Appendix 4 – Summary of Submissions



Ministerial Inquiry into Land Use – Submissions Analysis Summary of Submissions

26 April 2023





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Table of Contents

Glossary4			
Exec	Executive Summary5		
1	Intro	uction and Methodology10	
	1.1	ntroduction10	
	1.2	Methodology11	
	1.3	Submissions Overview11	
	1.4	Demographic information12	
	1.5	Quantifying submitters15	
	1.6	High level overarching themes15	
	1.7	General feedback about the consultation process15	
2	Anal	sis by submitter type16	
	2.1	Sub-regional views	
	2.2	Māori submitters17	
	2.3	ndustry20	
	2.4	_ocal government21	
3	Disc	ssion22	
	3.1	mpacts and experiences22	
	3.2	Causes	
	3.3	Solutions	
	Out o	scope	
Арре	endix	List of organisations50	
Арре	endix	Recommendations from local government submitters	
Appendix C:		Coding framework and numbers61	

Tables

Table 1: Consultation guestions	10
Table 2: Submissions received and coded	12
Table 3: Types of submitters	13
Table 4: Quantification of submitters	15

Figures

Figure 1: Number of submitters by region	12
Figure 2: Number of local resident submitters	13
Figure 3: Number of submitters representing organisations	14
Figure 4: Submitter affiliations	14

Glossary

Acronym	Definition
AEP	Annual Exceedance Probability
ESC	Erosion Susceptibility Classification
ETS	Emissions Trading Scheme
GDC	Gisborne District Council
HBRC	Hawkes Bay Regional Council
LGNZ	Local Government New Zealand
LUC	Land Use Capability
MfE	Ministry for the Environment
MILU	Ministerial Inquiry for Land Use
MPI	Ministry for Primary Industries
NES-PF	National Environmental Standards for Plantation Forestry
NPS-FM	National Policy Statement for Freshwater Management
RMA	Resource Management Act 1991

8



Executive Summary

Allen + *Clarke* was commissioned to analyse submissions received during a Ministerial Inquiry into Land Use (MILU) causing woody debris (including forestry slash) and sediment-related damage in Te Tairāwhiti, Tūranganui-a-Kiwa, and Te Wairoa regions (the Inquiry).

This report summarises views submitted during the consultation (including late submissions), which ran from 13 March to 6 April 2023.

Submissions received

The MILU received **320** submissions. Submissions were tagged against an agreed framework based on themes and questions.

The majority of submissions were from local residents (156, 55% of the Citizen Space submitters), including 99 (32%) from the Te Tairāwhiti region, and 57 (19%) from individuals who identified as Māori.

Major themes

The impacts and experiences of Cyclone Gabrielle on local submitters were wideranging and severe.

- Most local submitters noted personal and well-being related impacts, including physical (home and land, and physical health), mental health-related, and harmful cultural and spiritual impacts caused by destruction and harm to waitai and wai Māori.
- Most submitters commented on the destruction and damage to infrastructure, including major roads, bridges and power lines, and noted that communities were left isolated and blocked from essential transport routes. It was repeatedly noted that this damage was exacerbated by silt and woody debris in the floodwaters.
- Many submitters commented on the environmental impacts, including severe damage to beaches and waterways, and noted the impacts of this to the communities, and habitats of aquatic species.
- The forestry industry and local submitters noted significant economic impacts, including loss and damage to tree crops, local farms, orchards, commercial fisheries, and other business in the area. Submitters noted the ongoing effects of economic impacts, such as a reduction in tourism.
- Some submitters noted historical events, with Cyclone Gabrielle compounding existing damages and mess that had not been cleaned up from previous storms.

Submitters listed a wide range of causes for the extent of damage in the region.

• Many submitters noted that land in Tairāwhiti is being inappropriately used, and has always been susceptible to erosion due to its topography and geology. Submitters noted that concerns about contributing factors to the severe



impacts of storms have been raised repeatedly by local communities, but the government has not listened or included them in decision-making processes.

- Many submitters discussed the role of certain forestry practices and considered that *pinus radiata* plantation forestry has been a major contributor to storm damage, and the mobilisation of woody debris and silt/sediment. Submitters were generally of the view that woody debris (which is mostly made of forestry slash, according to submitters) is the main cause of damage to infrastructure following heavy rainfall events.
- Many submitters noted that the Gisborne-East Coast region is naturally erosion-prone, and were concerned that human activities have increased the susceptibility of the land to erosion during heavy rainfall. While submitters generally did not consider pastoral farming or *pinus radiata* plantations to be inherently inappropriate, they did note that these activities should only be undertaken after careful consideration of whether the geology of the proposed site will introduce unmanageable risk of silt and sediment mobilisation.
- Many submitters noted that there was a lack of sufficient investment in, and maintenance of, the region's infrastructure, such as stormwater systems, roads and bridges. Submitters also commented on the lack of management and general disregard for the region's roads, particularly in rural areas. In addition, there was particular concern about the impact of under-investment in infrastructure on small Māori communities.
- Some submitters noted the impact of waterway management, including riparian planting not being appropriately managed, and key waterway infrastructure not being designed and maintained appropriately to enable proper function during periods of high water levels.
- Some submitters commented that the cumulative effect of several policies and regulations provides incentivisation of inappropriate land use, which leads to a high level of harm following significant weather events. Submitters who identified as being affiliated with iwi and hapu were concerned that legislation is developed outside the region by people without a connection to the whenua or environment. These submitters were also concerned that the policy and legislative framework does not take a sufficiently holistic approach to the management of land use and associated risks. Specific policies and legislation mentioned by submitters were:
- Councils are under resourced to carry out their obligations under the **Resource Management Act 1991 (RMA),** and **penalties are inadequate to deter large commercial operators** carrying out harmful activities.
- The large volume of post-harvest woody debris mobilised demonstrates that the National Environmental Standard for Plantation Forestry (NES-PF) is not effective at managing the adverse effects associated with forestry.
- The National Policy Statement for Freshwater Management (NPS-FM) is important, as many of the impacts of forestry activities are felt in the freshwater environment.



- The **Emissions Trading Scheme (ETS)** incentivises land-use conversion to *pinus radiata* plantations, and not indigenous forests. This theme was repeated throughout the consultation.
- Many submitters were generally concerned about a lack of proactive monitoring of forestry companies' activities for compliance with relevant rules or regulations.
- Submitters were also concerned that foreign companies invest money to ensure that the regulatory environment serves their interests, rather than the interests of local communities.
- Some submitters were concerned that the **local government failed to adequately set, monitor and enforce** consent conditions in relation to planting and harvesting forestry. In addition, some submitters noted that councils have allowed housing to be built on floodplains, increasing the risks to communities.

Submitters suggested a range of thoughtful potential solutions to the issues facing the region ...

- Most submitters who identified as Māori mentioned that their vision for future land use included maintaining or redeveloping connection with the whenua. Submitters agreed that solutions should be grounded in te ao Māori, and that future policy settings should consider the holistic nature of the interconnectedness between te taiao and tangata whenua. Many submitters noted that communities, local whānau, hapu, iwi, and tangata whenua should be involved in the development and implementation of solutions.
- Many submitters considered that **land should be better managed**, and that their vision was for **land use to match the land suitability.** This included avoiding monocultural regions and focusing on varied land use.
- A few submitters considered **pastoral farming to be a more productive use of land**, as it provides more sustainable and consistent employment.
- Some submitters noted the need to improve the resilience of infrastructure in the region, such as roads, bridges and flood works, and noted that storm events will increase in frequency and intensity.

... and had a range of suggestions for ensuring that their vision for the future was achieved.

- Many submitters considered that more native trees should be planted, and the region should have a greater focus on biodiversity. Some submitters emphasised the need to engage with local Māori to ensure that the correct species are planted in appropriate areas.
- Many submitters provided suggestions to improve existing forestry practices to mitigate some impacts felt after Cyclones Hale and Gabrielle from forestry slash, including:
 - o banning, or limiting, **clear felling** on erosion-prone land
 - using low-impact felling equipment



- o increased use of 'slash traps'
- o detail mapping of landscapes.
- Submitters expressed concern about the amount of forestry waste being created in the region, and suggested solutions for waste products including:
 - o processing woody biomass for other products, like pulp
 - o creating **biochar** via a range of different methods
 - o conversion into a sustainable **energy** source.
- Most submitters commented on their vision of land management for the future, including:
 - o right tree in the right place
 - better management of **riparian zones**
 - use of **silvicultural** systems
 - strong **pest control** to support healthy forests
 - better land use planning
 - strong leadership by local government.
- Many submitters noted that the policy and legislative framework would need to change, including:
 - o changes to the ETS to better support emissions reductions
 - o improvements to the RMA and NES-PF to better manage erosion risk
 - more research and reliance on science to understand the best land use for an area, and options for more sustainable land use
 - ensuring that local authorities are monitoring and enforcing regulations to achieve compliance
 - **incentivising** 'best practice' land use to support sustainable and long-term solutions.

Submitters agreed that community and tangata whenua-led solutions were key to future success.

- Many submitters identified **local communities** as key to discussions about developing solutions.
- Many submitters considered that **tangata whenua should have a strong role** in the implementation of solutions, and that government should engage with tangata whenua throughout the process.
- Submitters generally considered that **government would need to be involved in developing solutions**, and that the government should consult with a wide range of stakeholders for solutions to be successful.



• Other groups that were seen as important were landowners, industry, scientists, infrastructure designers, engineers, legal experts, conservationists, ecologists, various industry bodies, and university and research groups.



1 Introduction and Methodology

1.1 Introduction

On 23 February 2023, the Minister for the Environment, Hon David Parker, and the Minister of Forestry at the time, Hon Stuart Nash, announced a Ministerial Inquiry into Land Use causing woody debris (including forestry slash) and sediment-related damage in Te Tairāwhiti, Tūranganui-a-Kiwa, and Te Wairoa regions (the Inquiry). The appointed Inquiry Panel currently includes Hon Hekia Parata (Chair), Matthew McCloy, and Dave Brash (the Panel). A report and recommendations (the Inquiry Report) from the Panel is due on 30 April 2023. Secretariat support for the Panel was provided by seconding officials from the Ministry for the Environment (MfE) and the Ministry for Primary Industries (MPI).

As part of the Inquiry's engagement, an online public consultation was open from **13 March 2023** to **6 April 2023**. The public consultation was hosted on MfE's Citizen Space website. **Table 1** sets out the consultation questions, and the corresponding section of this report.

Allen + *Clarke* was commissioned by the MILU Secretariat to analyse submissions received in response to the online public consultation. This consultation was undertaken while the recovery from Cyclone Gabrielle continued.

Question	Report section
1. Tell us about your experience during Cyclones Hale and Gabrielle? What effects have you experienced?	Section 3.1
2. What is it about the way we use land, and how land use has changed over time, that led to the effects being so severe?	Section 3.2
3. Are there specific practices or ways in which we use land that have had a bigger contribution than others? Which practices and most important? Why?	Section 3.2
4. Anything else we should know about causes of recent damage?	Section 3.2
5. How do current laws, policies, and rules influence the way we use our land? What works well? What is unhelpful? Think about the current legislation, market drivers and conditions, regulations, rules, and the way in which requirements are enforced.	Section 3.2.6
6. Anything else you would like to say about the current policy framework?	Section 3.2.6
7. What is your vision for the future of land use in the region?	Section 3.3.1

Table 1: Consultation questions



Question	Report section	
8. What do we need to do to achieve this vision:		
a. Immediately? (in the next 12 months)		
b. In the short term? (next 1- 2 years)	Section 2.2.2	
c. In the medium term? (3-5 years)	<u>Section 3.3.2</u>	
d. In the long term? (10+ years)		
e. Far into the future? (100 years)		
9. Is there anything that shouldn't be changed, for example, things that if changed would make it worse?		
10. In your view, what groups need to be involved in developing solutions and what is the best way for these groups to be involved?		

1.2 Methodology

All submissions received from Citizen Space and via email were uploaded by *Allen* + *Clarke* into NVivo 12 qualitative analysis software and coded against a thematic framework for analysis. The majority of submissions were substantive, and many submissions were comprehensive and complex.

A thematic analysis of the coding was completed, and an emerging themes report was presented to MfE, in draft on Tuesday 11 April, and finalised on Thursday 13 April.

Further analysis has since been undertaken to expand on the emerging themes to provide a more fulsome summary of the submissions received. This includes a detailed summary of the thematic content focused on submitters' experiences, feedback about the causes of damage, and submitters' vision for the future and solutions of how to achieve that vision. Quotes have been used throughout the report to illustrate particular points of view.

1.3 Submissions Overview

Submissions closed at 11.59pm on Thursday 6 April 2023. Three hundred and one submissions were received through Citizen Space with 149 attachments. MfE entered 45 email submissions into Citizen Space during the course of the consultation. Seventeen email submissions were also sent through to *Allen* + *Clarke* as attachments by MfE (with two form submissions included). The numbers of submissions are set out in **Table 2** (overleaf).



Table 2: Submissions received and coded

Submission type	Number
 Unique online feedback 265 Citizen Space survey responses 17 individual emails (outside of Citizen Space) 	282
Form submission from Roger Dickie Ltd Other Form Submissions	36 2
Total	320

1.4 Demographic information

Submissions were received from a range of individuals and organisations. A list of the organisations that submitted has been included in **Appendix A: List of organisations**. Throughout the report, individual submitters have remained anonymous. Some organisations with distinct views have been named where relevant.

Figure 1 shows a breakdown of the number of submitters from each of the regions included in the MILU.

Figure 1: Number of submitters by region



Of the Citizen Space submissions, **Table 3** (overleaf) provides some of the breakdown of the number of submitters who identified themselves within priority groups identified by the MILU. Submitters were able to select multiple options for their demographic information, hence the



submitter types are not mutually exclusive and the numbers in equal significantly more than the total number of submissions. Please note that the submitter type was only identified by those that submitted via Citizen Space. Further breakdowns of Citizen Space submissions are provided in **Figures 2, 3** and **4**.

Table 3: Types of submitters

Submitter type	Number	%
Local residents	156	55%
Te Tairāwhiti region	99	35%
Te Wairoa region	26	9%
Tūranganui-a-Kiwa region	27	10%
Associated with Iwi/Hapū	50	18%
Associated with marae	33	12%
Māori	57	20%
Rural landowner	135	48%
Company	45	16%
Industry body	22	8%
NGO	13	5%
Registered charity		4%
Academic of subject matter expert		15%
Local government	5	2%

Figure 2: Number of local resident submitters





Figure 3: Number of submitters representing organisations



Figure 4: Submitter affiliations





1.5 Quantifying submitters

When referring to submitters, the report quantifies support for positions based on the classifications in **Table 4**. These classifications relate to the number of responses received, that is, the same terms are used relative to the proportion of responses to that question.

Table 4:	Quantification	of submitters
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Classification	Definition
Few	Fewer than 5% of submitters on this topic.
Some	5 to 25% of submitters on this topic.
Many	26 to 50% of submitters on this topic.
Most	More than 50% of submitters on this topic.
All	100% of submitters on this topic.

1.6 High level overarching themes

Submissions were heavily focused on the forestry industry, the impact of slash in the wake of Cyclones Hale and Gabrielle, and how the forestry industry in New Zealand can be improved to support sustainability going forward. There were many submissions that mentioned the widespread use of *pinus radiata* by the New Zealand forestry industry, the erosion prone and often steep land in Te Tairāwhiti, Tūranganui-a-Kiwa, and Te Wairoa, and how that combination resulted in detrimental impacts from the severe weather.

The phrase "right tree in the right place" was used many times by submitters, and one of the key themes that was found throughout the submissions was a desire to diversify the land use in Te Tairāwhiti, Tūranganui-a-Kiwa, and Te Wairoa through careful and considered planning. It was suggested that this could be supported through amendments to the Resource Management Act 1991 and associated regulations, the Emissions Trading Scheme, and other non-regulatory interventions.

1.7 General feedback about the consultation process

Generally, the only feedback that was received about the consultation process was about the timeframes. Some submitters felt that the timeframe available to make a submission was unreasonably short, particularly given that the region is still undertaking recovery efforts. Some submitters wished to state, for the record, that their submission was not as comprehensive as it could have been given the narrow consultation timeframe.

A few submitters mentioned that they expected more fulsome engagement if, or when, policy changes are being recommended. Other submitters expressed concern that the Inquiry wouldn't result in any substantive changes and one submitter urged the Panel not to let it "wither on the vine".



2 Analysis by submitter type

2.1 Sub-regional views

As with all submitter types, the key themes throughout the report are generally reflected through all submissions. This section provides a high-level overview of some of the things the submitters from Te Tairāwhiti, Te Wairoa, and Tūranganui-a-Kiwa said that are specific to the region.

2.1.1 Te Tairāwhiti

Many submitters from Te Tairāwhiti commented on the amount of slash and other woody debris that still litters the area, and of their desire for more sustainable land use practices.

The lack of investment in infrastructure in the region was raised consistently, particularly for those submitters in rural areas. Submitters states that the impact of weather events on rural roads is felt strongly in the region.

The type of land in the region was often mentioned by submitters from Te Tairāwhiti, emphasising that the soil is highly erodible and often steep terrain. As with most submitters, there is a strong sentiment coming through from Te Tairāwhiti that *pinus radiata* should not be planted in such a widespread manner, and that poor forestry practices (such as clear felling and not reappropriating woody debris) has negatively impacted the region.

The NES-PF also came up often in submissions from Te Tairāwhiti, with comments about it not being implemented thoroughly in the region, and complaints about a lack of monitoring and enforcement from the GDC, and poor resource consent processes.

2.1.2 Te Wairoa

Almost every submission from Te Wairoa mentioned the negative impact of forestry slash after Cyclone Gabrielle. Most submissions discussed the forestry industry and some of the practices that negatively impacted the region, particularly harvesting practices. Many

"What was different this time was the additional damage caused by the addition of a large amount of forestry slash that accumulated on bridges and exacerbated damage"

[Te Wairoa local resident and rural landowner]

ne region, particularly harvesting practices. Many submitters felt that the forestry industry needed strong regulation and for their practices to be tightly restricted. Most submitters from Te Wairoa felt that native forestry, diversification of crops, and better land use planning, were key aspects for a successful solution.

The farming industry was also mentioned by a number of Te Wairoa submitters, commenting on how the industry has changed in the region over the years and that pastoral farmers need to be planting trees or scrub, and using less chemicals, to minimise the impacts to waterways in severe weather events.



2.1.3 Tūranganui-a-Kiwa

Many submitters from Tūranganui-a-Kiwa commented on the steep and fragile land in the area and the poor water quality that they saw after the severe weather events. As with most other submitters, there was substantial commentary on the practices of the forestry industry, the importance of re-establishing native trees and forest in the region, and the importance of diversifying the vegetation in the region going forward. Water quality was also a key theme, with submitters suggesting better management of riparian zones and better monitoring of water quality.

2.2 Māori submitters

When prompted for demographic information, the statement to submitters was "*Please choose any you are associated with*" and listed the demographic categories. Most Māori submitters also 'ticked' that they were associated with "Iwi/Hapū" and "Marae". This means that the submissions from those who identified as iwi/hapū and marae submitters followed the same themes as those included in the Māori demographic analysis.

2.2.1 Land use

Māori submitters talked about the highly erodible land/soil in the region, and the fact that the historical use of the land contributed to the damage caused as a result of Cyclones Hale and Gabrielle. This included: the clearing of native trees, clearing of land for pastoral farming, previous flooding and damage, widespread planting of *pinus radiata*, and a lack of wetlands to absorb flooding effects. Other significant weather events were often mentioned, with comments about a lack of adequate recovery from these historical weather events.

The clearing of native trees was mentioned numerous times; seen as having an extremely negative impact on the whenua.

Most Māori submitters that commented on land use commented on forestry. This included things like:

 Poor practices by the forestry industry. For example, leaving woody debris after harvesting, intensive forestry operations where the whenua is not designed for it, planting pines on unstable ground, and clear felling practices. "Our geology is bad to start with, clearing natives for farming was disastrous which was highlighted by Bola, and pine forestry was worse."

[Gisborne/Te Tairāwhiti, local resident, Māori, rural landowner]

• Contamination of waterways. For example, slash in waterways, planting exotic species too close to waterways, and sedimentation run-off in waterways.

A few submitters also commented on the ability of waterways to adjust to heavy rainfall; with waterways becoming shallower due to sedimentation, at higher risk of breaking their banks, and debris of previous storms being left to settle in riverbeds. One submitter used Taurangakautukutuku, Karakatuwhero and Awatere rivers as examples of waterways that need attention.



Only a few Māori submitters commented on farming practices, but those who did mentioned the spraying of Mānuka and Kānuka which are native and grow wildly in the region. A few submitters commented that unplanted farmland exacerbated the movement of woody debris and sediment.

A few Māori submitters also commented on the westernised way of doing things.

"[f]ailure to consider and acknowledge the Kawa O Te Wa Nui A Tane."

[Te Tairāwhiti local resident, Māori, iwi/hapū, marae, rural landowner] "Ko te ture ō inaianei tētahi huarahi. Ko Te Tikanga Māori tētahi atu"

[Local whānau, Tūranganui-a-Kiwa]

Many Māori submitters mentioned native trees as part of their vision for the future; seeing more native trees growing in the region. It was often noted that the ETS does not currently incentivise the planting of native trees. A few Māori submitters mentioned not being eligible for the regenerating native option under the ETS because the land started to regenerate prior to 1989/1990.

Te Tumu Paeroa had significant comments on the current policy and regulatory framework. For example, they do not think that the Erosion Control Funding Programme was ever fit-forpurpose for small whenua Māori entities.

"When the first draft of the National Policy Statement for Indigenous Biodiversity was released in 2019, section 32 report indicated that whenua Māori was disproportionality affected by the policy proposals, however no allowances, at the time, were made in the policy to recognise the complexities and nuances of whenua Māori ownership until submissions were received. This was also the case with the "Pricing of Agricultural Emissions Discussion Document" released in 2022 where the Māori Trustee highlighted that the Government had designed the system based on a western framework that did not provide for whenua Māori and its owners. Instead, the lessee's or farm operators held the power and owners were not considered and again locked out.

The Māori Trustee also notes that the Government's glacial pace in addressing Māori freshwater rights and interests continues to obstruct the ability for Māori to develop their whenua. There are numerous Māori land blocks within the Tairāwhiti region that could be developed for alternative uses if access to water was possible.

[Te Tumu Paeroa]

Some Māori submitters felt that the forestry industry needed to be more closely regulated, for example, be required to clear forestry slash/by-products. Some Māori submitters also felt that foreign ownership of forestry was not beneficial to the region's whenua.

2.2.2 Vision for the future

Māori submitters talked about "letting the whenua heal" and native regeneration. Submitters eloquently described their vision for the future, for example "*That our hapū, and marae whānau will not be alienated from their whenua.*" and "*Ka ora te whenua, ka ora te tangata – When the land is well, the people are well*".

Most Māori submitters' vision for the future included seeing more natives planted.

Planting riparian zones (particularly with natives) and finding productive uses for woody biomass (biochar, pulp, etc.) was also commonly suggested.

Many solutions were suggested by Māori submitters, all of which are reflected in Section 3.3 Solutions.

Some of the key solutions that were often suggested by Māori submitters were:

- assessing where production forestry or pastoral farming should be banned due to the land type (e.g., erosion prone)
- banning or restricting clear felling
- planting more native forest
- restricting the size of pine plantations
- better riparian zone management and planting
- creating useful by-products from forestry waste.

Amendments to the ETS particuarly to incentivise the planting of native trees was often suggested. It was also suggested that the ETS regime is amended to avoid disadvantaging Māori landowners whose native forests were planted pre-1990, or those with non-Western land or forest ownership structures.

Many Māori submitters also felt that forestry companies needed to be held to account and the fees and fines for non-compliance with the regulatory regime should be reassessed. It was suggested that the fees and fines should be graduated based on the size of the company (e.g., measured by gross income or gross profit).

The NES-PF was also often raised by submitters. It was suggested that the regulatory regime should allow for regional rules that can override the national standards.

"Deregulation of the forestry industry has lead [sic] to abuse and neglect of the whenua and waterways."

[Te Tairāwhiti local resident, iwi/hapu, Māori, rural landowner]



It was often suggested that land use should be planned for and implemented from a mātauranga Māori position and ensure that the land use matches the land suitability. Submitters felt that the rebuilding process needs to be inclusive and collaborative of Māori, non-Māori, landowners, farmers, iwi, marae, hapu, tourism, and community focused groups. It was emphasised that the people in the region should be engaged early and often, and the council should be working with relevant hapū throughout the region.

"It [the policy framework] certainly needs a complete rebuild and preferably by people who work and live on the land and not by city slickers behind a desk at the Beehive who doesn't know what a steer is."

[Hawke's Bay/Te Wairoa local resident, iwi/hapu, marae, Māori, academic of subject matter expert]

There was also commentary about infrastructure planning in the region, and that it could be greatly

improved. Particularly the resilience of roads and bridges. It was also commented that the local economy is heavily reliant on a few industries; some submitters saw this as an opportunity to diversify the local economy to avoid heavy reliance on production forestry in future.

2.3 Industry

Many industry submitters commented on the vulnerability of the land after clear fell harvesting and the associated risk of erosion at that point. Industry submitters tended to recognise the impacts of forestry practices, particularly on the role of forestry waste after the severe weather events, but often noted that there is currently no incentive for the removal and repurposing of

"Forest owners will largely continue as they have done in the past, making small adjustments to comply with new environmental regulations, unless there is a combination of 'carrots and sticks' to encourage them to diversify away from radiata pine to other species, and to reduce the scale of their harvest operations.

[Northland Wood Council]

that waste. It was submitted that the current policy framework does not support a circular bioeconomy for the forestry industry. Some suggestions for the repurposing of forestry waste included: establishing a pulp mill in the region, making usable firewood available for public use, and trucking slash out of harvested areas.

Industry submitters acknowledged the impact that slash had on communities after Cyclone Hale and Gabrielle and the use of slash traps and guardrails were often explored in submissions.

The most notable difference between submitters from industry and other submitters was the discussion about native trees and forest. Some industry submitters noted that native forest was likely to be suggested as a solution. They often noted that native forest was not a whole solution and that the need for economic returns from productive land cannot be ignored. Some submitters urged that a pragmatic approach is taken to solutions; where climate forestry is balanced with economic value and a strategic approach to land use is taken.



It was also suggested that central government needed to intervene in relation to carbon price. A few industry submitters suggested that the ETS is amended to support continuous cover forestry in order to make it economically viable. One industry submitter said,

"We need central government to stabilise the carbon price to send clearer signals to the investment community, and thereby unlock large volumes of private capital for this task. This carbon price stabilisation would greatly benefit from a cross party agreement on carbon market policy. [...]

We need central government to reduce investment risk to investors considering investing in continuous cover forestry (CCF), and re-wilding carbon forestry at scale. This investment risk can be reduced by the government carrying some of this risk through one or other form of underwriting. One example would include underwriting the carbon price benchmarked to a price point annually that will enable private investment to crowd into this sector with the scale of money needed in order to transform an entire region."

[Ekos]

2.4 Local government

The local government submitters were: BOPRC, LGNZ, Wairoa District Council, HBRC, and GDC.

Local government submissions were generally thorough and substantive. Their submissions generally focused heavily on the impacts that they saw in their region, the policy and legislative framework that they work within, and land management and planning going forward. The recommendations from key local government submitters provide the most valuable insight into the distinct aspects of their submissions. Therefore, these have been provided in full in **Appendix B: Recommendations from local government submitters.**



3 Discussion

3.1 Impacts and experiences

This section provides an overview of submissions received in response to the question, "Tell us about your experience during Cyclones Hale and Gabrielle? What effects have you experienced?"

3.1.1 Personal and well-being related impacts

Most local submitters noted the detrimental effects of Cyclone Gabrielle on their home and land, including severe flooding, limited access to water, and the loss of power and phone signal for multiple days. Submitters spoke to the frustration, sadness, and anger in the community due to these effects. There has been, and still is, a significant amount of clean-up needed in the area due to the severe flooding. Submitters spoke of the physical and emotional toll this clean-up has taken on them and their communities, with many being exhausted and still trying to help family and friends where needed.

Most local submitters commented on the harmful mental health and wellbeing impacts the cyclones has had on them and their community. Increased levels of anxiety and depression were mentioned by many local submitters, and by submitters with whānau and loved ones in the affected areas. Many local submitters noted their community was feeling tired and emotionally depleted due to prolonged isolation. One local resident submitter stated, "We are expected to continue to being [sic] resilient, and strong and support each other, without meaningful change. We are tired. We deserve better. This is a human rights and te tiriti o waitangi issue".

"We remain traumatised by the suddenness and ferocity of the flood; we have difficulty sleeping during heavy rain".

[Kiwi Organics Ltd]

Many local submitters commented on the fear and paranoia they are grappling with after Cyclone Gabrielle. Some submitters noted that they are constantly checking their food and petrol supplies to be sure they will be equipped for future weather events.

Many local submitters noted feeling overwhelmed and stressed. In many cases this was caused by the economic impacts of the storm, such as the loss of

work, financial losses, farming crop losses, and the uncertainty of future employment opportunities.

Some local submitters mentioned the physical health impacts following the cyclones, especially the harm caused from being cut-off from medical services due to the impacts on infrastructure. A few local submitters discussed health issues that worsened from the cyclones' impact, including eczema from the lowered water quality and increased asthma from dried silt. One local submitter noted after their whānau was evacuated, many became sick due to living in overcrowded and substandard housing.



Some local submitters discussed the negative social impacts on children from either missing school or having to attend a different school due to the impacts of the cyclones on infrastructure. It was noted that these times were especially challenging and stressful for young children and their parents.

Many Māori submitters described the impacts on taonga such as rivers, kaimoana, pā, and the knock-on impacts this has on the community.

Most Māori submitters spoke to the harmful cultural and spiritual impacts caused from the destruction and harm to waitai and wai māori. One Māori submitter stated, *"The wellbeing of whenua & waterways, directly links to the well-being of the people".* There was a feeling of grief and loss shared by many Māori submitters due to the devastation of waterways and beaches during the storm.

Most Māori submitters mentioned the importance of the connection to Te Taiao for the health and wellbeing of them and their communities, and the negative impacts the cyclones have had on this connection.

Some Māori submitters spoke to instances where the storm eroded land revealing old urupā and the hurt this caused. One Māori submitter noted, "Our natural heritage [sic] was destroyed overnight. Our mana has been made vulnerable overnight. Our historical places, cemeteries, homesteads, "Our relationship with Te Taiao, each other, and ourselves is being irreparably damaged".

[Local resident, Gisborne/Te Tairāwhiti, Māori]

generations of assets lost overnight". [Local resident, Gisborne/Te Tairāwhiti]

3.1.2 Infrastructure impacts

Most submitters commented on the destruction and damage caused to major roads, bridges and power lines. It was repeatedly noted that this damage was exacerbated by silt and woody debris in the floodwaters. Many submitters noted that due to the loss of infrastructure, communities were left isolated and blocked from essential transport routes. Local submitters emphasised the importance of these roads for remote communities, noting they are vital for their health and wellbeing. One local resident submitter stated, "*Our access to food became non-functional overnight*".

Some submitters mentioned the size of culverts on roads and bridges, and their inability to cope with the rain during Cyclone Gabrielle and in the future.

Most local farmers commented on the impacts to their farming businesses, including the loss of fences and buildings. These submitters also noted the significant damage to their land, roads, and water systems, with many facing a significant amount of clean up still. One local farmer noted, *"These impacts are far reaching and will have long term negative impact to both farming businesses and community/family cohesion"*.

Many local submitters noted that their access to power, water supply, and telecommunication services were disrupted, in some cases, for weeks. This caused the affected communities to become severely isolated from the rest of the country, with many unable to contact family and friends.

3.1.3 Environmental impacts

Many submitters mentioned the severe damage to beaches and waterways, which have been covered in forestry slash and woody debris. They noted many beaches were now too dangerous for communities to access for walking, surfing, or swimming.

Some submitters mentioned the ongoing erosion of riverbanks due to '*log waves*'. This erosion has caused further trees to fall into waterways, worsening the damage already caused by Cyclone Gabrielle.

Many local submitters described the negative impacts of sediment and slash on the habitats of native aquatic species, including eels, rock lobster, pāua and kina. "Excess sediment is a pollutant in aquatic ecosystems because there are multiple implications of increasing sediment loads to the health and functioning of our freshwater and marine environments. In the marine environment, for example, sediment smothers shellfish, reduces light which reduces seaweed growth which has knock-on effects up the food web, makes it hard for birds and visual predators to hunt and reduce oxygenation, and can lead to toxic algal blooms (Green et al., 2021)."

[Mana Taiao Tairāwhiti]

"Environmental damage causes loss of cultural values such as access to natural resources, including traditional food gathering, fibre for traditional weaving and wood for carving, and Rongoa Māori medicinal plant resources and practices".

[Tane's Tree Trust]

It was noted by some submitters that due to the amount of damage caused by Cyclone Gabrielle, the impacts on aquatic life were not yet fully understood or recognised.

Damage to kaimoana gardens from slash and silt created a deep concern and danger for many local Māori submitters who access these places for kaimoana. It was noted that many local kaimoana areas were now bare and covered in silt.

3.1.4 Economic impacts

Most forestry industry submitters noted there were significant crop (i.e., tree crops) losses due to the storm.

Many local submitters indicated that the cyclones had resulted in substantial economic losses to local farms, orchards, commercial fisheries, and other businesses in the area. Local farmers noted that entire crops were contaminated with flood water and unable to be harvested. Local fisheries noted the environmental impacts to their harvested species and their habitats along with operational impacts.



Some submitters noted these economic impacts will continue to affect business owners and workers as the storm's impact continues to put a strain on the region. Many local submitters also highlighted that the cost of clean-up for many landowners is not feasible.

"Clean up is mind-bogglingly expensive – one grower estimated that he spent \$12,000-\$15,000 on diggers and labour to move silt just in his first day after the cyclone passed. The Tairāwhiti Horticulture Cyclone Recovery Group estimates costs of \$30,000 -\$40,000 per hectare for deep silt removal, plus tens of thousands more to rebuild and replant. For those who lost fruit trees, it may take many years to get production up and running again between remediating the soil, buying new trees, and waiting for them to reach maturity."

[Horticulture New Zealand]

Local submitters described negative impacts to the tourism industry as a result of the forestry waste on beaches, particularly in Tolaga Bay. Submitters commented that tourists were not travelling to the region due to debris and the area is feeling the economic impact of a lack of tourism.

Some local submitters noted their land and property no longer had the market value that it once did, if any.

Some local submitters noted that employment opportunities in the affected areas were low prior to Cyclone Gabrielle and will have decreased further since the storm. It was noted that many people depend on traditional food harvesting practices to supplement lower wages in the area, however these food sources have been heavily affected or destroyed by silt and slash.

A few submitters noted there are already limitations on insurance coverage leaving many rural clients underinsured or uninsured from cyclone damage. Insurance industry submitters noted climate change will have a major impact and cost that will require planning, as insurance companies will not be able to cover these damages forever. FMG Insurance noted the insurance industry has valuable information to assist in measuring the severity of destruction caused by floods and other natural disasters.

3.1.5 Historical events

Some local submitters noted that clean-up from previous storms was never completed, and Cyclone Gabrielle compounded the existing damage and mess. It was noted that some beaches and waterways have been filled with slash and woody debris for many years. Submitters commented on the harmful impacts of the continuous clean up, especially the frustration and tiredness of their local communities. Submitters commented that the areas "It's a pity that when an area of plantation is logged that a riparian zone isn't retained. Cyclone Bola in the 1980's and the steady build-up of logs on the beaches, months and months prior, should have been a wakeup call to the decision makers."

[Local resident, rural landowner]



affected by Cyclone Gabrielle have been particularly vulnerable to its impacts due to the history of the land and colonisation.

3.2 Causes

3.2.1 Land use over time/historical context

Many submitters gave a historical overview of the different policies, incentives, practices, and beliefs that influenced land use in the affected regions over time, and the consequent impacts of these during past storms and cyclones leading to Cyclone Gabrielle.

Many submitters noted that Tairāwhiti has always been susceptible to erosion due to its topography and geology and considered that this has been exacerbated by land use changes over time. Comments about erosion and resultant silt and sediment are discussed in more detail below.

Forestry practices and (local and national) government legislation and policy were identified as leading contributors to erosion and the historical impacts of weather events, with acknowledgments that farming and insufficient infrastructure are contributors as well. "[s]ince the 1880s land use by humans in the catchment has accelerated the natural levels of erosion to something like five times the rate in the 20,000 years prior."

[Mana Taiao Tairāwhiti]

Submitters mentioned incentivised deforestation of native forests throughout the regions' history, especially by European settlers, to build housing, create infrastructure, and clear land for pastoral farming. This left the land bare and increased the chances of erosion. Submitters also mentioned afforestation schemes that involved mass plantings of *pinus radiata* and targeted planting of willow and poplar on erosion-prone hillsides and gullies. This approach did work to arrest the accelerated rate of erosion but led to a monoculture of large unretired areas being clear felled at the same time, to adhere to forestry timeframes, leaving the land at risk and filled with slash and woody debris.

Submitters referred to the East Coast Forestry Project and the ETS as examples of government policy that have had unintended negative consequences.

Although submitters focused on different historical factors, many submitters mentioned Cyclone Bola as a pivotal moment in the region's history for addressing these factors, and the action and/or inaction taken at the time as a result. Some submitters mentioned that following Cyclone Bola, and the subsequent government inquiry, it was the perfect time to switch towards a more sustainable form of land use and land management in the region. Instead, these submitters noted, the government encouraged the pine plantations, and these contributing factors still remain.



"The underlying issues contributing to the extent of cyclone damage in the Tairawhiti and Wairoa region are poor land-use decisions and the strong dichotomies in land management in New Zealand between conservation and production, and indigenous and exotic ecosystems.

This is particularly evident in forestry, and it limits the realisation of the wider value of forests (native and exotic) in our rural working landscapes and urban areas, and their importance for land stabilisation, biodiversity, climate adaptation, water quality, and human well-being.

There is a strong dichotomy between clear-fell systems on one side, and retirement to native forest on the other – with nothing much in between, other than a very small minority of brave practitioners of continuous cover forestry (CCF) systems. This polarised dichotomy has largely been driven by short-sighted, black-and-white policy initiatives from previous New Zealand governments. It has stymied diversification, and therefore climate resilience, in forestry land use in New Zealand."

[Tane's Tree Trust]

Some submitters commented that concerns for contributing factors to the severe impacts of weather events have been raised time and time again by local communities, but the government has not listened or has not involved them in any decision-making process. For instance, one submitter stated:

"Given that these concerns were being raised over twenty years ago, long before the worst of the environmental damage began to become apparent, it is evident that there was, and remains, a skepticism [sic] expressed by policy makers towards the validity of local concerns, and therefore the impetus to respond to them is often absent...

There remains a reluctance amongst decision makers to look back and properly understand the implications of how decisions of the past were made, and what can be learned as a result. This failure to learn from previous mistakes (or even to bother reviewing them at all) likely destines us to repeat them, at great human, environmental and economic cost. This failure to learn from previous mistakes (or even to bother reviewing them at all) likely destines us to repeat them, at great human, environmental and economic cost."

[Te Tairāwhiti local resident, rural landowner]

3.2.2 Forestry, slash, and woody debris

Many submitters were of the view that *pinus radiata* plantation forestry has been a major contributor to storm damage through the deforestation of native trees, and the mobilisation of woody debris and silt/sediment. Submitters were concerned both with post-harvest woody



debris entering waterways and with slope failures leading to large sections of maturing or mature forest being mobilised.

Submitters considered that certain forestry practices, such as clear felling or cable logging, exacerbate the issue of woody debris mobilisation; they leave large volumes of material on steep, exposed slopes. Some submitters noted that the forestry industry is economically driven, instead of environmentally driven, and is poorly managed as a result.

"... [p]inus radiata was introduced into Aotearoa to fast-track the timber industry. The shallow-rooted and fast-growing trees deprive creeks of their water, are highly flammable, and are a rather short-lived species of exotic trees. Pitch pine canker and other diseases could easily rip through cloned pines and kill them, destabilising the land once more on a large scale."

[Forest & Bird]

Some submitters were concerned that landowners have been, and are, incentivised to convert erosion prone land to *pinus radiata* plantations, particularly by the ETS, but also as an erosion control mechanism following Cyclone Bola. While recognising that converting pasture to *pinus radiata* plantations does decrease the land's susceptibility to soil mobilisation, submitters considered that the benefits of *pinus radiata* in this respect are often overstated. They were concerned that converting to *pinus radiata* plantations would increase the volume of woody debris mobilised during rain events while offering little erosion protection.

Some submitters commented that *pinus radiata* root systems are shallow and unsuited to the soil in the region, making them easier to mobilise in strong rainfall or wind.

Submitters also noted that the harvest of the *pinus radiata* reactivates erosion as it leaves the land bare and vulnerable for a period of around six years. Further, due to slope failures, mature or maturing trees can be mobilised, which some submitters considered to be a greater

contributor to the total amount of woody debris than post-harvest material.

Some submitters considered that *pinus radiata* plantations, and their consequent slash, impose high costs on the local communities through the costs of damages, while offering a relatively small economic benefit through employment. Many plantations are owned by foreign companies, and little processing occurs in the region, so locals reap limited, short-term, benefits from the industry. Forestry ownership is discussed in more detail below.

A few submitters mentioned forestry skid sites as a source of potentially mobilised woody debris, stating that poorly constructed skid sites, or those without proper water controls, are prone to partial or "With the benefit of hindsight, it is clear that some areas should not have been established in commercial exotic forestry. Consequently, some areas that were planted should not be harvested and some areas that have been harvested should not be reestablished in commercial exotic forestry."

[Aratu Forests]

complete collapse. These skid sites are also where the 'birds nests' of slash are collected, which should instead be moved to stable ground or removed completely to avoid mobilisation.



Scion commented that:

"...not all woody debris is harvesting slash, or post-harvest debris, and not all woody debris is the result of current exotic forest management. Previous assessments of post-cyclone woody debris have encountered material that appears to have been present in catchments for a number of years, and from tree species – exotic as well as indigenous – that are not from managed plantation forests."

[Scion]

Generally, submitters were of the view that woody debris is the primary cause of damage to infrastructure following heavy rainfall events, as it cannot flow through obstacles such as fences or bridges, unlike silt and sediment.

"Forestry debris (slash) continues to add a more distressing element given the sheer volume of mobilised material in rain events which are common to the region, and for which the region has been known for as long as rainfall records exist. The damage from debris flows, and their ability through sheer force to strip riversides of vegetation, dam channels and create 'beaver dams' is increasingly ensuring costs for activities within forests, become a burden for those beyond the forests. These externalities remain absent from any accounting mechanism for ecosystem services and are largely discounted as 'legacy issues' for which no one is held directly accountable provided that resource management conditions have been met."

[Te Tairāwhiti local resident, rural landowner]

Further, submitters considered that woody debris accumulates in catchments and is often remobilised following heavy rain. Mana Taiao Tairāwhiti said:

"The impacts of forestry and slash in Tairawhiti must be addressed to protect social, economic, and coastal infrastructure. Although similar events occurred prior to forestry, worsening storms and mismanagement during harvesting have significantly increased the impact of these problems."

[Mana Taiao Tairāwhiti]



3.2.3 Silt and sediment

Many submitters commented that the Gisborne-East Coast region is naturally erosion prone and were concerned that human activities have increased the susceptibility of the land to erosion during heavy rainfall, particularly cyclonic storms. Manaaki Whenua Landcare Research commented that sediment records demonstrate that before human arrival, storms caused relatively minimal changes to soil stability. Erosion levels increased slightly after initial human arrival in the 13th century, as much of the lowland forest was cleared by fire and replaced with bracken and shrublands. However, following European arrival, much of the remaining forests were cleared, and the shrublands converted to pasture. Manaaki Whenua Landcare Research stated that lake sediment records document 'unprecedented erosion' following these conversions.

Many submitters were most concerned with steep, unstable slopes being used for pastoral farming, as pasture provides very little support for the soil. Generally, submitters saw pastoral farming on erosion prone land as the primary contributor to the levels of silt and sediment in waterways. However, submitters also recognised that soil mobilisation remains a risk even where slopes are forested, whether pinus radiata plantations or native forest. Submitters were of the view that, for various reasons, pinus radiata plantations provide relatively little support for the soil, even when mature. By contrast, submitters considered that native forest significantly reduces the susceptibility of erosion prone slopes to soil mobilisation, particularly landslides.

"Using post-Gabrielle aerial imagery to compare different land-uses within the same catchment shows clear differences between areas of forestry, pasture, and native forest, with significant damage sustained in some areas of forestry and pasture, while nearby land in native forest/scrub is relatively unscathed. We imagine that more detailed analysis of this imagery will form part of the inquiry panel's work."

[QEII Trust]

Submitters generally did not consider that pastoral farming or *pinus radiata* plantations are always

inappropriate, rather, submitters considered that land should only be used for these activities after careful consideration of whether the geology of the proposed site will introduce unmanageable risk of silt and sediment mobilisation.

A few submitters were of the view that the damage to coastal marine areas and fisheries from silt and sediment is not sufficiently considered or protected against in the relevant rules and regulations.

A few submitters were particularly concerned that kānuka forest on steep slopes in the region is being cleared to provide additional pasture. These submitters were of the view that these slopes inevitably fail once cleared, causing large amounts of silt and sediment to enter waterways.

3.2.4 Infrastructure

Generally, submitters said that there was a lack of sufficient investment in and maintenance of the region's infrastructure, such as stormwater systems, roads and bridges. They considered the infrastructure was not fit-for-purpose in today's climate, which led to communities being isolated, communications cut, and restricted access to drinking water and electricity, as seen during Cyclone Gabrielle.

Many submitters commented on the lack of management and general disregard for the region's roads, especially the rural roads. Some submitters highlighted that the roads are subjected to continual traffic from logging trucks, wearing them down and making them more susceptible to landslides in heavy rainfall, and possibly cutting off whole communities. These submitters noted that these roads are no longer resealed on an annual basis. One submitter was particularly concerned about the impact of under-investment in infrastructure on small Māori communities.

"Significant and long-term underinvestment in regional infrastructure has exacerbated the impacts of Cyclone Gabrielle. In some cases, bridges and civil infrastructure that failed had been in service for 100+ years. These assets were designed based on the standard at that time. Design standards must be set more appropriately to account for these extreme weather events and the added intensity that comes with them due to climate change."

[Pan Pac Products Ltd]

Other submitters raised concerns about the lack of forward thinking or planning in relation to road repairs. They commented that constantly cutting into hillsides to repair damage causes further problems for erosion, when more sustainable approaches could be implemented to ensure the roads are resilient and fit-for-purpose.

"The lack of maintenance in our roading network has had a huge impact on our lives. How many people in this country have to leave their homes every time it rains a lil bit too hard [sic]! Our culverts aren't up to task, our bridges can't handle what's being thrown at them, and every slip prone road gets the bare minimum done."

[Te Tairāwhiti local resident, Māori, rural landowner]

A few submitters commented that much of the region's infrastructure, such as roads, bridges, and stop banks, interrupt or affect natural processes, which in some cases means that infrastructure can increase the risk and intensity of harm following significant weather events.



3.2.5 Waterway management

Some submitters were concerned that, due to the very high-water level of rivers and streams, riparian planting was mobilised and contributed to the mass of woody debris and vegetation in waterways. Submitters considered that a large amount of riparian planting was not appropriately managed, for example where large willow or poplar trees bordering waterways were not regularly pruned or were planted too close to the waterways.

"In small Māori communities on the East-Coast, it seems as if these communities are not just isolated, but strategically neglected by design. It may even be argued that during the disaster when communications were isolated that there was little change for the people of Ngai Tamanuhiri. Phone reception and coverage are sketchy at best, and at worst non-existent."

[Pākōwhai No2 Incorporation]

Some submitters were also concerned that key waterway infrastructure, such as culverts, stopbanks, and bridges, were not designed and maintained appropriately to enable them to function properly during periods of very high water levels, and where large woody debris volumes of and been mobilised. vegetation had Stopbanks were overwhelmed, and bridges and culverts were clogged with woody debris, exacerbating damage to infrastructure.

Submitters were also concerned that many of the region's swamps and wetlands have been drained to create arable land. Some submitters were of the view that, historically, swamps and "This is a problem that is not exclusive to Tairāwhiti, where rivers go over or through stopbanks to reclaim their previous beds and natural patterns. International studies show that allowing a river to self-adjust is cheaper and more effective than active interventions that force a river into a particular place... Essentially, the entire natural 'stormwater' system – forests, wetlands, and rivers – has had its capacity severely reduced. We must increase the ability of that natural system to cope with extreme weather. That means we must address all parts of the problem – native forests, wetlands, and river corridors. We cannot only focus on forestry slash."

[Forest & Bird]

wetlands, along with forests, provided significant flood-protection through absorbing excess surface water. They stated that the lack of swamps and wetlands contributed to the extensive flooding in low-lying areas and that reliance on stop banks will not prevent flooding in the future.



Some submitters supported the above view, and further highlighted the changes waterway management can make to the flow of the water, its contribution to erosion, and subsequent impacts.

"Changing or straightening the course of rivers, and lakes and removing wetlands can lead to inundation events when water flows are altered from land use changes such as deforestation, urbanisation, or building dams to prevent flooding can create impacts that change the volume and velocity of water in the river and lakes. This can increase the erosion of riverbanks and impact taonga kai and any dependent species.

The enduring colonising logic that wetlands are only valued to the extent that they can be used as farmland to produce economic returns or be used as dumps remains constant. Councils are reluctant to regulate the use of land, even when the extent of damage to the whenua generated by land use intensification is beyond doubt."

[Pākōwhai No2 Incorporation]

Generally, submitters considered that waterways are not actively managed through dredging and gravel quarrying to ensure that they are of sufficient depth to mitigate the risk of waterways breaching their banks.

3.2.6 Policy and legislative framework

While some submitters attributed responsibility for harm to only one policy or legislative instrument, most submitters were of the view that the cumulative effect of several policies and regulations is an incentivisation of inappropriate land use, which in turn leads to a high level of harm following significant weather events.

"...the New Zealand Emission Trading Scheme (NZ ETS), carbon markets, National Environment Standards for Plantation Forestry (NES-PF), foreign investment, and increased regulation within farming are currently encouraging and/or enticing sheep and beef farmers to either sell or convert to plantation forestry of exotic species such as Pinus radiata."

[Te Wairoa local resident]

A few submitters who identified as being affiliated with iwi and hapū were concerned that policy and legislation is developed outside the region by people without a connection to the whenua or environment. These submitters were of the view that this contributed to deficiencies in the policy and legislation. Further, these submitters, along with other submitters, often considered that the policy and legislative framework does not take a sufficiently holistic approach to the management of land use and associated risks.



Resource Management Act 1991 (RMA)

Many submitters discussed instruments made under the RMA, such as the National Environmental Standard for Plantation Forestry (NES-PF) and the National Policy Statement for Freshwater Management (NPS-FM). Submissions on these instruments are discussed in more detail below.

Some submitters commented on the RMA itself. These submitters generally considered that the RMA appears to be fit-for-purpose, but councils are under resourced to carry out their obligations under the RMA. However, a few submitters were of the view that the RMA is not conducive to large-scale industrial development and is preventing the development of sawmills, pulp mills, or post-harvest woody debris processing facilities in Tairāwhiti.

One submitter was concerned that the penalties available under the RMA are inadequate to deter large commercial operators from carrying out harmful activities.

National Environmental Standard for Plantation Forestry (NES-PF)

Many submitters considered that the large volume of post-harvest woody debris that was mobilised demonstrates that the NES-PF is not effective at managing the adverse effects associated with forestry. Many submitters were of the view that this is because the NES-PF permits forestry activities under conditions which, when breached, risk significant environmental effects. Further, many submitters considered that forestry companies' compliance with conditions are not adequately monitored or enforced. Many considered the NES-PF to be a highly permissive regulatory regime and viewed this as undesirable. In contrast, forestry industry submitters generally considered that the NES-PF will be effective, but as plantation forestry generally has a 25–30-year production cycle and many blocks of land were planted prior to the NES-PF coming into force, it will take time for the NES-PF's benefits to be fully realised.

A few submitters were of the view that the NES-PF is highly permissive because it was developed to ensure commercially favourable regulatory streamlining, rather than environmental protection. These submitters believed that pressure from forestry industry stakeholders led to nationally consistent regulation of plantation forestry, which they considered to be inappropriate given the wide variance in geography and geology across the country. A few submitters noted that the introduction of the NES-PF meant that councils lost autonomy to manage the environmental effects of forestry activities. For instance, one submitter noted that "[u]nder Regulation 66, a Harvest Plan is required for all erosion susceptibility classification zones and for Red or Orange zones, an Earthworks Plan must be prepared. Under Regulation 66 (4), these plans must be provided to the relevant council on written request. However, it is not possible under the regulations for a Council to reject or request any changes to such plans". This submitter considered this to be 'illogical'.

A few, primarily forestry industry, submitters were of the view that the NES-PF is generally adequate, but the unique geography and geology of Tairāwhiti introduces additional risks that cannot be appropriately managed under the NES-PF.

A few submitters were concerned that the effect of climate change on New Zealand's weather was not sufficiently considered during the development of the NES-PF. For instance, one



submitter was concerned that the NES-PF is written to account for a five percent Annual Exceedance Probability (AEP) event while the frequency and intensity of rainfall are likely to increase. This submitter considered that this means that the NES-PF is 'unlikely to remain fit-for-purpose'. Further, a few submitters considered that the Erosion Susceptibility Classification (ESC) used under the NES-PF has limitations that contribute to inaccurate erosion risk classification zones. Many submitters were particularly concerned with 'inadequate' set-back provisions in the NES-PF.

A few submitters were concerned that Carbon Forestry is not covered by the NES-PF, which, alongside the ETS, incentivises landowners to convert inappropriate land to *pinus radiata* plantations.

One submitter noted that the NES-PF "*does not consider impacts of forestry activities on marine fisheries*", only on freshwater fisheries. This submitter considered that the NES-PF does not adequately avoid, remedy, or mitigate adverse effects arising from high sediment loadings and slash from inland forestry activities.

National Policy Statement for Freshwater Management (NPS-FM)

A few submitters commented on the NPS-FM, as "many of the impacts of forestry activities

(both negative and positive) are felt in the freshwater environment". These submitters considered freshwater management to be influential in land use patterns. Horticulture New Zealand considered that an integrated management approach to freshwater requires councils to consider the impact of land use on a whole-ofcatchment basis, which, in the context of Tairāwhiti, would include consideration of the downstream impacts of *pinus radiata* plantation forestry.

Emissions Trading Scheme

Many submitters were concerned that the ETS incentivises land-use conversion to *pinus radiata* plantations, which are planted and harvested in 30-year cycles to maximise the profits from carbon trading and log production. A few submitters commented that it can be costly not to replant *pinus radiata* after harvest as not replanting will require a landowner to repay carbon credits. Submitters were of the view that the ETS does not incentivise conversion of land to indigenous forests. A few submitters commented that, because buying forestry units is cheaper for companies than many emission reduction options, land use conversion rather than emissions reduction is currently the principal outcome of the ETS.

"Regional Councils are not taking an integrated management approach to setting visions, values, outcomes and limits under the NPS-FM"

[Horticulture New Zealand]

"[c]urrent policy settings and market drivers are overwhelmingly encouraging land-use conversion to exotic forestry"

[QEII National Trust]

"[t]he ETS is a system based around emissions and removals each year which naturally favours rapidlygrowing species".

[Forest Owners Association]


"[the] ETS does not allow for prior to 1990 native forest to earn credits which is damaging to those farmers who were proactive and protected early"

[Rural landowner]

Further, the Queen Elizabeth II (QEII) National Trust noted that exotic forests provide less climate resilience than native biodiversity. A few submitters raised the issue with the ETS for whānau, hapu and iwi who were not granted carbon credits for their pre-1990 indigenous forests. It was also raised that many Māori collectives have inherited liability for carbon credits without receiving any of the benefits that were extracted by the groups that planted the trees, as many exotic forests on Māori land were held by leaseholders.

Another limitation raised was forestry ownership for Māori. A few submitters noted that a significant portion of collectively owned Māori land is 'locked' into production forestry. Given the challenges that complex ownership structures and processes pose, submitters considered that it is more difficult to convert the use of collectively owned Māori land than land held in general title.

A few submitters commented that the ETS incentivises land-use conversion to carbon forestry, which is not covered by the NES-PF. These submitters were often concerned that carbon forestry is profitable for the owners of forests in the short term, but financially and environmentally unsuitable in the medium to long term, as emission sequestration is and should be only a stop-gap measure while emission reduction technologies and processes are developed.

Some submitters were concerned that pastoral farming was excluded from the ETS, meaning that pastoral farmers have not been incentivised to plant steep erodible lands, nor undertake riparian planting along waterways.

One submitter was concerned that:

"[t]hrough the ETS the wairua value of Tangaroa, Tāne Māhuta, Rongomaraeroa and Haumia-tiketike have been distorted into quantifiable articles that can be traded, weighed, measured and exploited for profit at the expense of the countless living species that uphold the integrity of the biosphere, and with little substantive input from Māori."

[Pākōwhai No2 Incorporation]

Overall, submitters generally considered that *"[t]he current ETS policy settings are a major roadblock to changing land usage in the region"*, with one submitter stating that *"the narrow framing of the ETS has created a financial trap for forest owners"*.

Compliance and enforcement

Many submitters were concerned that there is little proactive monitoring of forestry companies' activities for compliance with relevant rules or regulations, both in the region and nationwide. Submitters were of the view that that councils do not have sufficient staff to proactively monitor compliance and are not able to adequately recover costs incurred in monitoring and enforcing compliance. Some submitters considered that landowners deliberately take advantage of the lack of monitoring and enforcement by undertaking activities that landowners know to be unlawful on the assumption that relevant rules and regulations will not be enforced.



"...nearly all non-compliance relates to earthworks and sediment issues very little non-compliance and relates to poor 'slash' management. The non-compliance relates predominantly to either inadequate installation or maintenance of erosion sediment and control measures".

[HBRC]

The Hawkes Bay Regional Council (HBRC) pointed out that, until the recent amendment to the RMA under the Resource Legislation Amendment Act 2017, councils have not had the ability to charge for monitoring permitted activities. Therefore, councils in Hawke's Bay have

usually monitored compliance with permitted activity rules reactively, only when they are notified that an activity is not complying with permitted rules.

A Crown prosecutor who prosecuted a number of forestry companies following the 2018 storm (Cyclone Gita) stated that "[t]he key forests that failed in 2018 were not rigorously inspected for compliance with their consents at either the earlier infrastructure building phase or the later harvesting, or post harvesting phase". They considered that the Gisborne District Council (GDC), like most regional councils, is not adequately funded to carry out their functions under the RMA.

Submitters were of the view that when enforcement action is taken against forestry companies the penalties are relatively small compared to the profits of the companies. Submitters considered that small penalties have not, and will not, deter forestry companies from non-compliance. "I am of the opinion that harvest and road construction contractors in the Gisborne District have limited knowledge of logging and the environment, limited application of forest industry environmental codes of practice, the NES-PF or compliance with resource consents especially when compared to the level of compliance in other regions, districts of the country".

[Former lead forestry investigator for the GDC]

Offshore ownership of forestry companies

Many submitters were concerned that foreign companies have been, and are, buying pastoral land and converting the land to *pinus radiata* plantations. Submitters said that foreign companies can outbid local farmers and companies for land and have little regard for the impacts of *pinus radiata* plantations on local communities. Further, submitters considered that foreign landowners can unjustly externalise the costs associated with their operations, while



transferring profits offshore. Submitters were also of the view that communities are unable to effectively oppose land sales to foreign companies. For example, one submitter said:

"The inability for local community resistance to halt the sale of over 6000 ha of East Coast hill country (Huiarua and Matanui stations) to foreign interests seeking to plant the land, illustrates just how little influence communities have, even when the likely implications of further mass planting in already choked catchments appear very clear."

[Te Tairāwhiti local resident, rural landowner]

Submitters were concerned that foreign forestry companies invest significant amounts of money to ensure that the regulatory environment serves their interests, rather than the interests of local communities.

3.2.7 Local government

Some submitters were concerned that the GDC had failed to adequately set, monitor, and enforce consent conditions in relation to planting and harvesting forestry. Submitters considered that this was a result of the GDC being under resourced to carry out its responsibilities. A few submitters were concerned that there is high turnover amongst the GDC's compliance officers, and that the compliance officers generally have little forestry industry experience.

Submitters considered that councils' failure to carry out their monitoring and enforcement functions contributed to the large amounts of post-harvest woody debris in waterways. Many submitters were concerned that councils do not appear to be held accountable for their failures to monitor and enforce compliance.

A few submitters were concerned that the GDC had not granted forestry companies consent to construct slash catching devices. These submitters considered they would have prevented large volumes of post-harvest woody debris from entering waterways.

One submitter considered that councils are not the appropriate entities to regulate forestry in the region, as this submitter considered that the council staff faced pressure from both the forestry industry and elected local body politicians to take an overly permissive approach to setting, monitoring, and enforcing consent conditions for forestry.

Some submitters were concerned that councils allowed housing to be built on floodplains, which meant that people and their homes were, predictably, exposed to flooding. However, a few submitters were of the view that councils had attempted to stop residential developments being built on floodplains but had their decisions to disallow development consistently and successfully challenged by developers such as Kāinga Ora.

Overall, submitters considered that councils, including the GDC, had failed to ensure appropriate land use in the region.



3.3 Solutions

3.3.1 Vision for future land use

This section covers analysis of submitter's responses to the question, "What is your vision for the future of land use in the region?"

Connection with whenua

Of the submitters that identified as Māori, most mentioned that their vision for future land use included maintaining (or, in some cases, redeveloping) connection with the whenua. The importance of allowing regeneration of the whenua in the aftermath of various significant weather events was also emphasised.

In general, there was a sentiment that all solutions should be grounded in te ao Māori and that future policy settings need to consider the holistic nature of the interconnectedness between te taiao and tangata whenua. Many submitters considered that tangata whenua needed to be involved going forward, as the original kaitiaki of the whenua. Some Māori groups commented in general about the westernised and monocultural land use. Submitters said that the regulatory system has negatively impacted Māori in the affected regions before the severe weather events and resulted in more significant impact as a result.

Many submitters said that local communities needed to be involved in the development and implementation of solutions in order for them to be effective. Many submitters suggested that this meant local whānau, hapū, and iwi should be heavily involved in the solutions.

Better land management

Some submitters noted that the Te Tairāwhiti, Turanganui-a-Kiwa, and Te Wairoa regions do not suit a 'one size fits all' forestry solution given the amount of highly erosion-susceptible land and steep hillsides. Submitters did often acknowledge that forestry is critical to the region from a social and economic perspective but generally suggested that the sustainability of the land use is improved.

Many submitters stated that their vision was for land use to match the land suitability. Many submitters expressed concern about the extensive planting of *pinus radiata* in the region and submitted that monocultural regimes should be avoided and the focus should be on varied land use. Many submitters noted that there is an overreliance on the *pinus radiata* species. Some submitters felt that *pinus radiata* should not be planted on land that is prone to erosion.

A few submitters, on the other hand, commented on the value of *pinus radiata* and the potential economic returns. One submitter noted that *pinus radiata* is an extremely versatile wood product and grows well in the temperate climate in New Zealand.

There were submissions suggesting that alternative wood crops be planted, such as poplars or willow for timber. Submitters also suggested that a wider variety of tree species should be planted, as well as diversifying crops generally, to build topsoil where the roots add structure to the soil.



The HBRC provided several examples of facilitating non-regulatory sustainable land management. For example, they have committed \$30 million over 10 years to their Erosion Control Scheme, which funds erosion control works and erosion control plans for farmland and landowners.

Several different exotic plantation forestry species were suggested by submitters, including poplars, willow, coastal redwood (*sequoia sempervirens*), and durable eucalyptus (*Eucalyptus spp*) for alternate wood crops or diversification of wood crops and tagasaste (*Leguminosae*) for vegetation of steep and erodible land.

Farming

A few submitters considered pastoral farming as a more productive use of land as it provides more sustainable and consistent employment, although "regenerative" or "sustainable" pastoral farming practices were mentioned by these submitters. Other submitters felt that pastoral farming should be banned from erosion prone hillside. A few submitters expressed concern about the runoff from farmland.

Many submitters talked about a vision of more tree crops on farmland to increase productivity of otherwise unproductive land or ensuring better sustainability of the land. Submitters mentioned finding a balance between pastoral farming, horticulture, and forestry in the region. A few submitters also thought that forest farming should be part of the vision for the future and be utilised in the region.

Infrastructure

Some submitters emphasised the need to improve the resilience of infrastructure in the region, i.e., roads, bridges, and flood works. Some submitters mentioned that road maintenance needs to be improved in the area, particularly the rural road network, and a few other submitters felt that heavy logging trucks have a detrimental impact on current infrastructure.

Submitters from the forestry industry noted that storm events will increase in frequency and intensity, and the region needs to be better equipped to face these events.

Water controls were often mentioned by submitters, stating that in the future, culverts should more successfully divert water and minimise water coming onto landings and sediment traps would be installed.

3.3.2 What's needed to achieve this vision?

This section covers the analysis of the responses to the question, "what do we need to do to achieve this vision?".



Indigenous and mixed forests

Many submitters suggested that more native trees should be planted, and the region should have a greater focus on biodiversity. A few submitters talked about using "'mosaic-like' landscape patterns" or taking a "mosaic approach" with a mix of native and exotic tree crops. "Native planting to be the preferred and if any pinus radiatas are planted they must be strictly monitored at harvest."

[Te Tairāwhiti local resident, rural landowner]

This included submissions suggesting that exotic forests should be transitioned to permanent

indigenous forests. Some submitters suggested specifically that the steepest, most vulnerable hill country areas should be reverted permanently to indigenous forest. One submitter did note that permanent native forest restored on erodible soil would not completely mitigate the risk of woody debris being washed down in extreme weather events, it would make the risk and extent of damage lower than what has been caused from slash left from clear felling *pinus radiata* forest. Many native species were suggested, but totara, kānuka, and mānuka came up most frequently.

A few submitters suggested that all riparian zones should be planted with native trees to act as a buffer between *pinus radiata* forests and waterways. Submitters suggested that this could act as a natural slash trap.

Some submitters placed a particular emphasis on the importance of engaging with local Māori to ensure that the correct species are planted in the appropriate areas.

Some submitters said that a mix of exotic and native species should be planted in accordance with sustainable land use and management practices.

Some forestry companies, such as Roger Dickie Ltd, submitted that permanent indigenous forestry is not feasible due to the high costs of establishment and the slow rate of carbon sequestration.

Improve existing forestry practices

Many submitters provided suggestions to improve existing forestry practices and felt that improving forestry practices would mitigate some of the impacts that were felt after Cyclones Hale and Gabrielle from forestry slash in the region. One submitter felt that the forestry industry should be supported to develop their pre-harvest planning approaches to address onsite and offsite effects and preventative and recovery controls.

Clear felling

A few submitters called for an end (complete ban) to clear felling on erosion prone land. Small coupe harvesting has also been suggested as an alternative to the current practice of clear felling in New Zealand. This involves restricting the area of forest that can be clear felled at one time and harvest tree crops over longer rotations.

One submitter suggested learning from ethical forestry traditions in Europe, such as Plenterwald. This is a "mixed-age, mixed-species model forest with no beginning and no end



- that is, it emerged from natural forest and being sustainably harvested, is perpetual." In a similar vein, continuous cover forestry was mentioned by a few submitters as an alternative to clear felling practices.

Many submitters suggested that regulation needs to be used to address some of the issues, for example, some submitters suggested a ban on clear felling on highly erodible and steep land.

Logging technology

Some submitters suggested that low-impact felling equipment should be used in New Zealand, such as articulated wheeled machines, and low impact extraction equipment should also be used, such as full suspension extraction systems (such as cables).

Slash traps

Use of "slash traps" was suggested by some submitters, although other submitters noted limitations of slash traps and ongoing debate regarding their use. The submission from Roger Dickie Ltd felt that the requirements for consenting slash traps should be reduced to allow slash traps to be implemented more easily by forestry companies. Other submitters felt that slash catchers needed to be subject to rigorous engineering design and hydrological modelling to ensure that they can realistically cope with anticipated flood levels. It was also noted that existing slash catchers need to be regularly inspected and cleaned.

Detailed mapping of landscape

A few submitters mentioned that computer-based technology to undertake detailed mapping of landscapes could be utilised to undertake risk assessments and identify land that is of high risk of erosion and sediment loss. It was suggested that the risk assessment could correspond with the land use (e.g., very high-risk areas would be retired and reverted to permanent forest and clear felling could be undertaken without restriction on low-risk land). Some examples of this technology included: SedNet Landscape modelling and Land Use Capability (LUC) mapping. A few submitters did suggest that the LUC mapping needed to be done at a finer scale.

Alternative disposal methods for forestry waste

Many submitters expressed concerns about the amount of forestry waste that is currently created in the region. There were several solutions suggested for the waste products. Submitters suggested that the forestry industry could process woody biomass for various other products such as paper, jib, biochar, biofuel. It was suggested that there are a range of markets for these by-products that are not currently being utilised.

Biochar in particular, was mentioned by a number of submitters. Proposed methods of creating biochar included:

- using modified air curtain burners
- using the Cleaner Conservation burn techniques
- using flame cap kiln



- using large scale trench/pit (in combination with a burn technique) to process large volumes
- continuous pyrolysis systems (noting that this would require transportation, preprocessing, and major investment).

A few submitters did reference previous use of cutover burning in the region as a potential solution but recognised that this was previously unpopular with local communities and resulted in air quality issues.

Air New Zealand submitted that post-harvest forestry waste could be converted into sustainable aviation fuel. This could support decarbonising the airline industry as well as minimise the woody debris that could cause devastation in severe weather events.

Some submitters called for localised processing of woody biomass and argued that trees should not be harvested in areas without the local capacity to process. It was suggested that a local pulp mill or viable bioenergy market would support the minimisation of forestry waste. These submitters also suggested this could be another opportunity for the local economy. Submitters discussed the opportunity for local communities to use slash as firewood and emphasised that this is not a current option as the forests are closed off to the public once harvested.

One submitter did suggest that the RMA is an obstacle to large-scale industrial development that would facilitate the utilisation of woody biomass and that the Government may need to consider changes to the RMA to facilitate investment in processing facilities.

Other uses of biomass that was suggested by submitters included wood pellets, using biochar as a fertiliser, or mixing the charcoal in with stock feed.

Some submitters felt that the disposal of woody debris needs to be financially incentivised, or required by legislation, by the government to ensure that it is economically viable for slash to be removed by forestry companies.

Improved land management

As mentioned in the previous section, most submitters commented on their vision of land management for the future, including more diverse use of land and the planting of a range of crops. Some submitters stated that ongoing land management would be crucial to achieve the vision for the future. Many submitters emphasised that their vision of the future includes diversified land use.

Right tree in the right place

"Right tree in the right place" was raised by many submitters as key to the successful utilisation of trees. Submitters said that this requires careful planning and a strong understanding of local land and ecosystems in order to be successful. They mentioned that this applies across plantation forestry, pastoral farming, and in waterway management. The HBRC are now piloting a land management programme named "Land for Life" (formerly "Right Tree Right Place").



This was often discussed in conjunction with suggestions to use native tree crops for afforestation or finding a balance between exotic and native crops.

Riparian zones

Most submissions mentioned riparian zones. It was generally submitted that riparian zones for waterways should be planted out and a number of submitters felt that planting out riparian zones would be a positive solution to support the vision they see for the future. This was a key theme that featured throughout the submissions.

Some submitters went into detail about riparian management and how the design and application of riparian zones may be the key to successfully protecting waterways in future. Many submitters suggested different sizes of riparian zones that should be used. Submitters talked about riparian management being an effective way to stabilise stream banks, reduce e-coli, and improve ecosystem health. One submitter said,

"Riparian planting provides shade, lowers river temperatures, limits periphyton and macrophyte growth, regulates dissolved oxygen, filters sediment run-off, and provides adult insect habitat. Targeted erosion control and excluding stock from riverbanks also reduces bank erosion and prevents sediment from entering waterways, as well as reducing direct faecal contamination."

[HBRC]

It was acknowledged that planting of riparian zones would be a sizeable operation and may involve establishing trees over hundreds of kilometres. It was suggested that this could be incentivised by the Government and the planning could be supported by central or local government. One forestry company, however, did express concern that riparian buffers planted with indigenous trees would be seen as a "cure all" for landslides and eliminating woody debris entering waterways. They disagree, offering a photo of landslide occurring on a wide and long riparian slope which was previously vegetated in healthy 40+ year old indigenous forest.

Silvicultural systems

Some submitters focused on what silvicultural systems should be used rather than just the tree species or harvesting methods. Those submitters said that determining the appropriate silvicultural system is the key to resilient and complete forest cover.

Submitters also suggested that crops should be planted that don't require felling at the same time in order to maintain forest cover over time.

A few submitters suggested that the land should be transitioned to horticulture, for example, through planting walnut and almond trees.



Pest control

A few submitters suggested that a strong pest control regime will be critical to support healthy forests in the future. Some submitters mentioned that recreational hunting would not sufficiently control pests in the region and a methodical regime should be put in place to ensure the sustainable future of forests in the region.

Planning

Most submitters suggested that careful thought had to go into land use planning for the future. Submitters urged avoiding any "knee jerk" reactions and reactive decisions in favour of taking the time to consider the best, and most sustainable, solutions for the region.

Some submitters suggested that Forest Environment Plans (sometimes submitters used the term "land management plans") should be required, in parallel with Farm Environment Plans, for all plantations.

Some submitters felt that local government (i.e., the HBRC and the GDC) has a strong role to play in the future of land use. It was suggested that they could play a key role in regulating land use going forward and support long-term planning for the forestry industry in the region.

Policy and legislative framework

Emissions Trading Scheme (ETS)

Many submitters mentioned the ETS and suggested changes that could be made to the scheme. Submitters that commented on the ETS suggested some of the following ways that it could be amended to better support emissions reductions and avoid over-incentivising land-use change to forestry:

- change from focusing on net emissions (which inherently favours fast growing pine) to focus on actual emission reduction (i.e., not trading off forestry carbon storage against gross emissions and using emissions reduction and forest carbon capture to calculate emissions reduction)
- remove *pinus radiata* removed from permanent forest category
- address the issue of liability for carbon credits on Māori owned land
- remove all exotic trees from the ETS
- add farmers and/or farm forestry to the scheme
- remove the financial disincentive to replacing exotic and unsuitable crops with native
- use the ETS to financially incentivise the planting of riparian zones
- use the ETS to incentivise indigenous afforestation
- develop a biodiversity incentive scheme.



Resource Management Act 1991 (RMA) and National Environmental Standards for Plantation Forestry (NES-PF)

Many submitters mentioned the NES-PF. One key theme related to the NES-PF was that submitters felt the regulations are insufficient to manage erosion. A few submitters did say that the NES-PF works well nationally but is not particularly well suited to the region. Submitters suggested a range of improvements that could be made to the NES-PF, sometimes in quite discrete detail. Some suggestions included:

- changing the Erosion Susceptibility Classification (ESC)
- increasing setbacks near waterways
- lessening the degree of permissiveness of the NES-PF
- including greater controls for all highly erodible land types
- including a forest management plan regime (similar to the Freshwater Farm Plan regulations made under the RMA)
- amending to support the "right tree right place" approach
- accounting for cultural impacts within the NES-PF.

The ESC was mentioned by most submitters that mentioned the NES-PF. One submitter said that the ESC should:

- incorporate the probability and impact of high intensity rainfall events and climate change,
- address the 'downstream' risks of sediment, slash, and debris delivery to receiving environments, and
- not rely so heavily on the New Zealand Land Resource Inventory to derive ESC ratings as it does not adequately represent erosion susceptibility.

Research and insights

Many submitters recommended that more research and science is undertaken to understand the best land use for the area, and the options for more sustainable land use. Some submitters suggested this could occur as part of a more detailed review following the Inquiry. A few submissions were from research organisations and/or academics with in-depth information about research and science related to land use of the region. Other submissions attached research papers that they deemed relevant for the Panel to read.

Some submitters also stated that it is critical that decision-makers (at all levels) have access to good quality information to enable strong future planning based on the relevant risk information.

Submitters had various suggestions about silvicultural systems that could be researched and tested in the affected regions. Submitters often emphasised that it was important for the government to invest in research to make effective and sustainable decisions for silvicultural systems.



Other submitters discussed the work that is currently underway in the research and science space. For example, Scion submitted that they have portfolios of research investigating establishment of indigenous forests; design of restoration of a more diverse range of forest types; and the systems needed to manage forests for a broad range of values and ecosystem services.

Many submitters felt that greater investment, and coordination, of science and research is needed in order to ensure the vision for the future is fulfilled.

Monitoring, compliance, and enforcement

Some submitters considered that the solutions included ensuring that the relevant local authorities are doing the monitoring required to achieve compliance with existing legislation. Some submitters expressed concerns that enforcement action related to non-compliance with current legislation is minimal and does not act as a deterrent.

A few submitters stated that the regulatory settings need to be amended to introduce more strict enforcement action (e.g., higher infringement fees) for non-compliance to create an incentive to act in an environmentally responsible way.

Some submitters said that local councils are not appropriately resourced to undertake compliance and monitoring activities and should be better resourced to do so in future or should not be responsible for compliance and monitoring activities.

A few submitters considered that the onus to demonstrate compliance should be moved from local government to the organisation (e.g., forestry company). That would result in a staged approach to consents where compliance would have to be demonstrated before the consented activity is permitted.

Economic and market incentives

Generally, most submitters felt that "best practice" land use should be financially incentivised in order to support sustainable and long-term solutions.

Many submitters made suggestions for access to funding as part of the desired solution. For example, funding for soil conversation work programmes, for land management and soil conservation advice to be provided, wetland restoration, and research into sustainable land use diversification.

It was also suggested that financial support should be provided for recovery, and to compensate for any loss of productive land as a result of solutions that are implemented (e.g., retiring productive forests or requiring larger riparian zones to be planted). "A system is needed to incentivise transition to a more sustainable land use on the most vulnerable land that also provide multiple positive outcomes."

[GDC]



Some submitters also recommended that more funding be made available for increased monitoring and enforcement of regulatory instruments (such as the RMA and associated legislation).

Some market-based solutions were also suggested, such as 'Tech & Green' capital investment markets that can be accessed to incentivise land use changes for positive environmental outcomes, or the proposal for the Continuous Cover Forestry Fund to be used as an impact equity instrument to acquire forestry assets for management under continuous cover forestry principles.

3.3.3 Who should be involved?

This section covers the analysis of the responses to the question "In your view, which groups need to be involved in developing solutions and what is the best way for these groups to be involved?"

Community-led solutions

In general, submitters felt that the local community should be closely involved in all aspects of the solutions going forward. Some submitters extended an invitation to continue to be engaged or involved in the future.

Many responses identified local communities as key to the discussions, and some provided examples of programmes such as native planting programmes, school/kura programmes, and ecological groups specific to the region. Submitters recommended more community-led programmes which are supported (through advice and funding) by the government. Some submitters discussed the benefits of communities working together, and working to ensure forestry companies were compliant.

There were mixed views on taking a localised approach versus a nationwide approach. Some submitters stated that the local community knows best, and localised solutions should be applied. Others indicated that there are lessons learned from these severe weather events (and others) that should be applied to national-level solutions.

Tangata whenua

Many submitters felt that tangata whenua should have a strong role in the planning and implementation of solutions. Submitters said that government should closely engage with tangata whenua throughout the process. In answer to the question, many submitters simply answered "whānau", "iwi" and/or "hapū". Some submitters mentioned specific iwi, iwi organisations, and Māori groups that should have a role in implementation, including Mana Taiao Tairāwhiti, Maungaharuru Tangitū Trust, Nga Pou a Tāne, and Hauiti Incorporation.



"Today, our sanctuaries tend to be marae. When we are under attack from flooding, people flee to the nearest marae where they are fed and housed. Māori know how to cater for people at times of crisis. But the people who are making major decisions about allocation of resources and disaster recovery funding tend to be non-Māori who have little connection with the lands and people who have been devastated.

We need more tangata whenua in the decision-making roles. Not just the solo "super Māori-fulla" that we have seen government departments use in the past; that way leads to burnt-out and one voice is easily ignored in a roomful of non-Māori "experts". We need teams of people who understand tangata whenua needs and concerns."

[Te Wairoa local resident, Māori, rural landowner]

Other groups

Submitters generally seemed to assume that the government would be involved in developing solutions. Submitters also often stated that they thought that a wide range of stakeholders would need to be involved, at a range of levels, in order for solutions to be successful.

Submitters also felt that it would be important to include landowners, industry, scientists, infrastructure designers, engineers, legal experts, conservationists, ecologists, various industry bodies, and university and research groups.

Out of scope

Some submitters made comments that were out of the scope of this consultation. Out of scope comments generally concerned individual property matters, political commentary, or commercial organisations offering their services. A few submitters provided commentary about the impacts that various weather events had on other regions, particularly from Cyclone Gita.



Appendix A: List of organisations

Air New Zealand
Aratu Forests Limited
Ashdown Forest Partnership (Roger Dickie Ltd)
Barney Tūpara for himself and for on behalf of the uri of Tamati (Goog) Kerekere, Kahungunu John (Golo) Kerekere, Barbara Te Moana i Kauria (Kuia) Kerekere and other members of the Kerekere whānau
Beef + Lamb New Zealand Ltd
Belmont Forest Partnership (Roger Dickie Ltd)
BOPRC
Brentwood Forest Partnership (Roger Dickie Ltd)
Castle Rock Forest Partnership (Roger Dickie Ltd)
Central North Island Wood Council
Char Bro Limited
Chatswood Forest Partnership (Roger Dickie Ltd)
Chatswood Forest Partnership (Roger Dickie Ltd)
Climate Forestry Association Incorporated
Crosswood Forest Partnership (Roger Dickie Ltd)
Dashwood Forest Partnership (Roger Dickie Ltd)
Eagle Forest Partnership (Roger Dickie Ltd)
Eastland Wood Council
Eastwood Forest Partnership (Roger Dickie Ltd)
Environmental Defence Society & Pure Advantage
Ekos
Ernslaw One Ltd
Fairway Forest Partnership (Roger Dickie Ltd)
Farmers' Mutual Group
Federated Farmers
Fergus Rural (Tim Petro)
Firstlight Network
Fleetwood Forest Partnership (Roger Dickie Ltd)
Forest 360 ltd

Forest & Bird



Forest Management (NZ) Ltd
Forestry Ministerial Advisory Group
Friends of the Maitai
Gisborne / East Coast Branch of the NZ Farm Forestry Association
Gisborne District Council
Glen Alvon Forest Partnership (Roger Dickie Ltd)
Greens Forest Partnership (Roger Dickie Ltd)
Greenwood Forest Partnership (Roger Dickie Ltd)
Guardians of the Ruakituri
Hawkes Bay Forestry Group
Hawkes Bay Regional Council
Hereford Forest Partnership (Roger Dickie Ltd)
Heywood Forest Partnership (Roger Dickie Ltd)
Hinemaurea Marae ki Māngātuna
Horticulture New Zealand
Hyde Park Forest Partnership (Roger Dickie Ltd)
Juken New Zealand Ltd
Kariaka Pa - Ngati Porou Marae
Kingswood Forest Partnership (Roger Dickie Ltd)
Kiwi Organics Limited
Links Forest Partnership (Roger Dickie Ltd)
Local Government New Zealand (LGNZ) / Joint Forestry Project
Long Ridge Forest Partnership (Roger Dickie Ltd)
Malthouse Forest Partnership (Roger Dickie Ltd)
Mana Taiao Tairāwhiti
Manaaki Whenua Landcare Research
MillbrookForest Partnership (Roger Dickie Ltd)
Mitchpine Limited
Monterey Forest Partnership (Roger Dickie Ltd)
Narrowlands Ltd
New Zealand Federation of Commercial Fishermen
www.allenandclarke.co.nz



New Zealand Forest Owners Association

New Zealand Human Rights Commission

New Zealand Institute of Forestry

New Zealand Poplar and Willow Research Trust

Ngā Hapū O Ngāti Porou¹

Ngā Hapū o Tokomaru Akau

Ngā Hapū o Tokomaru Akau

Ngā Pou a Tāne

Ngāti Porou Forestry Limited

Ngāti Porou Holding Company Limited

Northland Wood Council

NZ Farm Forestry Association

NZ Rock Lobster Industry Council, Paua Industry Council, Fisheries Inshore New Zealand

Ormsby Forest Partnership (Roger Dickie Ltd)

Pahiitaua Incorporation & Oraka Station (Akuaku A10B)

Pan Pac Forest Products Ltd

Parengarenga Incorporation

PF Olsen

Pine Ridge Forest Partnership (Roger Dickie Ltd)

Portobello Forest Partnership (Roger Dickie Ltd)

QEII Trust

Rabobank New Zealand

Rau Tipu Rau Ora

Rayonier Matariki Forests

Richmond Forest Partnership (Roger Dickie Ltd)

Roger Dickie NZ Ltd

Rongowhakaata Iwi Trust

¹ Is a collective of the six management arrangements under the Ngā Rohe Moana o Ngā Hapū o Ngāti Porou Act 2019 (Ngāti Porou Act 2019) which provides for each of these entities to be the effective decision makers in relation to their respective interests in nga rohe moana o nga hapu o Ngati Porou. (a) Potikirua ki Whangaokena Takutai Moana Trust. (b) Whangaokena ki Onepoto Takutai Kaitiaki Trust. (c) Te Papatipu o Uepohatu me te Papatipu o te Ngaere Takutai Kaitiaki Trust. (d) Whanau Hapu of Te Aitanga a Mate Te Aowera and Te Whanau a Hinekehu Takutai Kaitiaki Trust. (e) Ngā Hapu o Waipiro Takutai Kaitiaki Trust; and (f) Ngāti Wakarara - Ngāti Hau Takutai Kaitiaki Trust.



Scion
Specialty Wood Products Reserach Partnership, Foerst Growers Research
Stableford Forest Partnership (Roger Dickie Ltd)
Summit Forests New ZEaland Limited
Taipōrutu Trust (Mere Whaanga PhD, Settlor Trustee)
Tamanuhiri Tutu Poroporo Trust
Tāmanuhiri Tutu Poroporo Trust
Tane's Tree Trust
Te Aitanga-a-Hauiti Iwi Incorporated
Te Kāhui Inihua o Aotearoa / Insurance Council of New Zealand (ICNZ)
Te Rūnanga o Ngāi Tahu and Ngā Tahu Forestry
Te Rūnanga o Ngati Porou
Te Tumu Paeroa
Te Whanau a Te Rangipureora and Ngati Kuranui (Hana Parata-Walker)
The Forest Stewardship Council Australia and New Zealand
The Good Carbon Farm
Toha Foundry Limited
Tolaga Bay Inn Ltd
Tologa Bay/Uawa Area School (Susie Te Rure)
Triplej Ltd
Trust Tairāwhiti
Trustees of Maraetaha 2, Sec 3 & 6 Incorporation (Bella Hawkins)
Turnbridge Forest Partnership (Roger Dickie Ltd)
Ūawa Tiaki Tai - Tolaga Bay Surf Lifesaving Club
Waimatā Catchment Group
Wairoa District Council
Wellwood Forest Partnership (Roger Dickie Ltd)
Winchester Forest Partnership (Roger Dickie Ltd)
Windermere Forest Partnership (Roger Dickie Ltd)
Windsor Forest Partnership (Roger Dickie Ltd)
Women's Native Tree Project Trust
Woodside Forest Partnership (Roger Dickie Ltd)



Appendix B: Recommendations from local government submitters

Gisborne District Council

SOLUTIONS UNDER THE CURRENT SYSTEM			
Recommendation	Comment		
To complement controls via the NES PF, a slash management plan (within Forest Environment Plans) should be required as part of the permitted activity in Green/ Yellow/Orange (most), and for a resource consent application for harvesting on Orange/Red Zone land. They could consider a wide range of options to address plantation forestry management:	Long term binding Forestry Environment Plans (that include slash management plans) Setbacks: inclusion of realistic case by case Biodiversity setbacks: 5 and 10 m have proven inadequate. Require direct actions within setback areas such as <i>high stumping</i> is required to harvested trees to a height of 1.0 metre within one tree length of the permanent 'biodiversity set-back'. Increased stringency is required for harvesting and replanting		
Require a further Risk Zone for Extreme Risk, a "Purple" zone where plantation forestry should not take place. Some of the areas are shown in figure 6. We believe many sites should now be re- planted or aerial sown (drone) with un- palatable native species such as manuka, kanuka, tutu, rohutu which will allow recovery without negative browsing impact from ungulates	Erosion Susceptibility Classification (ESC) use at a realistic scale with further attributes considered. These in turn underpinned by rules that are more stringent than the NES-PF in the Councils emerging Land use plan (replacing the TRMP). Hold settings at strategic points.		
Safe storage or removal (as a valuable raw material) of wood debris from landings, especially in steep slopes. Harvesting methods that minimise breakages and place potential slash in safe sites. Partial catchment (coup) harvesting	Location and timing of installation of slash catchers Consideration of the potential for slash to be generated from the harvested slope (less likely on easier slopes and further from waterways). Introduction of live slash retention plantings at harvest to protect the site at the subsequent rotation harvesting. Retention of riparian vegetation.		
Greater cost recovery	Enable Council to recover more from prosecutions. This would help offset high legal costs and allow remediation of impacts. Polluter or the ratepayer pays		



	Remove option for offenders to elect a jury trial. Inclusion of civil sanctions as a tool to respond to offences when traditional prosecution is not the best tool	Increase maximum fines available for criminal prosecutions. Any fines imposed should be reflective of the environmental, infrastructure and social impact of the offending. No jury trial would reduce delays		
	Changes to the Tairāwhiti Resource Mar direction)	nagement Plan (ideally supported by national		
		The <i>purple zone</i> (referred to above)		
	New overlay (riskiest land)	Tighter controls on harvest; drive land use change		
	logging residues removed; slash at landings removed	To provide a natural buffer between harvest areas and waterways		
	More substantial setbacks	Reduce the amount of land that is vulnerable until a vegetation has re-established		
Area based restrictions on harvest in catchments/sub catchments Carbon and Conservation Forests Manufacturing Clusters to stimulate demand for Biomass	Content to expand aspects from the NESPF to all Forests			
	Provisions to enable development of manufacturing clusters. As the new RMA system that will provide RSS is not in place for a number of years.			
Post-RMA improvements under the NBA_RSS and NPF				
	RSS Manufacturing Clusters to stimulate demand for Biomass	More detail in submission		
	Limitations of the NES-PF to provide content into plans will be provided for by the NPF.	Greater ability to incorporate into plans, see below.		
	Incorporation of the Forestry Owners Association <i>Voluntary</i> Code of Practice into the system.	More detail in submission		
	New approaches to land-use could be explored through the development of the Regional Spatial Strategy (RSS) which will be required by the new Spatial Planning Bill currently being considered by Select Committee. However, this is not an immediate solution.	Central government buy-in and investment will be critical to achieving transformational change.		



Creation and implementation of biodiversity credits	A system is needed to incentivise transition to a more sustainable land use on the most vulnerable land that also provide multiple positive outcomes	
Roading		
Review of Waka Kotahi's Emergency Work Policy	Policy is capped at an organisation's normal FAR plus 20% to a maximum of 95%.	
Collaborate with other councils impacted by weather events like Wairoa and Tasman likely similar issues.	Bespoke application for 100% is already predetermined.	
Technology		
Greater use of technology such as drones and tagging.	Could be set out in RMA or the Forests Act. Details in section below.	

LGNZ

Please note that this is the summary of recommendations. Please see Part E of the LGNZ submission for full detail of recommendations.

- 1. Amending the NES-PF, to extend its scope, place more focus on certain matters and improve the underlying data.
- 2. Better integration of industry best practice, codes of practice and guidelines with regulation.
- 3. More direction should be provided to local authorities, and there should be increased flexibility for local authorities to regulate forestry activities, beyond the limitations created by the NES-PF.
- 4. There would be benefit in an integrated set of national policy and environmental standards, that are focussed on ensuring that the cumulative risk of land instability and natural hazards are properly managed.
- 5. Require that a forest management plan is developed for all forest operations, which is compliant with an amended NES-PF.
- 6. Funding for increased monitoring and enforcement, and use of the levy for mitigation.
- 7. Incentivising forestry owners to retire erodible land, and plant with natives for land stability.
- 8. Encourage/incentivise industry to move to a continuous canopy cover model, or with penterwald harvesting (select trees only) to maintain canopy cover at all times.



Hawkes Bay Regional Council

- 1. Amend the NES-PF and associated instruments to address the following concerns:
 - a. A number of the key tools referenced in the NES-PF are too coarse for sitespecific controls and mitigations. The 'ESC' is one prime example of this. HBRC considers that regional scale land use capability lacks sufficient detail as a tool to underpin national regulations permitting broad-scale forestry across the landscape. Certain bedrock types at certain slopes are just not suited to short rotation forestry or non-coppicing tree species. This variability is not readily picked up by the 1:50,000 scale ESC tool.
 - b. Five metre setbacks near waterways are insufficient if harvested trees are likely to crush the 'buffer'
 - c. The flooding parameters currently specified in the NES-PF are totally insufficient. For example, Regulation 20 for slash permitted activity conditions requires "Slash from pruning and thinning to waste must not be deposited into a water body, onto the land that would be covered by water during a 5% AEP event, or into coastal water." The permitted 5% AEP condition needs to be raised in many clauses throughout the NES-PF.
 - d. *Pinus radiata* is a relatively low-value timber species with end-uses that are typically temporary and/or require chemical treatment to be used for trade purposes. Low-value products limit financial reward and incentives to "take more care" or "spend more time" on performing best practice forest management or utilising more woody biomass.
 - e. 'Slash' currently does not include windfall, prunings or stems broken during harvest. Limiting 'slash' to only cut material fails to ensure significant volumes of other woody biomass from forestry operations are appropriately regulated.
 - f. The degree of permissiveness throughout the NES-PF is concerning and is setting up future problems. For example, permissive afforestation that in several decades time will pose
 - g. challenges and largely uncontrolled threats to land instability and woody debris movement during and after harvest.
 - h. Greater controls (e.g. though consenting pathways) are needed not only for Class 8 land, but also other highly erodible land types. The consent authority for forestry activities on erodible land should remain within the roles and responsibilities of regional councils and unitary authorities and not be split partly with territorial authorities and partly regional councils.
 - i. Plantation forestry operations are already meant to have quite comprehensive earthworks and harvest management plans in place. By and large we find these plans to be too generic to be auditable, perhaps due to the scale and nature of forestry and the way companies plan their work. Forestry operators don't



always know too far in advance exactly what they will do in detail in each setting, but refined ESC and LUC information would serve to better inform decisions to tailor their practices.

- j. A 'forest management plan' regime (possible akin to the Freshwater Farm Plan Regulations under the RMA) would prompt plantation forester AND carbon foresters to carefully think about the whole life-cycle of their activities, the timing, the places and the management interventions required to "take more care" and "spend more time" on performing good or best practice forest management. We note LGNZ's submission recommends 'forest management planning' and we support that recommendation.
- 2. Government policies be adapted or introduced that provide far greater incentives and support for the 'right tree in the right place.' This would necessitate significant Crown funding sustained over decades not just a short injection for limited period time.

Wairoa District Council

Recommendations for the amendment of the NES-PF for:

1. Authorities for any new forests, but with a wider degree of discretion – as set out below – relative to certain LUC categories:

LUC category	Recommendations			
LUC 1-3	Permitted activity status for forestry that cumulatively occupies less than 5% of the effective area of any title or group of titles operating as one farming business.1 A forestry management plan should be prepared in order to meet permitted activity status. The forestry management plan should define waterway setback distances, roading pathways, debris storage and harvesting sites, permanent non-production plantings next to waterways and up gullies. This will assist in holding vulnerable land and catching debris. Such planting could include poplar, willow, redwoods and native plantings.			
	Restricted discretionary status for areas greater than 5% of the effective area of any title or group of titles operating as one farming business. The Council has control and the discretion may be around soil quality, roading infrastructure and cumulative social impacts. A forestry management plan should be prepared, and councils should have control to impose more restrictive measures in the forestry management plans.			



LUC category	Recommendations			
LUC 4 and 5	Permitted activity status for forestry that cumulatively occupies less than 100ha or 10% of the effective area of any title or group of titles operating as one farming business (whichever is the lesser). Restricted discretionary status for areas greater than 100ha or 10% of the effective area on a title or group of titles operated as one farming business. This includes whole farm conversions. Consent authority discretion should capture potential effects on off-site roading infrastructure and cumulative social impacts.			
	A forestry management plan should be prepared for both activity statuses – and councils should have the ability to impose more restrictive measures in the forestry management plan for the restricted discretionary status activity.			
LUC 6 and 7	restrictive measures in the forestry management plan for the restricted discretionary status activity. Permitted activity status for cumulative forestry up to 30% of the effective area of any title or group of titles operating as one farming business, but only where harvesting operations are not likely to result in the mobilisation of silt or forestry slash. This would require conditions on management of forestry slash at harvest and when pruning and thinning. Discretionary status for areas greater than 50% of the effective area of any title or group of titles operating a sone farming business or where harvesting activities are likely to result in the mobilisation of silt or slash. A forestry management plan should be required to meet the requirements of permitted activity status or discretionary activity status. Council should be enabled to have additional control over the content of the forestry management plan so that more restrictive measures can be imposed. The above rule framework should include proposals for whole farm			
LUC 8	Discretionary activity status should apply, rather than the current restricted discretionary status. A forestry management plan will be required and Council is enabled to impose additional restrictive measures. Regular review of the forestry management plan should be carried out to ensure currency.			



2. Existing forests:

LUC category	Recommendations		
LUC 1-5	Harvesting to remain a Permitted Activity. Improvements to NES standards to capture potential off-site effects and mitigation measures in respect of those effects.		
LUC 6	Controlled activity status subject to compliance with standards and conditions, including requirement to provide a forestry management plan to the relevant consent authorities, with review timeframes associated with the same. Restricted discretionary activity status for any harvesting activities over a particular threshold, in which case the matters of discretion will need to be broad enough to capture: preparation and content of a forestry management plan, type and method of harvesting, timing, location and duration of harvesting, effects on water quality, etc and measures to minimise soil erosion during and after harvesting, including sediment and debris related effects off-site. Management of roads and infrastructure off-site can be a difficult issue, but scope should be provided for consideration of these potential effects to drive a management response and the RMA/NES should also provide scope for financial contributions from persons who cause damage to roads, rather than this cost having to be met by communities.		
LUC 7 and 8	Discretionary consent to be obtained from the relevant consent authorities with detailed forest harvest plan that includes: road design, waterway management, skid site and slash storage or removal, silt management and a post-harvest replanting plan, including permanent non-production plantings next to waterways and up gullies. The forestry management plan may include a staged harvest or avoiding harvest in the most vulnerable areas.		

Note: Wairoa District Council also suggested that a separate mechanism from the NES-PF be used for management of existing forest on highly erodible land.

Appendix C: Coding framework and numbers

The numbers identified in the table below are the pieces of text from submissions coded to each 'child code'. This means that if there were three different pieces of text from one submission coded to the same child code, it would count as 3 individual pieces of text despite being from the same submission.

In addition, some comments that addressed multiple 'child codes' were only coded to one child code to maintain the context of the comment in the analysis phase.

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
01. Tell us about your experience during Cyclones Hale	Environmental impacts	115	Land damage Forests damage (including dumped woody debris/slash) Rivers damage (e.g. sedimentation) Estuaries damage Sea and fisheries damage
What effects have you experienced?	Personal/wellbeing impacts	127	Impact on physical health Wellbeing impacts, isolation, inability to work, (includes anti- forestry sentiment) Personal property damage Look for "I, me, my family/whanau"

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Cultural impacts	24	Marae Wāhi tapu (pa tawhito, ana tupapaku, urupa, wahi pakanga, nga toka, rakau tapu, waipuna, awa, roto) Taonga Heritage sites/historic places Mātauranga Māori and Cultural Practices i.e., Mahinga Kai
	Infrastructure	79	Transport Telecommunications Energy Water
	Community impacts	56	Impact on Māori Migration out of region Impact on community cohesion (e.g. reduced ability to travel within region) Look for "my neighbours, our school, our parks, community services"

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Economic impacts	59	Impact on forestry sector or jobs for forestry workers Impact on farming/agriculture sector and jobs Impact on local businesses (e.g. reduced spending) Insurance issues Māori land and Māori enterprises
	Other	28	Experience of people involved in response
02. What is it about the way we use land, and how land use has changed over time that led to the effects being so severe?	Historical context	149	General history Māori history pre-colonisation History pre-cyclone Bola History Post-cyclone Bola Appropriate historic land use

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Inappropriate land use	142	Land prone to erosion Steep land Soil type and structure Built over flood plains Built near waterways Insufficient setbacks
	Forestry	209	Exotic/pine trees Harvesting practices, clear felling Lack of restoration by industry
	Farming	37	

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Infrastructure	21	Roading issues Bridges not built to withstand impacts of climate change Flood control infrastructure (e.g. channelizing rivers, stop banks, stormwater system) Wastewater infrastructure Electricity Infrastructure Mobile/Internet/phone infrastructure
	Regulation	34	Consenting issues Insufficient regulation/standards/scrutiny/land management Compliance and enforcement (including who pays for this)
	Western approach to use/management	14	Te ao Maori perspectives not utilized Mātauranga Māori Degradation of natural defenses

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
 03. Are there specific practices or ways in which we use the land that have caused more harm than others? Which of these practices are most important? Why? 04. Is there anything else we should know about that has contributed to the damage from severe weather? 	Afforestation	192	Over planting Forestry industry practices Harvesting practices, clear felling, slash, lack of cleanup Exotic/pine trees Close to waterways Inappropriate land for commercial forestry (steep, highly erodible)
	Farming practices	63	Including tree planting
	Lack of regulation/ monitoring / risk assessment	28	
	Lack of restoration	18	By industry, government, farmers Lack of clean up after extreme weather events
	Climate change + weather	113	
	Waterway management	54	

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Local government	37	Zone rules Resource management Will to make changes Regulatory exemptions Resources
	Lack of investment in infrastructure	35	Roads Bridges Forestry infrastructure (e.g., platforms, slash cones)
05. How do the current laws, policies and rules influence the way we use our land? What works well? What is unhelpful? Think about the current legislation, market drivers and conditions,	National legislation, policy and regulation don't go far enough / need to improve	264	Emissions Trading Scheme Climate change laws National Environmental Standards for Plantation Forestry (NESPF) Mandatory debris removal National Policy Statement for Freshwater Management (NPSFM) Government leadership Jobs for Nature experiences

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
regulations, rules, and the way in which requirements are enforced. 06. Anything else you would like to say about the current policy framework?	Forestry guidelines	34	Including compliance/monitoring, accountability if standards not met
	Local plans/policies/bylaws	55	District plans Regional Plans
	Compliance and enforcement	80	Prosecution Penalties Time taken Cost of monitoring and enforcement
	Offshore ownership of forestry companies	44	
07. What is your vision for the future of land use in the region?	Alternative wood crops	32	Alternative wood crops Longer-term wood crops
	Exotic afforestation	35	Support Opposition Restricted production

6

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Farming	37	Pastoral farming Horticulture Diversification Other use (e.g., manuka farming)
	Conservation + sustainability	154	Native trees Biodiversity Permanent forests Natural regeneration
	Other	94	Residential development Industrial use Recreational use Changes to Infrastructure Natural Infrastructure Disaster Response Tourism

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
08. What do we need to do to achieve this vision?	Legislative/policy changes	310	Reform ETS/Price agricultural emissions Reform NES-PF rules Reform RMA Improve RMA compliance/enforcement Remove ETS subsidies Limit allowable slash volumes Reform river catchment management Empower local councils Empower locally-led solutions
	Practices	393	Planting diversity Harvesting methods Restrict forestry to certain areas Widen conservation Waterway management Voluntary industry-led action

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Planning	289	Infrastructure planning for resilience Transport Local processing Better risk assessments Adaptation preparation Emergency response and civil defence reform Long-term, intergenerational thinking
	Economic + market incentives	226	Local economic development (i.e., local products sold locally) Incentivise new housing Economic support to region Fund hapu groups Immigration Fund training Incentive use of industry byproducts 'Just Transition' comments

6
Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Governance	50	Treaty Partnership Improve inter-government collaboration Locally-led solutions (tangata whenua, landowners, residents)
	Technological solutions	73	Slash solutions Value-added products
	Engagement/education	133	Community engagement Industry engagement Need better education about forestry and contributing factors to debris
	Responsibility/liability	75	Comments about holding industry to account Comments about not blaming/persecuting forestry or farming sector
	Farming + Agriculture	22	
09. Is there anything that shouldn't be changed, for example, things that if changed	Laws/policies	35	Existing laws/policies Over-regulating National standards v local plans

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
would make it worse?	Economy	7	Communities depend on forestry and farming for livelihood
	Clean up/restoration	7	
	Environment	3	Pest control
	Governance	4	
	Community engagement	3	
	Forest	34	
10. In your view, which groups need to be involved in developing solutions and what is the best way for these groups to be involved?	Māori	83	Role of Treaty Partners (Iwi / Hapū) Role of Māori as Citizens (incl. Māori enterprises/ business owners) Role of Tangata Whenua (incl. whānau) Owners of Māori land
	Workers/kaimahi	9	
	Industry	88	Forestry businesses Farmers Insurance sector

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
	Local communities	106	Marae Committees Schools Churches Community leaders
	Landowners	33	Māori landowners (owners of land under Te Ture Whenua Māori Act) General landowners (including Māori)
	Government	96	Central Govt – MfE, MPI, Worksafe, TPK, NZTA, Civil Defence Councils Trust Tairawhiti Hawke's Bay Regional Planning Committee
	Other	94	Environmentalists Climate scientists Planners Catchment groups

Parent code (survey questions)	Child code	Number of submissions	Notes/examples/includes
11. Any general feedback on the consultation	Conflicts of interest	10	Councils holding interest in Forestry companies Forestry lobby influencing govt
	Misinformation	8	
	Consultation feedback	103	
12. Parking lot	No child code	28	Feedback with no obvious code will be coded here. This Code will be key to the iterative process – it will be regularly reviewed and new codes will emerge when common themes identified.
13. Good quotes	No child code	These were identified when child codes were reviewed.	
14. Out of Scope	Impacts on other regions	26	
	Unrelated landuse issues	30	
	Political Comments	15	
	Other	140	



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