to forest owners. See- Prt 1 Secn 1.4. GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua committees – See- Prt 1 Secn 1.2. Councils Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7. Perverse outcomes arising from differential clarity rules.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.3.4 Landuses	P.R20 Plantation forestry Discretionary activity	New	Oppose	Prt 1	<p>Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data, nor by recommendations of their whitua committees.</p> <p>Proposed rules promulgate substantive uncertainty, delay and cost unquantified benefit.</p> <p>May remove alternate farm land use income opportunities for afforesting land to be taken out of farming.</p>	<p><u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6. Council has significantly under-estimated the costs, arising to forest owners. See- Prt 1 Secn 1.4. GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua committees – See- Prt 1 Secn 1.2. Council's Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7. Perverse outcomes arise from differential clarity rules.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	P.R21 Plantation Forestry – on highest risk land - prohibited	New	Oppose	Prt 1	Rules are a complete subversion of the of governments intent behind the development of the NES-PF/CF. Proposed rules are not supported by GWRC own data.	<u>Remove rule and align requirement with NES-CF 2023.</u> Council's own data does not support nature of policy – see Prt 1 Secn 1.3. Proposed rules are expensive, bureaucratic uncertain and efficacy not established based on Council's own data – see Prt 1 Secn 1.3. Council has failed in adequately identifying the efficacy of existing regulatory framework under NES-PF/CF or the gains under the proposal – see Prt 1 Secn 1.6. Council has significantly under-estimated the costs, operational impacts and potential liabilities arising to some forest owners. See- Prt 1 Secn 1.4 and 1.5. GWRC has acted in bad faith in relation to pre-consultation and engagement with the forestry sector- see Prt 1 Section 1.1 and ignored the recommendations of the whitua committees – See- Prt 1 Secn 1.2. Council's Secn 32 analysis has been deficient and breaches the responsibilities in law and the official MPI guidance in respect of adequately establishing the added efficacy and benefit expected to accrue from the proposed rules- see Prt 1 Secn 1.7
9.3.5 Earthworks						
	P.R22 Earthworks -Permitted Activity	New	Amend	Prt 1	5m minimum setback from surface water body for earthworks is contrary to the objectives of whole plan. Permissive regime applies to areas under farm plan – a corollary to the NES-PF/CF. Subclause (g) "...no discharge...." and (h) "...prevent a discharge..." Contradicts all other rules recognizing some discharge will happen.	<u>Align with NES-PF /CF 10m setbacks for perennial streams, set standard recognizing some discharge always likely to occur.</u> Apply NES-PF/CF inclusive of discharge requirements to forestry to avoid discriminatory differentiation between landuses.

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
9.3.5 Earthworks	WH.R24 Earthworks – Restricted Discretionary	New	Oppose	Sched 1	<p>As discussed in P.P27 there is a lack of clarity and potential crossover between policies and rules related to general earthworks and forestry earthworks.</p> <p>Earthworks season – no provision for emergency works</p>	<p><u>Clearly separate forestry earthworks and align with NES-PF CF 2023.</u></p> <p>Forestry earthworks and associated discharges and methods to manage are catered for in the NES-PF/CF. The erosion risk method proposed by GWRC is relative, and lacks meaningful accuracy and in-field applicability in the relatively robust geologies of the low and moderate ESC classes as used over the same areas in the NES-PF/CF. GWRC has made no reliable connection quantitative connection between forestry activity and actual levels of sedimentation. See – Prt1 Secn 1.3</p> <p>GWRC for the same reasons as above have been unable to evaluate the need for and benefit from added stringency. See – Prt1 Secn 1.6</p> <p>The GWRC’s proposed rule set contravenes the recommendations of it’s own whitua ommittees. See – Prt1 Secn 1.2</p>
	P.R24 Earthworks -non-complying	New	Oppose	Sched 1	As above	<u>Realign full rule set to NES-PF/CF as described above.</u>
9.3.6 Nutrients and sediment from pastoral farming	P.R25 Farming Activities <20ha	New	Amend/oppose	Prt 1	<p>Unlike for forestry there is no discharge limit. Methods focus on higher erosion land but ignore the reality of significant sediment generation arising simply from stock pugging on gentle soils.</p>	<p><u>Review data and rewrite with an objective for consistency in effects based rule response.</u> GWRC data, while sparse, gives insight to possible alignment of sedimentation with national trends in that the streams with poor TAS were those that included reaches with long exposure to adjacent pastoral and lifestyle farming on relatively gentle terrain. The inconsistency between land uses and lack of data informed attribution is graphic! Neither is account taken of temporal matters – notwithstanding whatever sediment and other contaminant generation arises from a farm, it is permanent and relative to natural levels elevated. Forest land use is elevated during harvesting and roading but rapidly returns to near baseline.</p>

Chapter # and Name	Provision # & Title	Type of Change	Stance	RMA Process	Reason for feedback	Decision Sought
	P.R26 Farming activities >20ha	New	Amend/oppose	Prt 1	As above	As above
	P.R27 Use of land for farming - Discretionary	New	Amend/Oppose	Prt1	Effectively provides for continuation of current activities subject to efforts to meet good practice even if unable to meet the permitted activity standards so long as NoF TAS attributes already met in sub-catchment	<u>Change a align with objectives of PC1.</u> Either Council accepts there are times when even with application of good practice permitted standards cannot be met and allows continuation of activity provided river TAS already compliant – in which case it needs to consider other rule sets for activities in TAS compliant streams OR council doesn't accept the precedent in which case it should be effects driven and agnostic between land use. Highlights discrepancy in approach to different land use. GWRC data already indicating NoF/TAS being met in some catchments where forestry activity has been undertaken for years and under steadily improving management practices and very limited likelihood of future increases in intensity or expansion of area given existing landuse matrix.
	PR.28 Change of Rural land use - Discretionary	New	Oppose/Amend	Prt 1	The proposed rule contradicts objectives not only to maintain but "improve" water quality	<u>Amend to ensure consistency and neutrality between landuse activities.</u> Proposed rule could see contaminants from land use approved up to or beyond the required TAS threshold and the Council has little in place to assess the margin or decline in freeboard for a TAS margin. Conflicts with intent to "improve WQ" and is inconsistent with rules proposed that constrain existing activities when TAS targets already met.
Schedules						
	Schedule 33 Veg clearance ESC plan	New	Oppose	Prt 1	Separate out non-plantation vegetation clearance associated with plantation forest activities. Defer that vegetation clearance to the NES-CF	<u>Remove requirement and align and incorporate to NES-CF for non-plantation vegetation clearance already regulated under that NES.</u>
	Schedule 34 Plantation ESC Plan	New	Oppose	Prt 1	Significant overlap with requirements of NES-CF plan – creates confusion adds little value	<u>Remove and align and incorporate to NES-CF</u>

Appendix 1(a)

Te Whaitua Te Awaroa-o-Porerua Recommendations

10.1 Earthworks

Recommendation 49 Greater Wellington amends the policy and rule framework in the PNRP to set discharge standards for earthwork activities that require consent in order to achieve the sediment targets and limits in the WIP.

Recommendation 50 WCC and PCC have consistent bylaws and guidance for silt and sediment control within the Whaitua. Consideration must be given to the effects of climate change to ensure control measures are designed to meet increasing intensity and duration of rainfall events.

Recommendation 51 Greater Wellington reviews and updates publications, including Small earthworks – Erosion and sediment control for small sites (2006), and Erosion and sediment control guidelines (2000), to ensure the methods and principles they set out reflect current good practice. Amendments may include increasing the design standards to deal with more significant but less frequent rainfall events.

Recommendation 52 Greater Wellington, WCC and PCC develop a compliance programme to ensure good practice in relation to silt and sediment control is followed for all earthworks, particularly in relation to permitted activities. This should also include a required frequency of cleanout and monitoring of retention basins to reduce the risks of retention basins being overwhelmed.

Recommendation 53 Greater Wellington, in conjunction with WCC and PCC, develops an education programme to ensure that good practice for silt and sediment control is understood by those carrying out earthworks.

10.2 Forestry

Recommendation 54 Greater Wellington works with the forestry sector to identify potential barriers and risks to good practice in reducing sediment from forestry operations and works with the industry to overcome the risks and barriers.

Recommendation 55 Upon receiving notice under the NESPF of earthworks, forestry quarrying or harvesting in the Te Awaruao-Porirua Whaitua, Greater Wellington requests a copy of the Forestry Earthworks Management Plan and Harvest Plan or Quarry Erosion and Sediment Management Plan and actively monitors compliance to ensure sediment discharges to waterbodies are minimised.

Recommendation 56 Greater Wellington provides sufficient resources to deliver consistent advice on forestry good practice and compliance, both within the Whaitua and across the region.

Recommendation 57 Greater Wellington develops a charging policy under the NESPF for the monitoring of permitted activities.

11 Rural Topics

Recommendation 58 Greater Wellington undertakes further work to determine priority areas for reducing sediment in the Whaitua's streams and harbour. Once priority areas have been identified, Greater Wellington should work with landowners to develop environment plans that set out how sediment losses will be reduced at a farm/property scale.

Recommendation 59 Greater Wellington develops a regulatory framework in the PNRP to:

- undertake farm/property-scale mapping to identify erosion-prone land in priority areas identified in Recommendation 58
- require land owners to develop an environment plan setting out how sediment losses will be reduced where erosion-prone land is identified above a certain threshold (e.g. more than specified number of hectares)
- require that, where identified erosion-prone land is vegetated in scrub, shrubs and/or non-plantation forestry, that vegetation should not be cleared for uses that are likely to increase sediment loss.

Recommendation 60 Greater Wellington aligns its programmes, planning, funding and support of sediment mitigation activities, including both riparian restoration and reductions in hill-slope and landslide erosion, within the identified priority areas.

Recommendation 61 Greater Wellington provides sufficient resources in the Whaitua to deliver land management advice, provide expert input into environment plans and to deliver on the work programmes identified.

Recommendation 62 Greater Wellington prioritises opportunities to mitigate sediment loss from erosion-prone lands in council-administered regional parks within the Whaitua.

Appendix 1(b)

Te Whaitua Te Awaroa-o-Porerua: Recommendations – Appropriate rural land use practices.

RECOMMENDATIONS

SUPPORTING IMPLEMENTATION OF NATIONAL REGULATIONS AND BEYOND

- 33** Greater Wellington provides sufficient Land Management advisory resources and funding to:
- Support the implementation of actions at property and catchment levels to achieve catchment plan objectives
 - Support landowners' implementation of national stock exclusion rules.
 - Help link farmers' action (including through their Freshwater Farm Plans) to catchment plans and help small block owners to link their actions to catchment plans.
 - Support the implementation of Freshwater Farm Plans to ensure quality delivery of farm planning services and effective connections to catchment plans.
 - Promote the uptake of best management practice and ensure open communication between landowners and Greater Wellington to keep best practices up to date.
 - Integrate advice to landowners with other relevant objectives to achieve co-benefits (e.g., carbon sequestration, biodiversity)
- 34** Greater Wellington supports landowners to exclude livestock from waterways by:
- Helping them to develop and implement practices that minimise stock access to streams not covered by regulations
 - Investigating the specific impacts of horses on water quality and considering further stock exclusion regulations if they are identified as a significant source of contaminants.

INCENTIVISING REVEGETATION OF VULNERABLE LAND

- 35** Greater Wellington investigates alternative incentives (e.g., rates rebates) to increase landowners' uptake of revegetation projects, including projects using native plant species.

This applies particularly to landowners with marginal and erosion-prone land (to reduce erosion and sediment loss), wetlands (for nutrient stripping, etc), and rural catchments generally (to slow flood flows further down the catchment).

SUPPORTING THE DEVELOPMENT OF PROPERTY LEVEL INFORMATION

- 36** Greater Wellington supports the development of property-specific information to inform Freshwater Farm Plan development, particularly for managing diffuse discharges, CSA (Critical Source Area, i.e., hotspot) management, riparian planting (to complement stream fencing regs), and management methods for those streams where stock exclusion rules do not apply.

SUPPORTING BEST PRACTICE AND COMPLIANCE OF FORESTRY OPERATIONS

- 37** Greater Wellington provides enough staff and resources to:
- Work with forestry groups (New Zealand Farm Forestry Association, New Zealand Forest Owners Association) and contractors to provide proactive advisory support that includes ensuring all forestry operators are aware (by 2023) of relevant regulatory requirements and good practice.

-
- Ensure all forestry operators in the whitua are monitored for compliance with the National Environmental Standard for Plantation Forestry (NES-PF) and other relevant requirements from 2023 onwards and share this monitoring information with the community.
 - Take enforcement action on non-compliance.

Appendix 2(a)

Te Whaitua Te Awaroa-o-Porerua Objectives

Table 3. Freshwater objectives and timeframes

	WMU name	Taupō	Rangituhi	Pouewe	Takapū	Te Riu o Porirua
<i>E. coli</i>	CURRENT STATE	E	E	E	E	E
	OBJECTIVE	B	A	B	C	C
	TIMEFRAME*	2040	2040	2040	2040	2040
Ammonia	CURRENT STATE	A	A	A	A	C
	OBJECTIVE	A	A	A	A	A/C ¹⁷
	TIMEFRAME*	M	M	M	M	M
Nitrate	CURRENT STATE	A	A	A	A	B
	OBJECTIVE	A	A	A	A	A
	TIMEFRAME*	M	M	M	M	2040
Dissolved Zinc	CURRENT STATE	C	D	A	A	D
	OBJECTIVE	A	A	A	A	C
	TIMEFRAME*	2040	2040	M	M	2040
Dissolved Copper	CURRENT STATE	D	D	A	A	D
	OBJECTIVE	B	A	A	A	C
	TIMEFRAME*	2040	2040	M	M	2040
Periphyton	CURRENT STATE	C	A	C	C	C/B ¹⁸
	OBJECTIVE	B	A	B	B	B
	TIMEFRAME*	2040	M	2040	2040	2040
MCI	CURRENT STATE	C	C	C/B ¹⁹	C/B ²⁰	C
	OBJECTIVE	B	A	A	B	C
	TIMEFRAME*	2040	2040	2040	2040	M
Native fish	CURRENT STATE	C	C	B/A	B	C/B
	OBJECTIVE	B	A	A	A	B
	TIMEFRAME*	2040	2040	2040	2040	2040

Table 4. Coastal water objectives and timeframes

WMU name		Onepoto Arm		Pauatahanui Inlet		Coast
		Intertidal	Subtidal	Intertidal	Subtidal	
Enterococci	CURRENT STATE	D		D		B
	OBJECTIVE	C		B		B
	TIMEFRAME*	2040		2040		M
Total zinc in sediment	CURRENT STATE	B	C	A	B	
	OBJECTIVE	B	C	A	B	
	TIMEFRAME*	M	M	M	M	
Total copper in sediment	CURRENT STATE	A	B	A	A	
	OBJECTIVE	A	B	A	A	
	TIMEFRAME*	M	M	M	M	
Macro algae	CURRENT STATE	B	N/A	B	N/A	
	OBJECTIVE	B	N/A	B	N/A	
	TIMEFRAME*	M	N/A	M	N/A	
Sedimentation rate	OBJECTIVE	Net average sedimentation rate is less than 1mm/year in Onepoto Arm (rolling average over the most recent 5 years of data)		Net average sedimentation rate is less than 2mm/year in Pauatahanui Inlet (rolling average over the most recent 5 years of data)		
	TIMEFRAME*	2040		2040		
Muddiness	OBJECTIVE	Sediment mud content will not exceed 20% in intertidal sediments/ no increase from current state	N/A	Sediment mud content will not exceed 20% in intertidal sediments/ no increase from current state	N/A	
	TIMEFRAME*	M	N/A	M	N/A	
Muddiness	OBJECTIVE	Spatial extent of soft mud will not exceed 15% of available intertidal area/no increase in soft mud area from current	N/A	Spatial extent of soft mud will not exceed 15% of available intertidal area/no increase in soft mud area from current	N/A	
	TIMEFRAME*	M	N/A	M	N/A	

Appendix 2(b)

Te Whaitua Te Awaroa-o-Porerua: Objectives.

Sub-catchment areas	Ecological health												Human health							
	Macroinvertebrates					Periphyton					Fish					E. coli				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		A	-	A	A		C	-	C	A	
Te Awa Kairangi Lower mainstem	B	+	B	B		C	+	C	B		A	-	A	A		D	-	D	C	
Te Awa Kairangi Rural mainstems	C	+	C	B		C	+	C	B		B	+	B	A		D	+	D	B	
Te Awa Kairangi rural streams	C	+	C	B		C	+	C	B		B	+	B	A		D	+	D	B	
Te Awa Kairangi urban streams	C	+	C	C		C	+	C	C		B	+	B	A		E	-	E	C	
Waiwhetū Stream	D	-	D	C		C	+	C	C		A	-	A	A		E	-	E	C	
Te Awa Kairangi/Hutt Estuary *	C	+	C	C		C	+	C	C		Not applicable					C	+	C	B	
Te Whanganui-a-Tara (outer harbour)*	B	+	B	B		A	-	A	A		Not applicable					C	+	C	B	

Sub-catchment areas	Ecological toxicity																			
	Copper					Zinc					Nitrate					Ammonia				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Lower mainstem	A	+	A	A		A	+	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Rural mainstems	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi rural streams	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi urban streams	B	+	B	A		B	+	B	A		A	-	A	A		A	-	A	A	
Waiwhetū Stream	C	+	C	A		D	-	D	B		A	-	A	A		B	+	B	A	
Te Awa Kairangi/Hutt Estuary *	A	+	A	A		A	+	A	A		Not applicable					Not applicable				
Te Whanganui-a-Tara (outer harbour)*	A	+	A	A		A	+	A	A		Not applicable					Not applicable				

Sub-catchment areas	Sediment										Phosphorus					Dissolved oxygen				
	Clarity					Deposited					Phosphorus					Dissolved oxygen				
	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term	Current		First steps		Longer term
	C	F	S	G		C	F	S	G		C	F	S	G		C	F	S	G	
Te Awa Kairangi small forested	A	-	A	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Forested mainstems	A	-	A	A		A	-	A	A		B	+	B	A		A	-	A	A	
Te Awa Kairangi Lower mainstem	B	+	B	A		A	-	A	A		A	-	A	A		A	-	A	A	
Te Awa Kairangi Rural mainstems	D	+	D	C		A	-	A	A		B	+	B	A		A	-	A	A	
Te Awa Kairangi rural streams	B	+	B	A		A	-	A	A		B	+	B	A		A	-	A	A	
Te Awa Kairangi urban streams	D	+	D	D		No data					C	+	C	C		A	-	A	A	
Waiwhetū Stream	A	+	A	A		Not applicable					D	-	D	C		B	+	B	A	
Te Awa Kairangi/Hutt Estuary *	Not applicable					B	+	B	B		Not applicable					Not applicable				
Te Whanganui-a-Tara (outer harbour)*	Not applicable					D	+	D	D		Not applicable					Not applicable				

Appendix 2(c)

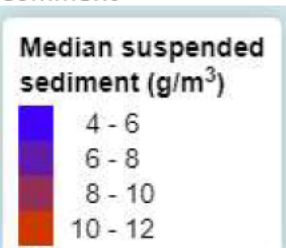
Measured attribute states for rivers with plantations

Whaitua	Stream with forest	Attribute = Clarity		N	Median (m)	Comment
		Modelled	Actual			
TAP	Horokiri	D	D	59	2.7	
TWT	Whakatete	B	A	59	3.3	
TWT	Akatarawa	A	A	59	3.75	
TWT	Pakaratahi	A	A	59	4.08	
TWT	Mangaroa	D	D	59	1.41	


Deposited Sediment

Whaitua	Stream with forest	Class	Attribute = D.Sediment		N	Median Cover (%)	Comment
			Modelled	Actual			
TAP	Horokiri	4	B	A	59	10	
TWT	Whakatete	4	A	A	59	5	
TWT	Akatarawa	4	A	A	59	5	
TWT	Pakaratahi	4	A	A	59	3	
TWT	Mangaroa	4	A	A	58	2	

Suspended Sediment

Whaitua	Stream with forest	Attribute = S.Sediment g/m3			N	Comment
		Min	Med	Max		
TAP	Horokiri	2	5	75	34	 <p>Median suspended sediment (g/m³)</p> <ul style="list-style-type: none"> 4 - 6 6 - 8 8 - 10 10 - 12
TWT	Whakatete	5	5	5.5	32	
TWT	Akatarawa	5	5	42	34	
TWT	Pakaratahi	5	5	280	34	
TWT	Mangaroa	5	5	66	34	

Total

Whaitua	Stream with forest	Attribute = tot S.Sediment g/m3			N	Comment
		Min	Med	Max		
TAP	Horokiri	1	2	67	34	 <p>Median total suspended solids (g/m³)</p> <ul style="list-style-type: none"> 0 - 2 2 - 4 4 - 6 6 - 8 8 - 10
TWT	Whakatete	1	1	13	33	
TWT	Akatarawa	1	1	36	34	
TWT	Pakaratahi	1	1	240	34	
TWT	Mangaroa	1	2	41	34	

Appendix 2(d)

Measured ecological attribute states for rivers with plantations.

MCI

Whaitua	Stream with forest	Attribute = MCI			Meets NPRP Objective	Comment
		2021	3yr	Class		
TAP	Horokiri	107	107	B	Y	
TWT	Whakatete	139	131	A	Y	
TWT	Akatarawa	144	137	A	Y	
TWT	Pakaratahi	122	122	B	N	
TWT	Mangaroa	122	119	C	N	

QMCI

Whaitua	Stream with forest	Attribute = QMCI			Meets NPRP Objective	Comment
		Median 5(yr)	Class			
TAP	Horokiri	4.9	C			
TWT	Whakatete	6.8	A			
TWT	Akatarawa	8	A			
TWT	Pakaratahi	7	B			
TWT	Mangaroa	5.2	C			

%EPT

Whaitua	Stream with forest	Attribute		Score ranges – Red poor - Blue good
		%EPT Median 5(yr)	Habitat score	
TAP	Horokiri	50	61.0	<p>EPT taxa (%)</p> <ul style="list-style-type: none"> 0 - 20 20 - 40 40 - 60 60 - 80 <p>Overall habitat score (out of 100)</p> <ul style="list-style-type: none"> 20 - 40 40 - 60 60 - 80 80 - 100
TWT	Whakatete	60.7	90.0	
TWT	Akatarawa	68.2	81.5	
TWT	Pakaratahi	55.2	75.5	
TWT	Mangaroa	52.4	73	