
BEFORE THE ENVIRONMENT COURT

In the matter of appeals under clause 14 of the First Schedule to the Resource Management Act 1991 concerning proposed One Plan for the Manawatu-Wanganui region.

between **FEDERATED FARMERS OF NEW ZEALAND
ENV-2010-WLG-000148**

and **MERIDIAN ENERGY LTD
ENV-2010-WLG-000149**

and **MINISTER OF CONSERVATION
ENV-2010-WLG-000150**

and **PROPERTY RIGHTS IN NEW ZEALAND
ENV-2010-WLG-000152**

and **HORTICULTURE NEW ZEALAND
ENV 2010-WLG-000155**

and **WELLINGTON FISH & GAME COUNCIL
ENV-2010-WLG-000157**

Appellants

and **MANAWATU-WANGANUI REGIONAL COUNCIL**
Respondent

**STATEMENT OF PLANNING EVIDENCE BY PHILLIP HINDRUP ON THE
TOPIC OF SUSTAINABLE LAND USE AND ACCELERATED EROSION ON
BEHALF OF MANAWATU-WANGANUI REGIONAL COUNCIL**

Dated: 31st January 2012



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Terms

| | | |
|-------|---|---|
| TEB | = | Technical evidence bundle |
| POP | = | Proposed One Plan |
| NV | = | Notified version of POP |
| DV | = | Decisions version of POP |
| HRC | = | Manawatu-Wanganui Regional Council (Horizons) |
| LMO | = | Land Management Officer |
| WFBPs | = | Whole Farm Business Plans |
| SLUI | = | Sustainable Land Use Initiative |
| HEL | = | Highly Erodible Land |
| RMA | = | Resource Management Act 1991 |

Introduction

1. My name is Phillip John Hindrup. I hold a Bachelor of Resource and Environmental Planning from Massey University (2001). My position is Senior Consents Planner with Manawatu-Wanganui (Horizons) Regional Council where I have been employed for three and a half years.
2. I have 11 years experience in New Zealand in the Planning profession. I have worked mostly as an employee to local government both for territorial authorities and regional councils.
3. The majority of my planning experience has been in the processing of resource consents and plan implementation and interpretation. Prior to my current position I worked at the Palmerston North City Council, Horowhenua District Council and Hawke's Bay Regional Council, the latter of which included working as a Policy Planner.
4. I became an employee of HRC in May 2008, a full year after the POP was notified. I have worked with both the NV and DV of POP and the many changes that were introduced. During my time I have fielded daily enquiries, both from internal and external parties, as to whether resource consents are required for certain activities. To undertake this role successfully it has been necessary to gain a thorough understanding of the POP provisions and what the overall document is trying to achieve.

5. I am therefore familiar with the issues and processes involved in the development of POP and I have a sound understanding of the issues that have arisen on the implementation of its provisions.
6. I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Notes. I agree to comply with that Code of Conduct.

Summary of Key Issues

7. This evidence is on sustainable land use and accelerated erosion, which encompasses appeals against Part 1, Chapter 5 DV POP and Part 2, Chapter 12 DV POP. Mediation on this topic did not result in the resolution by agreement of any appeals on this topic, and therefore all appeals (with the exception of the appeal against Rule 12-2 (Forestry)) on this topic remain unresolved.
8. This statement of evidence focuses on four key issues that I understand to be central to the disagreement between the parties involved. These unresolved matters relate to Chapter 12 of the DV POP that sets out the rule stream for the use of land.
9. There are four key issues, with various sub-issues, relating to rules in Chapter 12 DV: 12-1; 12-3; 12-4; and 12-5.
 - (a) **Key Issue 1 – Vegetation Clearance:** Is vegetation clearance on steep land appropriate as a permitted rule? If so, what are the appropriate performance standards?
 - (b) **Key Issue 2: Land Disturbance:** Is large scale land disturbance (greater than 2,500 m²) appropriate as a Permitted Activity rule? Should small scale land disturbances be regulated by a regional rule? Should land disturbance on steep land require consent? If so, what slope should be set as the threshold?
 - (c) **Key Issue 3 – Cultivation:** Is the regulation of cultivation only within 5 metres of a waterbody appropriate? Should cultivation in all areas be regulated, including on steep land? If so, what are the appropriate performance standards?

- (d) **Key Issue 4 – Riparian Zone:** Should rules regulating cultivation, land disturbance and vegetation clearance have riparian margin setback performance standards and, if so, what should that setback be?
10. The remaining unresolved appeals on objectives, policies and other methods contained in Chapter 5 (RPS) and at the beginning of Chapter 12 (Regional Plan), are addressed later in this evidence under the heading “other matters.”

Executive summary

11. Having considered all of the technical evidence, the NV POP and DV POP including the Commissioners reasons for decisions, the appeal points and the relevant provisions of the RMA, my conclusions on the four key issues are:

- (a) **Vegetation Clearance:** I consider it is appropriate to have a Permitted activity rule for vegetation clearance, including steep land. I favour the use of an area based performance standard, regardless of the slope on which the activity is undertaken. I consider this to be the most efficient way to manage wide spread vegetation clearance and the effects of accelerated erosion because it provides Plan users and landowners the greatest certainty in determining whether resource consent is required. This is the approach taken in the operative Land and Water Regional Plan (2003), and the current adopted consent practice has been met with great success.

I recommend an area based performance standard of 2 ha in terms of the clearance of vegetation. The technical evidence of Allan Kirk sets out that commercial clearance of areas less than 10ha is unusual. The nominal threshold of 2ha however, is appropriate to allow small clearance without the need or costs of a resource consent while ensuring control is retained over larger activities and the clearance of vegetation on steep land where the risk of erosion and sediment loss is greater.

- (b) **Land Disturbance:** I recommend the inclusion of a Permitted activity rule to address the effects associated with small scale land disturbances. Small scale has been defined as an area of land disturbance less than 2,500m² and will be a Permitted activity. This activity should be subject to performance standards including set back from water bodies, implementation of adequate erosion and sediment control measures and compliance with a water quality standard.

I propose that large scale land disturbance should be a Controlled activity rather than Permitted (as it is currently in the DV POP), subject to the same performance standards as described above. The exception being that an erosion and sediment control plan must be submitted with the resource consent application. Where these standards cannot be met, the activity should fall for consideration as a Discretionary activity.

I consider it appropriate to use a slope based threshold to determine what land disturbance activities require consent. All land disturbance activities (small and large scale) over a slope of 25° should require consent as a Discretionary activity. The slope of 25° is preferred based on the evidence of Allan Kirk. Attached as **Appendix 1** are the amendments that I recommend be made to the DV POP (Chapters 5 and 12).

- (c) **Cultivation:** A Permitted activity rule is appropriate for all cultivation activities subject to performance standards. The performance standards will:
- (i) restrict cultivation within 5 metres from the bed of a river that is permanently flowing or has an active bed width greater than 2 metres, or the bed of a lake; and
 - (ii) restrict cultivation within 10 metres of a wetland or site valued for trout spawning.

The DV POP left a regulatory hole by including a separate rule for cultivation. In the NV POP cultivation was considered a 'land disturbance' activity, whereas the DV regulates cultivation as a

separate activity only within 5m of water bodies. I consider that the rule should apply to all cultivation and that cultivation within 5m of a waterbody is not appropriate as a Permitted activity.

I do not consider the inclusion of a separate rule or performance standard for cultivation on steep land is appropriate. There is currently insufficient technical evidence to suggest this is an activity in the Region requiring regulatory intervention. The inclusion of performance standards, including industry codes of practice, riparian margin setbacks and other standards addressing the ancillary discharge of sediments, appropriately address the risks of sediment loss.

- (d) **Riparian Margin:** The literature and technical evidence demonstrate that, as a general rule, the benefits provided by riparian zones increase with greater margin width. The benefits provided by riparian zones include preventing stock access, reducing nutrients entering water, influencing timing and duration of local downstream flooding and enhancing life supporting capacity of waterways via shading and provision of habitat across the terrestrial and aquatic interface.

The evidence of Dr Quinn points to research showing sediment trapping efficiency of 80% for all riparian margins of greater than approximately 5 metres. I recommend 5m as an appropriate setback distance for a performance standard.

For the higher value water bodies including wetlands and sites of significant for trout spawning, a performance standard of 10 metres is recommended.

I do not support a generic 10 metre riparian margin as I consider the costs to farmers of retaining this margin to outweigh the environmental benefits that will be achieved.

12. I have evaluated the rule framework recommended by me against the relevant statutory test, see **Appendix 3**.

History of POP and Accelerated Erosion

Accelerated erosion

13. The POP focuses on four “keystone environmental issues” one of which is unsustainable hill country land use. These issues were identified in the rounds of public consultation as part of the POP’s development.
14. The DV POP summary on Pg 1-3 explains that unsustainable pasture based farming practices damage the soil structure which accelerates erosion. An example, being the February 2004 storm, is discussed followed by the approach to be taken to address this issue. The approach focuses on the Sustainable Land Use Initiative (SLUI) on hill country land that is subject to an elevated risk of accelerated erosion, in conjunction with rules where appropriate.
15. Issue 5-1 of the DV identifies accelerated erosion as an issue to be addressed. This issue is unchallenged in appeals on DV POP:

"Issue 5-1: Accelerated erosion"

- (a) **Farming and other land uses in hill country**
Some aspects of current farming and other land use practices in the Region’s hill country and adjacent to water bodies are unsustainable. Where vegetation clearance, roading, tracking or other types of land disturbance* (including filling) are carried out in hill country or adjacent to water bodies, there is potential to destabilise slopes, causing accelerated erosion*. Accelerated erosion* is often causing:*
 - (i) *a significant reduction in the productive capability of land*
 - (ii) *increased sediment loads in water bodies which are reducing water quality, smothering aquatic ecosystems, infilling rivers, lakes and estuaries, and increasing flood risk to lowland communities*
 - (iii) *land stability hazards, particularly in steep hill country, which threaten people, buildings and infrastructure.*
- (b) **Coastal foredune***
Vegetation and soil disturbance associated with vehicle movement, tracking, coastal protection works and land recontouring have the potential to destabilise fragile coastal foredunes if not well managed.*
- (c) **Large-scale land disturbance* including earthworks**
Most other land use activities are not of a sufficient scale to have significant regional adverse effects. However, large-scale earthworks related to urban expansion and other development can have significant adverse effects on water bodies if sediment from these earthworks is poorly managed.
- (d) **Forestry***

Forestry is considered to be a generally beneficial land use in the Region's hill country due to its ability to facilitate the long-term stabilisation of land subject to an elevated risk of accelerated erosion*. However, forestry* needs to be prudently managed, in a manner consistent with industry best practice, to ensure that sustainable land use is realised and off-site adverse effects are minimised.*

(e) **Cultivation***

Cultivation does not generally cause soil erosion problems within the Region. However, cultivation* undertaken adjacent to water bodies has the potential to result in increased sediment loads to those water bodies unless appropriate industry best practice sediment run-off control measures are implemented.*

16. Accelerated erosion is a consequence of unsustainable hill country land use. The definition of Accelerated Erosion in the DV POP is as follows:

"Accelerated Erosion means erosion which is caused or accelerated by human activity".

17. The DV POP summarises in paragraph 5.1.2 that the Region has approximately 274,000 ha of hill country land at risk of moderate-severe erosion. 116,000 ha of which were affected by the 2004 floods. This is confirmed in the paper *"Highly Erodible land in the Manawatu-Wanganui region"* by Dymond, J and Shepard, J. 2006.

"The 2,220,000 hectares of the Manawatu-Wanganui region contains 273,000 hectares of such highly erodible land, i.e. 12.3% of the region (TEB144)."

18. Allan Kirk states at paragraph 13 of his s42A report (TEB 164) that the estimated size of the erosion problem indicated around 3000 of the 6000 farms in the Region would likely include some areas of significant erosion.
19. Paragraph 5.1.2 of the DV POP gives a description of accelerated erosion and its causes. In summary it is often caused by clearance of woody vegetation, and earthworks such as tracking.
20. John Dymond's s42A report references the paper titled *"Validation of a region-wide model of landslide susceptibility in the Manawatu- Wanganui region of New Zealand."*¹ The introductory paragraph of this paper outlines that the historic reduction of vegetation cover on steep land has consequently increased landslide erosion, associated with large rainstorms.

¹ TEB page 131.

Additionally, repeated landsliding is gradually decreasing the pastoral productivity of hill country, jeopardising the sustainability of hill country farming and increasing sedimentation and its detrimental environmental effects on streams and rivers.

21. In summary, the paper discusses that landslides occur when the gravitational force down the hillside exceeds the shear strength of the soil mass. Hence as the slope gets steeper, the required force to maintain stability increases. With the addition of water from rainfall events, soil strength reduces thereby increasing the risk of a landslide. The paper goes further to discuss the susceptibility of landslides to human activity.
22. A key parameter for existing erosion resilience is whether there is woody vegetation present. Roots are typically stronger than soil and increase the effective strength of the soil mass. As such the removal of woody vegetation from hill country can have a direct impact on whether landslides during intensive rainfall events occur. Quinn and Allan Kirk have summarised the potential effects of sediment loss into waterways. Dr Quinn in particular has referenced the literature which discusses in more detail some of the impacts of accelerated erosion.

The key impacts of accelerated erosion are:

- (a) Sediment loss into waterbodies which can cause the following:
 - (i) smothering the beds of streams and rivers.
 - (ii) degradation of aesthetics (contact recreation).
 - (iii) infilling of spaces within bed material which can affect the feeding of aquatic species.
 - (iv) reduced visibility for sight-feeding aquatic organisms.
- (b) Nutrients entering waterways as particles of eroded sediment.
- (c) Increased deposition of sediment on the beds of streams and rivers which can lessen the effectiveness of flood protection measures (i.e. stopbanks).
- (d) Loss of riverbank stability.

- (e) Loss of biodiversity, both aquatic and terrestrial.
 - (f) Loss of productive soil which can take a number of years to recover.
23. Detailed analysis on the resultant effects of sediment entering water and the impact this can have on aquatic life, are found in the s42A report prepared by Dr Robert Davies-Colley for the Water POP reference².
24. It is acknowledged that there are other effects of accelerated erosion such as reduction in flood capacity of waterways, loss of terrestrial and aquatic biodiversity, and direct effects on the life-supporting capacity of water. However, the effects of sediment entering water and the varying impacts this can have is the key driver for the regulatory and non-regulatory approaches set out in the POP.

The impact of the 2004 Floods on the Manawatu – Wanganui Region

25. The 2004 floods had a devastating impact on the Manawatu-Wanganui region. In particular significant erosion on hill country took place. The 2004 floods were not the only basis for formulating the approach in the NV POP. The management of the Region's land resources had been a regionally significant issue before it was identified in the operative Regional Policy Statement in 1998. But certainly the events of 2004 highlighted the importance of sustainable land management and the direct effects that can occur if inappropriate land management practices are allowed to occur.
26. A number of the expert reports to the Plan hearings covered this issue in great detail. The reports are included in the TEB.
27. Greg Carlyon's s42A report describes the 2004 events.³

"In February 2004, the Manawatu-Wanganui region experienced one of the largest, most widespread and destructive storms in its history. Many of the region's rivers experienced floods with return periods greater than 100 years, extensive areas of the region's lowlands and many houses and townships were flooded and or cut-off by floodwaters. Road and rail links and essential services such as power, water, sewerage and telecommunications were cut for extended periods to much of the population. Significant areas of the region's hill country experienced extensive

² TEB pages 1169-1212

³ Not located in TEB.

slipping which in turn disrupted farming operations, roads, and released large volumes of silt into waterways."

28. Mr Carlyon further explains that the 2004 events would be a catalyst for change, especially around the issue of land/hill country management.
29. Much of what Mr Carlyon covers is a description of how this event led to the establishment of a governance group led by HRC. The group's objective was to develop a sustainable land use programme including funding proposals from central government. This ultimately led to \$6 million being secured over 4 years from the Sustainable Land Management (Hill Country Erosion) Framework fund.
30. Allan Cook explained how the 2004 flood events caused aggradation problems in river beds which threatened to undermine established flood protection:⁴

"Extensive investigations have been undertaken on our major river systems since the 2004 flood to accurately determine post-flood channel capacities; to determine the present standard of protection provided; and to facilitate design work for upgrade options. Some startling results have been obtained."

On the Oroua River, it has been found that the standard of flood protection, originally designed to 1% AEP, is presently as low as 10% AEP through the Kopane aggradation reach. It has been found that on average, 15,000 m³ of gravel and 15,000 m³ of silts have been deposited each year in that 15 km reach over a period of 20 years up until the 2004 flood. Furthermore it has been assessed that an additional '20-year's worth' of silt (300,000 m³) was deposited on the flood berms in the one flood event in 2004. "

31. John Dymond estimates that the cost of the 2004 floods was over \$300 million.⁵

"The February 2004 storm that struck the Manawatu, Wanganui and Tararua Districts, caused erosion in the hill country, and flooding, sedimentation and stream course changes in the lowlands. Damage is estimated to have cost over \$300 M."

⁴ TEB page 123.

⁵ TEB page 144.

32. There is no doubt that the events of 2004, which should not be considered in isolation, clearly showed the true impacts farming activities can have on erosion and sediment entering water if not sustainably managed.

Sustainable Land Use Initiative as a non-regulatory method addressing accelerated erosion.

33. The SLUI is the key non-regulatory method for managing hill country accelerated erosion. During the recovery from the 2004 storm events, HRC met with community leaders to address the issue of hill country and to see if agreement could be reached on a proactive way forward for managing this issue. Much of the history of SLUI's development is provided in the section 42A report of Greg Carlyon.⁶ In summary, broad agreement was reached on a number of issues and it was resolved that HRC would be the lead agency in developing a sustainable land use programme that would be voluntary.
34. Allan Kirk's s42A report summarises the early implementation of the SLUI programme.⁷

"Since the storm event of 2004 the SLU Initiative has been steadily developing and evolving to a point today where it is a major part of the Horizons work programme. Staff have been gearing up for SLUI over the last few years with the programme implementation fully starting in July 2006. At this stage Horizons had committed its own funds to the programme, and government funding wasn't finally secured until November 2007.

From the outset the programme has been targeted at land use within the Region's hill country pastoral farmland. Although other land uses are not explicitly excluded from SLUI it seems that other land uses are less likely to require the level of involvement that is brought about through a WFP exercise. So while all land (ownership and land use) is eligible, Horizons will prioritise where it will carry out the WFP process.

With the early stages of SLUI implementation having limited funding it was clear Horizons would need to prioritise resources. To deliver the WFP Horizons would need to put much more effort into a priority approach than had been the case in the past. After some refinement this has now been largely locked into place where 75% of our effort will be directed to five priority catchment areas. Ongoing monitoring of

⁶ Not located in TEB.

⁷ TEB page 161-162.

these catchments will link to State of Environment monitoring and reporting in assessing the long-term trends as a result of SLUI implementation.

The implementation and engagement process relies on other tools in the SLUI toolbox (marketing, publicity and relationship-building to raise awareness of SLUI with the potential target landowners). The engagement process largely relies upon the tried and true method of Horizons staff visiting farms and engaging with landowners. At these meetings staff can emphasize the voluntary nature of the programme and outline the risks and rewards for the individual. The buy-in to the programme by the landowner relies upon the rapport and trust built up between the parties."

35. It is important to touch on this key non-regulatory component for managing hill country erosion to provide the full picture of how HRC propose to manage this issue. While SLUI has been successful to date,⁸ SLUI is a voluntary programme which is only focussing on hill country in priority catchments. Therefore a regulatory regime is required to capture those non-priority catchments, and areas where the SLUI programme is not adopted by landowners.

Features of the Notified and Decisions versions of POP.

36. The Proposed One Plan was notified in 2007. Chapter 12 of the NV POP was entitled Land use Activities and Land-based Biodiversity. The DV POP and the reasons for the decisions were released August 2010. A table at **Appendix 2** identifies the features of the NV POP and DV POP relating to the remaining key issues.
37. In the reasons for their decision, the Hearing Panel accept the elevated risk of accelerated erosion on hill country land, but identify that the delineation of "HEL" as a tool for regulating activities on steep land is problematic:⁹

"Having reviewed the evidence, we are satisfied that there is an elevated risk of accelerated erosion on some steeper hill country land within the Region, particularly where that land is vegetated or in pasture..."

⁸ For a summary of what this success entails see Kirk SOE.

⁹ Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-15.

We acknowledge that there are a number of variables that contribute to an elevated risk of accelerated erosion including geology, soil type, slope, aspect, vegetation cover and wetness...

However, we find that the Regional Council's definition and delineation of HEL is problematic and that there are also a number of problems with Schedule A. It was produced at a scale that made it very difficult for some individual landowners to determine whether or not their land was HEL. It shaded a property as being entirely comprised of HEL if any land within the property fitted the definition of HEL. Therefore Schedule A overrepresented the actual area of HEL in the Region."

38. This led to the removal of the HEL overlay (schedule A) from the POP and any reference to it in the rule stream or RPS. I discuss my considerations of the HEL approach later in my evidence.
39. The Hearing Panel replaced the HEL approach by defining areas as "Hill Country Erosion Management Areas" which, in their view, identified land subject to an elevated risk of accelerated erosion. They have delineated these areas using pre-existing slope, an approach used by Environment Waikato in its Regional Plan. The slope of 28° has been preferred by the Hearing Panel for determining whether vegetation clearance (or new tracking) activities will need resource consent. The Hearing Panel made the following conclusions with respect to Hill Country and the change from the NV POP to the DV POP.¹⁰

"We find it is appropriate, as occurred in Schedule A as notified, to show the majority of the Region as HEL. We also find that the acronym HEL is insensitive (given its closeness to "hell"), a matter about which there was no dispute. If a slope threshold of 28° is used, we see no need to map the Hill Country Erosion Management Areas and so Schedule A can be dispensed with."

40. A second notable difference between the two versions of POP is the removal of the reference to WFBPs in the rule stream. The DV-POP now sees WFBPs only having a role in a non-regulatory capacity. The Hearing Panel's reasons for this were as follows:¹¹

"As foreshadowed in our August 2008 Chairpersons minute #3, we have decided that the SLUI programme and WFBPs should not be lined to the rules on vegetation

¹⁰ Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-16.

¹¹ Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-13.

clearance and land disturbance. Maintaining such a linkage would be problematic as the Regional Council is targeting the preparation of WFBPs to priority areas within the region...

We find it more appropriate to have effects-based rules dealing with vegetation clearance and land disturbance that treat all landowners equally."

41. The exclusion of WFBP's has led to a greater focus on the use of slope based performance standards, the merits of which will be discussed later in my evidence.
42. Another key difference from the NV POP to the DV POP is the inclusion of cultivation as an activity which can cause accelerated erosion. This has also seen the inclusion of a new rule (rule 12-3) dealing specifically with the activity of cultivation. The Commissioners chose to support the position of Horticulture NZ by excluding cultivation from land disturbance and vegetation clearance. Hence a permitted activity rule was included for cultivation within 5m of certain waterways.
43. The last key difference between the NV POP and DV POP was the change in rules for land disturbance activities. The NV POP had a controlled activity rule for land disturbance over 100m²/year per property or 1000m³/year. In the DV of the POP this was replaced with a permitted activity rule for disturbance over 2500m²/year per property. The Hearing Panel gave the following reasons for their decision:

"Having considered the evidence, we have concluded that permitted activity rules are appropriate to expressly allow large-scale land disturbance (including earthworks), forestry, and cultivation occurring adjacent to certain waterbodies. These rules are necessary so that conditions can be imposed to ensure that as far as is practicable, those land use activities do not result in the degradation of surface water bodies as a result of sediment run-off.¹²

New Rule 12-1 is a permitted activity rule designed primarily to address large-scale earthworks.Mr Bevin, the regional Council's Senior Investigator,advised is that the rule would be easier to implement if it referred to an area and not a volume. In that regard, Mr Bevin was comfortable with a 2500 m² area threshold. That is consistent with the Regional Council's submission on Rule 12-1, equating

¹² Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-19.

1000 m3 with 2,500 m2. We have accepted Mr Bevin's advice and used that threshold in new Rule 12-1.¹³

Key Issue 1 – Vegetation Clearance

Environmental Context

44. Vegetation Clearance activities are typically undertaken so that vegetated land can be cleared and used productively. It is defined in the DV POP as follows:

Vegetation clearance means the cutting, crushing, spraying, burning, or other means of removal or destruction of vegetation, including indigenous and exotic plants (including trees). **Land disturbance** means the disturbance of the land[^] surface by any means including by blading, blasting, contouring, cutting of batters, filling, excavating, ripping, root raking, recontouring, or moving or removing soil or earth. *Vegetation clearance* and land disturbance* excludes:*

- (a) *cultivation**
- (b) *forestry**
- (c) *clearance or disturbance by animals including grazing*
- (d) *activities undertaken for the sole purpose of establishing a fence line and not located within a rare habitat*, threatened habitat* or at-risk habitat**
- (e) *the maintenance* or upgrade* of existing tracks*, structures[^] (including fences), or infrastructure[^]*
- (f) *maintaining shelterbelts (including cutting of shelterbelt roots)*
- (g) *activities undertaken for the purpose of protecting, maintaining or enhancing areas of rare habitat*, threatened habitat* or at-risk habitat**
- (h) *clearance of vegetation that is fallen or dead and not located within a rare habitat*, threatened habitat* or at-risk habitat* that is forest* or scrub* in Schedule E*
- (i) *activities undertaken within the boundaries of any area of land[^] held or managed under the Conservation Act 1987 or any other Act specified in Schedule 1 to that Act (other than land[^] held for administrative purposes) that are consistent with a conservation management strategy, conservation management plan, or management plan established under the Conservation Act 1987 or any other Act specified in Schedule 1 to that Act*

¹³ Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-20.

- (j) *activities undertaken within the boundaries of the New Zealand Defence Force Waiouru Military Training Area, provided that those activities are undertaken in accordance with a management plan that has the same or similar outcome as an Erosion and Sediment Control Plan**
 - (k) *clearance of thistles, ring ferns, carpet ferns, rushes, ink weed, briar rose, barberry, introduced pampas grass (other than toetoe), mingimingi, wilding pinus species, Japanese poplar, Japanese walnut, and pest plants referred to in the Regional Council's Regional Pest Plant Management Strategy.*
45. Allan Kirk confirms that small areas of vegetation clearance are not common and have minor adverse effects on any potential sedimentation of waterways or accelerated erosion. He also notes that when small areas are cleared, they generally contain immature vegetation so the clearance tends to have nil or minor effects.

"Small areas of vegetation clearance are rare. The dominant and only infield vegetation clearance consents have been for the clearance of 'scrub' or Leptospermum ericoides and scoparium. Scrub thrives on low fertility HC LUCC V, VI, VII. These hill soils are characterised by long slopes and by slope angles greater than 25 degrees. The slopes are always well in excess of two hectares. In addition, the economics of this type of vegetation is that 8-12 year cycles of clearance are usual. After eight years, a significant area of the slope is covered with scrub that then makes the spraying or cutting a viable operation in terms of economies of scale."¹⁴

46. He further states that the effects of vegetation clearance are related to the size of the area and the impacts on slope integrity or its ability to withstand significant climatic events.

"Slopes that are at risk on hill country are large in area and are for economic reasons only cleared when there is significant vegetative cover. The hill slopes targeted for vegetation clearance are rarely less than 10 hectares."¹⁵

47. In summary, vegetation clearance is undertaken for conversion of areas to pasture for production purposes. It can be undertaken in a variety of ways as per the definition for vegetation clearance. I have found during my time processing resource consents at MWRC, that a high percentage of

¹⁴ Kirk SOE at paragraph 13.

¹⁵ Kirk 'will say' statement at point 3.

vegetation clearance consent applications are for aerial spaying clearances. Allan Kirk's evidence is that it is usual for an operator to undertake this clearance every 8-12 years, and that clearance of areas less than 10 hectares is unusual in aerial based spraying.

48. A second less intensive form of vegetation clearance which has been predominant in the Region is the clearance of vegetation associated with wind farm development (large scale land disturbance is also undertaken for these developments). Often this vegetation is a mixed bag and sometimes contains indigenous species. HRC has processed a number of consents for windfarms which included the removal of vegetation.
49. It follows that any method adopted for the management of vegetation clearance activities will need to be wide enough to cover other large scale clearance such as windfarm developments.
50. Prior to the notification of the Proposed One Plan, the management of the land resource and the issue of accelerated erosion was managed under the operative Land and Water Regional Plan 2003. This Plan contains a number of regulatory and non-regulatory methods for managing accelerated erosion.

Operative Rule Framework

51. The existing rule framework in the Land and Water Regional Plan that is relevant to accelerated erosion is the removal of vegetation, largely by aerial based spraying. However, other means of vegetation clearance are applicable to these rules.
52. LM Rule 2 is a Permitted activity rule and is the starting point for any vegetation clearance or land disturbance activities, other than activities on a coastal foredune. The key performance standard for vegetation clearance was area based and set at 2ha.
53. In my experience, in most circumstances aerial based vegetation clearance exceeds 2 hectares per annum in which case consent is required under Land and Water Regional Plan as a Restricted Discretionary activity determined under part 104C of the Resource Management Act, 1991.

54. The specific consent process outlined below, which is for the clearance of vegetation by aerial spraying, was adopted in December 2009. The consent process/ reporting was simplified. The change was brought about after a period of intensive monitoring of hill country activities found that a number of activities were being carried out unlawfully. While the rule framework was some 6 years old, and the POP had been in effect for over two years, it was apparent that landowners were not seeking the necessary permissions to undertake these activities.
55. The reasons for this are not fully known. One can only speculate as to why people were not applying for the necessary consents. It may have been unawareness of the rules, ignorance or blatant disregard. In any event these activities were being undertaken and HRC was not aware or at least did not have the opportunity to ensure significant adverse effects were avoided or mitigated. I suspect that while not the only reason, the consenting process would have been expensive in that expertise was likely to be required and was a significant factor in landowners not wanting to go through the process.
56. In an attempt to remedy this situation, HRC sought to introduce a more user friendly consent process whereby the greater certainty was provided to landowners, and the process of gaining consent was relatively straight forward.
57. It is a collaborative approach between HRC and the landowner. The applicant is required to contact HRC and provide the consents administration team with a basic run down of their proposed activity. From here the applicant is referred to a LMO who then makes arrangements to visit the site and meet with the landowner to discuss their proposal. The LMO then coordinates the process and undertakes a site visit. For all locations applied for a visit is undertaken. Once the LMO visits the proposed clearance area, the effects are assessed, in particular the effects the clearance will have on the risk of erosion and sediment entering water. This step defines those areas that would be susceptible to soil erosion, identifies rare and threatened habitats and the potential effect on waterways.
58. When on site the LMO highlights buffer zones, watercourses, rare and threatened or at risk habitats. These are highlighted on a draft aerial map

which is produced by the LMO prior to the site visit. The LMO discusses the conditions of consent with the applicant and explains the aerial spraying exclusion zones. The applicant then completes the application form, agrees to the conditions of consent, exclusion zones and map.

59. The conditions of consent are added to the back of the application form. These standard conditions appear on every aerial spraying consent. Conditions include restricting the aerial spraying to the approved areas illustrated on the map, no direct spraying on rare and threatened or at risk habitats, prevention of spraying within 20 metres of a waterbody and within 50 metres of any rare or threatened habitat.
60. On returning to the office, the LMO has the map digitised and forwarded onto the Consents Team so it can be approved concurrently with the application. If there was ever an instance that the applicant didn't agree to the special conditions or mapped exclusion zones they would then have to submit a full consent application to HRC. This application would contain the application form and an assessment of environmental effects. There has never been an applicant that has disagreed with conditions of these consents in the HRC region.
61. 114 aerial spraying consents have been applied for and issued since the process started in December 2009. HRC found it to be a highly effective 'consent in the field' process where the focus is on customer relations and educating the landowner on what is sustainable and unsustainable vegetation clearance. The key part to this process is the identification of the areas that are not to be cleared. Excluding these areas by way of the consent conditions which are linked to the produced map, provide real certainty to the consent holder of what is and isn't to be cleared.
62. Allan Kirk who is a LMO for HRC has a key role in this process. He has made the following comments:

"The existing consent process for land use vegetation clearance is well established around the two hectare threshold and is widely accepted by landowners. It has evolved to include checks and balances within the process maintaining the integrity and its consistency across the region."¹⁶

¹⁶ Kirk 'will say' statement at point 3.

Environmental Risks

63. The removal of woody vegetation on hill country can have significant impacts on water quality by causing sediment to enter waterways. If undertaken unsustainably, it can lead to accelerated erosion, the effects of which have been discussed earlier in my evidence. Allan Kirk discusses the environmental risks that arise from clearance on steep hill country that cannot be sustained.

"The hill country soils have all been developed under a forest cover. The subsequent removal of the forest cover has limited the ability of the soils to withstand climatic events such as the storm event of 2004. These cleared soils are more susceptible to accelerated erosion."¹⁷

64. It follows that a rule framework is required to manage activities that can cause accelerated erosion. I have discussed the SLUI programme, being the key non-regulatory method used to manage hill country erosion earlier in my evidence. I consider that the SLUI programme needs to be applied along with the regulation of activities to ensure that the environmental risks are addressed. Furthermore we have seen the consequences of the 2004 storms and the devastation and costs such events can cause. Failure to proactively manage the issue of vegetation clearance will exacerbate risks and cause further significant degradation.

Appropriate Regulatory Response

65. A non-regulatory and regulatory approach has been adopted to manage this issue. The non-regulatory method is the SLUI. Allan Kirk has provided evidence on this issue to assist the Court with understanding the overall approach to managing accelerated erosion. This non-regulatory approach is not debated in this proceeding. It is explained to give the Court a full picture of the overall management approach.
66. The regulatory approach is the rule suite provided in Chapter 12. The use of rules to manage vegetation clearance is unchallenged. The points of contention are around specific rules and their respective performance standards. Specifically Rules 12-4 and 12-5 of the DV POP which require

¹⁷ Kirk SOE at paragraph 9.

resource consent for vegetation clearance in a Hill Country Erosion Management Area which is defined as follows:

Hill Country Erosion Management Area means any area of land[^] with a pre-existing slope* of 28° or greater on which vegetation clearance*, land disturbance* forestry* or cultivation* is being or is to be undertaken.

67. DV POP Rule 12-4 sets out that vegetation clearance in these areas is a Restricted Discretionary activity. This rule applies to vegetation clearances that:
- (a) are undertaken within a *Hill Country Erosion Management Area*;
 - (b) are within 5 metres of a river, wetland or bed of a lake;
 - (c) involve the clearance of 1 ha or greater in a 12 month period.
 - (d) involve new tracking.
68. If the activity is excluded from that activity description, no resource consent is required in accordance with s.9 RMA. If the clearance is undertaken within a coastal foredune, the activity passes to Rule 12-5 which is the catch-all rule and has the full Discretionary classification.
69. The key difference between the two versions of POP is how the rules address the clearance of vegetation on steep land. Where the NV POP regulates vegetation clearance on delineated areas of Highly Erodible Land, the DV POP regulates vegetation clearances above a 28° pre-existing slope.
70. I have summarised the Hearing Panel's reasons for this change earlier in my evidence.¹⁸ But to clarify, they considered that use of HEL was problematic given the scale of the Schedule A map. Additionally, they considered that delineating the areas subject to elevated risks of accelerated erosion was better achieved through the use of a pre-existing slope as a simple regulatory threshold.
71. The two approaches (the NV-POP and DV-POP) are seeking to regulate and control the same activities to manage the same environmental risk. The
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question is which approach is most appropriate in achieving the purpose of the RMA.

72. Having being required to implement both rule streams, I consider I am well placed to provide an opinion on which approach is preferable in terms of its practicality, certainty and efficiencies. Below is my evaluation of the two options described above, and a third option which is the regulatory approach of the operative Land and Water Regional Plan.
73. **Highly Erodible land** – The NV POP used the HEL overlay which was appended in Schedule A. Schedule A contains a map of the Region at a 1:50,000 scale. It showed all land parcels in the region which contained land which was defined as highly erodible. This was regardless of whether the land parcel only contained a small area that was highly erodible.
74. This method was difficult to administer. Often landowners who contact HRC to enquire about whether consent was needed for an activity they wished to undertake. It was difficult in practice to establish whether the area of land they intended to clear was in or out of the highly erodible area. A great deal of information was required from the landowner who often did not have the technology or resources to provide this information. Ultimately the level of certainty was very low. It is preferable that the exercise of determining compliance with a Permitted activity rule can be done so with little cost. I consider cost effectiveness/certainty to be an important component of Plan implementation.
75. If the areas of HEL could be more accurately defined, or if there was a more user friendly way of defining the areas which are at a greater risk of accelerated erosion, the use of an area based threshold would be appropriate.
76. **Slope** – The DV POP used a slope performance condition to determine whether resource consent is required. As with the HEL map this has proved difficult to administer. Often a land owner wishes to clear vegetation over a large area of land which has variable slopes and they often do not know the slope of the land as they do not have the expertise to determine this. This creates the difficult situation of some areas of the land requiring consent and others not. Furthermore it is untenable to determine slope from the office

via a desktop exercise. So the question of whether consent is needed cannot be easily answered.

77. Of the two options above, I favour the HEL map approach from the NV POP. This is not to say it is without its faults. However, having the areas subject to a greater risk of accelerated erosion pre-determined in my view is much more useful than having to work it out on site once an inquiry has been made. This is the issue with using a stand alone slope based threshold. It is not simple to determine because the information is not readily available and because slope across a parcel of land is highly variable, is impractical.
78. **Stand-alone Area Based** - There is a third option to consider. The use of a stand alone area based performance standard. Both the NV POP and DV POP are reliant on slope, although slope is not the only consideration for identifying HEL in the NV POP.
79. The use of a stand alone area based threshold is the current approach of the operative Land and Water Regional Plan (2003). The area based trigger applies to any vegetation of a contiguous area of greater than 2 hectares, irrespective of slope. In my experience, this is the most easily administered rule out of the three options. I have also found that when assessing the Plan provisions the general public themselves have found it easier to determine if they require resource consent. This has the added benefit of allowing them to factor in costs to the activity they wish to undertake. This information (plan provisions and consent processing fees) is readily available on the website allowing people to access the information for themselves.
80. One potential limitation of the area based threshold is that some vegetation clearance activities that have minor effects will be required to go through the consent process. While this maybe so, the reason for this approach is to capture those activities that have potential for more than minor effects. There will be at times activities which do have minor effects. That is a reality of most rules streams. Furthermore the consent approval process is fast and inexpensive. If there are areas where the activity will be undertaken will little or no effects, then no conditions will be imposed, and there will be no costs, other than the administration costs of obtaining the consent.

81. Another potential limitation of the area based approach is it could allow for small clearances (below the annual threshold) on steep land as a permitted activity where effects could be more than minor. Vegetation clearance on steep land rarely occurs in less than 10 hectare blocks.¹⁹ I am therefore satisfied that using an area based threshold, provided it is set low enough, will be effective in capturing those activities with the potential to have more than minor effects, while allowing some activities which will have minor effects.

Preferred approach

82. When comparing the three approaches, I accept that the rule streams in the NV POP and DV POP target for regulation those areas of hill country where there is at greater risk of accelerated erosion. However, the practical efficiency for the landowner and consent officers of either of these approaches is not ideal. The standalone area based threshold is the most appropriate option because:
- (a) It provides greater certainty to plan users.
 - (b) It provides greater cost efficiency in the consenting process.
 - (c) It will capture the vegetation clearance activities taking place on steep land which create the most risk of accelerated erosion.
83. The area based threshold I support is 2 hectares. This is consistent with the operative Land and Water Regional Plan. Both the NV POP and DV POP use 1 ha in their respective rule streams. The Hearing Panel do not give a reason for selecting 1 ha as a threshold. Allan Kirk has stated that clearance of less than 10 ha is uncommon and that the effects of small scale clearance are minor. He has stated that a 2 ha maximum threshold would capture all the areas of vegetation clearance that are likely to have an effect on soil stability and sedimentation.²⁰
84. My recommendation for a performance standard 'setback' from certain waterways is evaluated in the section of this evidence addressing riparian margins.

¹⁹ Kirk 'will say' statement at point 3.

²⁰ Kirk 'will say' statement at point 3.

85. In summary, I support a rule framework with the following key features:
- (a) a Permitted activity rule that requires resource consent where:
 - (i) vegetation clearance is undertaken over an area greater than 2 hectares per property in a 12 month period.
 - (ii) vegetation clearance is located within 5 metres of a lake, permanent river, or a river with an active bed with greater than 1m; or within 10m of a wetland and a Schedule AB trout spawning site.
86. My recommended rule stream is attached as **Appendix 1** of my evidence.

Key Issue 2 – Land Disturbance

Environmental Context

87. Land disturbance activities are undertaken in a variety of forms. They include large scale activities such as wind farm developments and multi lot subdivisions, earthworks and road construction to the very smallest of activities such as single lot subdivisions, site preparation, flood protection works and tracking. Land disturbance can occur on both steep and flat land. Land disturbance is defined in the DV POP as follows:

***Land disturbance** means the disturbance of the land[^] surface by any means including by blading, blasting, contouring, cutting of batters, filling, excavating, ripping, root raking, recontouring, or moving or removing soil or earth. Vegetation clearance* and land disturbance* excludes:*

- (l) *cultivation**
- (m) *forestry**
- (n) *clearance or disturbance by animals including grazing*
- (o) *activities undertaken for the sole purpose of establishing a fence line and not located within a rare habitat*, threatened habitat* or at-risk habitat**
- (p) *the maintenance* or upgrade* of existing tracks*, structures[^] (including fences), or infrastructure[^]*
- (q) *maintaining shelterbelts (including cutting of shelterbelt roots)*

- (r) *activities undertaken for the purpose of protecting, maintaining or enhancing areas of rare habitat*, threatened habitat* or at-risk habitat**
 - (s) *clearance of vegetation that is fallen or dead and not located within a rare habitat*, threatened habitat* or at-risk habitat* that is forest* or scrub* in Schedule E*
 - (t) *activities undertaken within the boundaries of any area of land^ held or managed under the Conservation Act 1987 or any other Act specified in Schedule 1 to that Act (other than land^ held for administrative purposes) that are consistent with a conservation management strategy, conservation management plan, or management plan established under the Conservation Act 1987 or any other Act specified in Schedule 1 to that Act*
 - (u) *activities undertaken within the boundaries of the New Zealand Defence Force Waiouru Military Training Area, provided that those activities are undertaken in accordance with a management plan that has the same or similar outcome as an Erosion and Sediment Control Plan**
 - (v) *clearance of thistles, ring ferns, carpet ferns, rushes, ink weed, briar rose, barberry, introduced pampas grass (other than toetoe), mingimingi, wilding pinus species, Japanese poplar, Japanese walnut, and pest plants referred to in the Regional Council's Regional Pest Plant Management Strategy.*
88. It is important to note that the DV POP definition of land disturbance does exclude cultivation which is dealt with separately in the POP and in my evidence. This was not the case in the NV POP which captured cultivation as a land disturbance.
89. Land disturbance is a key activity that can increase the risk of accelerated erosion. The area of the Region at the greatest risk of moderate-severe erosion is land with a steep profile, as supported by the technical evidence and noted earlier in this evidence. However, land disturbance activities can also cause significant adverse effects on flat land adjacent to water bodies.
90. The typical type of land disturbance that takes place on steep land is tracking activities and, particularly in the Manawatu-Wanganui Region, windfarm developments. In the Manawatu-Wanganui Region there have been a number of windfarm proposals over the last 12 years. Each of these have or will contain substantial earthworks over a large area, the largest being over 30,000 hectares (proposed Castle Hill windfarm near Castlepoint by Genesis Energy Limited).

91. Issue 5-1 (c) of the DV POP deals with large scale land disturbance activities and reads as follow:

"Large-scale land disturbance including earthworks

Most other land use activities are not of a sufficient scale to have significant regional adverse effects. However large-scale earthworks related to urban expansion and other development can have significant adverse effects on water bodies if sediment from these earthworks is poorly managed."

Environmental Risks

92. The risks of poorly managed land disturbance activities are the same as for vegetation clearance and cultivation activities. The risk is for exposed loose soil becoming entrained in stormwater and entering surface water bodies. This can cause the effects discussed earlier in my evidence.
93. Allan Kirk summarises that land disturbance, including new tracking, destabilises hill slopes and captures and channels water, potentially affecting and accelerating erosion. He goes further to say that small land disturbances (under 2500 m²) will potentially have escalating levels of effects in excess of their initial scale and also have a high potential for accelerated erosion.²¹
94. Greg Bevin in his s42A report to the POP hearings²² summarised his experiences from compliance monitoring consented earthworks activities. He has observed that earthworks associated with infrastructure projects generally employ a raft of measures which control erosion and sediment release. But despite the measures used, the key objective is that sediment release from the site is minimised to a point where the effects on the environment are minimised.
95. When posed with the question by the Hearing Panel, do large scale earthworks outside the hill country cause concern for HRC compliance, Mr Bevin, Senior Investigator for MWRC replied:

"In short the answer to this question is yes. For example, the recent industrial developments, i.e. the North East Industrial Development and the

²¹ Kirk SOE at paragraphs 27-34.

²² Not located in TEB.

Progressive Enterprises site, in the vicinity of Railway Road Palmerston North have been the subject of concern for Horizons Regional Council. Both sites are characterised by a relatively flat topography, but have had significant problems in managing sediment discharges to an unnamed tributary of the Mangaone Stream."

96. The last paragraph of Paragraph 5.1.2 of the DV POP reads:

"Insufficient attention to batter slopes, stormwater management, fill compaction, overburden containment, debris clearance and revegetation can significantly increase sediment loads in adjoining streams or sediment discharges onto neighbouring properties."

97. In summary, all aspects of land disturbance activities have the potential to result in sediment entering water if managed poorly. The risk increases with scale, hence the division between small and large-scale, and with other considerations such as slope, proximity to water, soil type, and duration of earthworks and the timing of works.

Appropriate regulatory response

98. Earth worked sites require erosion and sediment control to prevent environmental effects. The extent of the erosion and sediment controls required will depend on the risk the activity poses. This in my view is the main driver behind regulating land disturbance activities. It is acknowledged that there is a risk, and the issue is setting out a rule framework that effectively provides for management of those effects.
99. There are three sub-issues relating to changes made by the DV POP. The appellant Fish & Game is seeking a return to the NV POP for this rule stream so it is necessary to consider the options, and the differences between them. The table at **Appendix 2** also provides a summary of the key differences. The key differences are as follows:
- (a) The NV POP regulated, in some form, land disturbance of any scale. The DV POP only regulates 'large scale' land disturbances greater than 2,500m².

- (b) The NV POP provided that all land disturbances affecting area over 100m² or 1000m³ p/y were classified as, at least, controlled activities (unless in compliance with Whole Farm Business Plans). The DV POP (as in (a)) does not regulate 'small scale' land disturbances at all, and provides for large scale disturbances as Permitted activities.
 - (c) The NV POP addressed the issue of land disturbances on hill country by providing for land disturbances on Highly Erodible Land as a Discretionary activity. The DV POP addressed the same issue by providing for large scale land disturbances on land with a pre-existing slope greater than 28° as a Restricted Discretionary activity.
100. Essentially, the rule framework for land disturbance has entirely changed, and in my opinion the differences identified above require close analysis. The key sub-issues are:
- (a) Whether large scale land disturbance is appropriate as a Permitted activity?
 - (b) Whether small-scale land disturbances should be regulated?
 - (c) How (if at all) should the rules address land disturbance activities on steep land?
101. My opinion on sub-issue (a) is that the environmental risks posed by large-scale disturbance on flat land, specifically larger scale activities, are high enough that consent for some activities should be required. Activities such as large scale earthworks and subdivisions on flatter land pose a significant risk of sediment entering water where water bodies are nearby. Reliance on a Permitted activity rule and performance standards is not appropriate to adequately manage the risk posed.
102. I therefore propose a Controlled activity rule for large-scale land disturbance as this will still provide certainty to potential applicants that consent can be obtained. Requiring an applicant through a consent process ensures that the consent authority has the ability to assess and impose conditions to avoid and mitigate effects.
103. There are other reasons why requiring a consent for large-scale land disturbance is in my opinion necessary. With a Permitted activity there is no

process whereby the erosion and sediment measures are tested and assessed or peer reviewed. Under the DV POP provisions, the requirement is only that a management plan be submitted. This would lead to the situation where a substandard plan is submitted and there is no mechanism for refinement or improvement. Additionally the requirement to submit the plan only 48 hours before the activity commences leaves insufficient time to address any concerns HRC may have. It also creates a liability issue for HRC if they do not have the resourcing to review the management plan. If no response is received it creates the false impression that the management plan is accepted by Council. Lastly with any Permitted activity there is no ability to cost recover for the time assessing and reviewing the management plan. They are often comprehensive and require sufficient time to undertake a thorough check. Not being able to cost recover leaves the costs to fall to the general ratepayer. This in my opinion is inequitable.

104. A more appropriate approach would be to require a plan to be prepared by an appropriately qualified person and to be submitted to HRC for technical approval prior to the works being undertaken. This would allow HRC to assess and ultimately validate the plan, thereby providing certainty that the mitigation measures to be imposed will be sufficient. This can be achieved through a Controlled activity rule.
105. The reasons for the decision by the Hearing Panel find that: "*Having considered the evidence, we have concluded that permitted activity rules are appropriate to expressly allow large-scale land disturbance.*" But they do not go into further detail on the justification.
106. Relating to sub-issue (b), I consider a Permitted activity rule to be appropriate for land disturbance activities less than 2500 m² in area. I consider it more effective and consistent with the precautionary approach to manage such activities by way of a Permitted activity rule with performance standards, particularly concerning water quality standards and erosion and sediment control. This, as a minimum, requires a landowner to at least think about how they will manage the proposed works to satisfy the performance standards so that adverse effects are avoided or mitigated.
107. There are no reasons in the decisions of the Hearing Panel to explain the absence of regulation for small-scale land disturbances.

108. As a result of my analysis of sub-issues (a) and (b), I recommend inclusion of water quality performance standards for any Permitted activity on land disturbance. Section 70 of the RMA sets out that any discharge of a contaminant to land or water cannot be permitted in a rule unless appropriate standards are met. The DV POP does not include any such performance standard for the Permitted activities in Chapter 12. I therefore recommend a performance standard relating to the protection of water quality to meet the requirements of s. 70 as follows:

"any ancillary discharge of sediment into water must not, after reasonable mixing, cause the receiving water body to breach the water quality numerics for visual clarity set out in Schedule D for that water body."

109. Such a condition will offer a greater level of protection to the environment. However, I do consider this to be an ambulance at the bottom of the cliff approach, particularly for large-scale land disturbances.

110. Concerning sub-issue (c) for land disturbance activities on steep land, the DV POP uses Rule 12-4 to regulate these activities as a Restricted Discretionary activity whereas the NV POP used a full Discretionary activity rule (Rule 12-5). The key difference between the two versions is that the NV POP uses the HEL map approach to define what activities require consent whereas the DV POP uses a slope threshold (28°).

111. Allan Kirk in his evidence makes the following comments relating to land disturbance activities on steep land.

"The trigger of 2500 square metres is not technically sound and as such should also be covered by a 25 degree threshold."

"When determining risk associated with soil disturbance, the limiting or risk factor for the Hill Country slope angle is easiest. A slope angle can be easily determined and then translated into a measure of increased risk that is easily discernible by a landowner who can initiate contact with Horizons."

"Erosion events reach a maximum on Hill Country with slopes between 26 and 40 degrees. While recognising many other factors are also contributing to erosion events, the increased risk associated with slope angle is strong. In addition, slope"

*angle is widely accepted by landowners as one of the indicators of any slope's potential for failure.*²³

112. While I consider that slope is not the most appropriate option for regulating vegetation clearance, I do consider that the evidence supports a slope based component to the land disturbance framework. I recommend the inclusion of a slope based performance standard in the Controlled activity rule for large scale land disturbance (which, if triggered, would require a consent application as a full Discretionary activity) because:

(a) Slope is not disputed as a major contributing factor of accelerated erosion.

In my opinion slope is a more appropriate method of addressing the environmental risk than the other major options which are either (a) stand-alone area based threshold; or (b) the delineation of Highly Erodible land (considered in the vegetation clearance section above).

113. The DV POP uses 28° as the threshold for those activities which need consent while the NV POP refers to a slope of 20°. It is clear there is some difference of opinion around this issue. Based on Allan Kirk's evidence I consider a 25° slope to be appropriate. This will ensure activities that have the potential for significant adverse effects are captured.

114. In summary, I support a rule framework that consists of the following:

(a) a Permitted activity rule for small scale land disturbance on flat land subject to performance conditions. These conditions include the imposition of adequate erosion and sediment control measures and the requirement for any associated sediment discharge to meet the water quality numeric of schedule D.

(b) a Controlled activity rule for land disturbance over 2500 m² on flat land subject to performance standards. These standards include the requirement to prepare an erosion and sediment control plan by a appropriately qualified specialist and submit this with the consent application. It also includes the requirement to for any associated sediment discharge to meet the water quality numeric of schedule D.

²³ Kirk SOE at paragraphs 32-34.

- (c) a Discretionary activity rule for land disturbance on land over a slope of 25°.

Key Issue 3 - Cultivation

Environmental Context

115. Cultivation is the preparation of soil by agitation. It is defined in the DV POP as:

Cultivation means preparing land^ for growing pasture or a crop and the planting, tending and harvesting of that pasture or crop, but excludes:

- (a) *direct drilling of seed*
- (b) *no-tillage practices*
- (c) *recontouring land^*
- (d) *forestry**
- (e) *the clearance of woody vegetation* and new tracking* in a Hill Country Erosion Management Area*.*

116. Cultivation is most commonly undertaken on flatter land. However it is becoming more common on steeper land. Allan Kirk in paragraphs 16 and 17 of his evidence discusses this issue.

"Recent Hill Country cropping has been initiated by aerial application of herbicides on soils previously believed to be too steep or uneconomic for cultivation. However a modern approach has been developed along the line of the following: firstly allow for an aerial application of a chemical such as glyphosate which eliminates all vegetative cover including grasses, this would occur in the early spring period from August to September. This will be followed three to six weeks later with a summer fodder crop. This crop would be grazed off and in early autumn a high yielding rye clover mix would be sown as a new grass crop."

"This management tool for Hill Country cropping is a recent innovation and is reflective of low chemical and application costs. It poses a potentially significant risk to Hill Country soils due to de-vegetation and long term viability or persistence of existing high yielding grasses and clovers. "

117. In summary cultivation is mainly undertaken on flat land however, in recent times cultivation on steeper land is becoming more common with advances in technology.

Environmental Risks

118. Cultivation, like land disturbance and vegetation clearance, can have significant impacts on water quality as a result of sedimentation. If not managed sustainably, it can lead to accelerated erosion, the effects of which have been discussed earlier in my evidence.

119. Allan Kirk's supplementary s42A report discusses the risks of cultivation if managed poorly.²⁴

"Under cultivation soil structure is severely compromised to allow the development of a good seedbed for the cash or crop feed. This structural destruction allows overland flows of fine materials that are now effectively unconsolidated.

...

All cultivation places soils at extra risk from wind and rill erosion. In a soil health sense soils should be spelled, depending on soil types, every 3-7 years for a period of 3-5 years. Soil cultivation practices such as minimum tillage moisture levels and timing should all be incorporated into protecting one of our most valuable natural resources, specifically our Class I-IV soils."

120. Allan Kirk also discusses the potential risks from cultivation on hill country.

"Hill country cultivation faces the same issues and requires the same considerations. Due to slope characteristics and downstream effects, the possible resultant problems are magnified. While soils are developed from in situ materials (under natural forest), all cohesive factors within the soil are destroyed under cultivation, thus increasing the erosion risk. Soil quality issues are not as relevant on hill country as cultivation costs are more prohibitive, so cultivation cycles are less relevant."²⁵

121. The Code of Practice for Commercial Vegetable Growing in the HRC Region, February 2010 is a document prepared by Horticulture NZ. It draws together the best management practices for minimising erosion on cultivated land. It is an extremely useful document which discusses the risk of erosion

²⁴ At TEB page 189.

²⁵ As above.

from cultivation and the practices that can be taken to minimise and avoid effects.

122. The code discusses the issue of soil erosion and its management. The following statement summarises the issues the Code sets out to address.

"Several factors inherent to the business of crop production (e.g. cultivation, tractors working in the paddock, irrigation, rainfall and wind) mean there is considerable potential for soil movement and loss of important soil characteristics. When the soil moves off the property it is not only a loss to the grower, but also creates sediment which ends up on roads, in drains, streams, rivers and lakes. These flow-on impacts create costs which are borne by all."²⁶

123. In summary, cultivation has the potential to cause significant adverse environmental effects if managed poorly. The key risk is from exposed sediment entering water. This risk increases with greater slopes and closer proximities to water bodies. It is also dependant on the soil type, the area exposed and the length of time it is exposed for.

Appropriate Regulatory Response

124. Rule 12-3 of the DV POP is largely unchallenged except by Fish and Game NZ seek that Rules 12-1 through 12-6 of the NV POP be reinstated. It is important to note that in the NV POP cultivation was included under the definition of land disturbance and captured as a Discretionary Activity under Rule 12-5 where it was within specified distances from water bodies. Therefore either was permitted or required consent in the same way as any land disturbance activities were.

125. Although not providing much detail of why the cultivation activity was separated out in the DV POP, the Hearing Panel did briefly discuss their preferred approach for this activity.

"Having considered the evidence, we have concluded that permitted activity rules are appropriate to expressly allow large-scale land disturbance (including earthworks), forestry, and cultivation occurring adjacent to certain water bodies. These rules are necessary so that conditions can be imposed to ensure that as far as

²⁶ Code of Practice for Commercial Vegetation Growing at page 6.

*is practicable, those land use activities do not result in the degradation of surface water bodies as a result of sediment runoff.*²⁷

126. The major difference in the DV POP is that cultivation was provided for as a Permitted activity. The Hearing Panel drafted a rule (Rule 12-3) that allows for cultivation within 5 metres of a water body as a Permitted activity on all land whether flat or steep. For all other cultivation beyond a 5 metre distance, the activity could be undertaken as of right under section 9(2) of the RMA provided any discharge of sediment triggers the need for a consent under Chapter 13.
127. The performance conditions of rule 12-3 of the DV POP require that the activity is not undertaken in a coastal foredune area and has adequate bunding, silt traps, interception drains or other appropriate alternative methods installed prior to and maintained during cultivation to minimise sediment runoff to water. If compliance cannot be achieved, resource consent will be required for a Restricted Discretionary activity under rule 12-4. The exception is where cultivation is to be carried out in coastal foredune or a rare, threatened or at risk habitat in which case, full Discretionary consent is required under rule 12-5 or 12-6 respectively.
128. The changes in the DV POP from the NV POP raise two sub-issues. The first is whether a Permitted activity rule is appropriate within 5 metres of a water body or whether it should apply to all areas but be restricted within 5 m of a water body? The second is whether cultivation on steep hill country should require consent?
129. Dealing with the first question, Dr Quinn's evidence on riparian margins indicates that there is a significant benefit for establishing and maintaining riparian margins, in particular for the minimisation of sediment entering water as a result of both natural and accelerated erosion processes.
130. Dr Quinn concludes that the use of 5-10 metre setbacks will reduce major disturbances in the riparian area, raise awareness of the need to treat these areas carefully and provide a platform for related activities required for development of effective buffers.²⁸

²⁷ Decisions on submissions to the POP Volume 1 – Reasons for the Decisions at page 4-19.

²⁸ Quinn SOE at paragraph 18.

131. Allan Kirk also refers to cultivation and the use of riparian zones in his evidence:

*"Cultivation has similar concerns to vegetation clearance in terms of riparian zones and sedimentation. Again the lower order and even ephemeral streams have a disproportionate effect on higher order downstream water quality. In addition they (the lower order streams) also rely on the voluntary cooperation of landowners for their protection. A five metre riparian zone is effective in terms of riparian protection for cultivatable soils on LUC I, II, III, and IV."*²⁹

132. It follows that riparian margins have an important function and the protection of these margins from land use activities such as cultivation should be a priority. This is to ensure that water bodies receive good protection from significant adverse environmental effects.
133. It is therefore my opinion that cultivation within a 5 metre distance from a water body, or 10 metres from a higher valued water body should not be allowed to occur as of right and that consent should be required so that an adequate assessment of effects can be carried out. Consent should be required as a Restricted Discretionary activity. It is important to note that this approach of requiring setbacks from water bodies is consistent with the land disturbance and vegetation clearance rules I support. I consider the risk of adverse effects too great to allow activities within this area to occur as of right.
134. Regarding cultivation in all other areas, including steep hill country, I consider it appropriate to allow this to occur as a Permitted activity provided performance standards are met. If these performance standards cannot be achieved, resource consent will be required as a Restricted Discretionary or Discretionary activity, depending on the specific standards that are breached.
135. Dealing specifically with cultivation on steep land hill country, there is limited technical evidence on the risks of this activity as it appears to be relatively new. However in principle, the steeper the land where soil is exposed the greater the risk of sediment entering water and causing adverse effects. It is a similar issue to land disturbance and vegetation clearance on steep land.

²⁹ Kirk 'will say' statement at Point 4.

These activities have been captured by rules using slope and area based triggers in the DV POP. The Hearing Panel do not discuss why cultivation on steep land was not covered. Perhaps little was made of this issue at the time of the hearings.

136. One last issue is that Rule 12-3 in the DV POP provides for is the ancillary activity of discharging sediment into water. This is the same as for the land disturbance permitted activity rule. I have discussed the merits of including a performance standard to address water quality in my evidence in the section Key issue 2 – Land Disturbance. The need to include such a performance standard is the same for cultivation activities to meet section 70 requirements of the Act and to provide greater protection to the environment.
137. In summary, I support a rule framework that consists of the following:
- (a) a Permitted activity rule for all cultivation with performance standards. These standards require that no cultivation is undertaken within 5 metres of a lake or the bank of a river that is permanently flowing or has an active bed width greater than 1 metre, or within 10 metres of a wetland or site valued for trout spawning. They also include the requirement to for any associated sediment discharge to meet the water quality numeric of schedule D and the requirement to install and maintain appropriate sediment runoff control measures to minimise sediment run-off to water.
 - (b) a Restricted Discretionary activity rule for any cultivation activity that cannot comply with the Permitted activity performance standards.

At this stage I do not support a rule requiring consent for cultivation on steep land. At present I am not convinced that this is a significant issue that requires further regulatory intervention. However should further evidence be provided in the exchange process or technical caucusing which shows there to be an issue, it may be appropriate to include a rule that covers cultivation over a particular slope.

Key Issue 4 – Riparian Margins

Environmental Context

138. The debate on this is about the most appropriate width of a riparian margin setback performance condition. There is no debate that I am aware of in the technical evidence that the maintenance of riparian zone performs an important role in the avoidance of sediment loss into waterways. The issue is common to each of the land disturbance vegetation clearance, and cultivation rules. While the cultivation rule in the DV POP permits cultivation within 5m of waterways, there is an argument that the risks of sediment loss into waterways is such that the activity should be subject to a setback.
139. The Auckland Regional Council Technical Publication 350 – *Review of Information on Riparian Buffer Widths Necessary to Support Sustainable vegetation and Meet Aquatic Functions* – August 2000 provides a comprehensive definition of what is a riparian buffer zone (paragraph 3.1).
- "The riparian zone generally encompasses the vegetated strip of land that extends along streams and rivers and is therefore the interface between terrestrial and aquatic ecosystems (Gregory et al. 1991, Martin et al. 1999). In addition to streams and rivers, the definition of riparian zones in the literature often includes the banks of lakes, reservoirs and wetlands."*
140. Paragraph 3.1 of that publication goes further to discuss the vegetation and soil types common and the benefits these areas provide for habitat diversity and water quality.
141. Dr Quinn provides a useful explanation of the purpose of riparian margins:³⁰
- "Riparian "buffers" are areas of the riparian zone managed to reduce the effects of land use activities on surface water. The intimacy of the riparian zone and surface waters means that its management can have a disproportionately large influence relative to the area of land it occupies in the catchment on stream habitat (e.g., shade and associated temperature, instream plant growth, cover for fish, and input of leaf litter, wood and terrestrial food resources for fish), channel morphology, stream bank stability, and contaminant inputs (Lowrance et al. 1997)."*
142. It is clear that riparian zones perform a range of environmental functions, and their functions are not limited the prevention of accelerated erosion or sediment control.

³⁰ Quinn SOE at paragraph 5.

143. Allan Kirk at paragraphs 37 and 38 of his evidence provides useful background about how landowners deal with and develop riparian margins. Based on these comments it does appear that some landowners are proactive and aware of the benefits of riparian margins.
144. It is apparent from this evidence that the maintenance of an effective riparian margin relies largely on the interactions and relationship between HRC and landowners. Where the performance of riparian margins relies not solely on exclusion of activities, but active maintenance (e.g. fencing, appropriate planting) then it is important that the relationships between LMO's and landowners are retained.

Environmental Risk

145. The environmental risks from not having effective riparian margins, in the context of accelerated erosion, are related to sediment and other contaminants entering water. Riparian margins provide an effective mitigation measure against activities which can increase the risk of accelerated erosion.
146. Dr Quinn discusses the protection riparian margins provide:³¹

"Riparian buffers have the potential to protect aquatic values by:

- (a) reducing soil disturbance in the area that is closest to the stream and therefore likely to result in contaminant input to surface water during runoff or flooding events;*
- (b) if appropriately fenced, preventing direct input of livestock excreta (and associated sediment, nutrients, pathogens and livestock medicinal residues) to the surface water and the riparian area, preventing livestock treading damage to the streambanks and riparian areas, avoiding compaction of riparian soils (reducing infiltration of runoff), and eliminating grazing damage to riparian vegetation and associated effects on stream bank stability, water quality and habitat functions (e.g., (Belsky et al. 1999, Nguyen et al. 1998, Rutherford & Abernethy 1999, Trimble & Mendel 1995, Williamson 1994, Williamson et al. 1996));*
- (c) reducing input to surface water of contaminants in surface runoff (particularly sediment, associated nutrients and pathogens) by providing an*

³¹ Quinn SOE at paragraph 13.

area of dense vegetation and/or litter and uncompacted soils (encouraging infiltration) that enhance trapping of particulates via physical, chemical and biological processes of deposition, filtration, infiltration, precipitation adsorption, biochemical uptake and removal (e.g., (Lowrance et al. 1997, Smith 1989, Yuan et al. 2009);

- (d) *reducing input to surface water of contaminants in shallow subsurface groundwater flow by enhancing plant uptake and microbial denitrification (e.g., (Cooper 1990, Gilliam 1994, Groffman et al. 1996, Matheson et al. 2002);*
- (e) *if appropriately vegetated, providing stream and riparian habitat conditions that are similar to those in naturally vegetated catchments and so maintaining near natural conditions (e.g., of lighting, temperature, litter input, instream cover for fish) that enhance indigenous biodiversity (e.g., (Boothroyd et al. 2004, Collier et al. 1995a, Jowett et al. 2009, Meleason & Quinn 2004, Quinn, J.M. et al. 2004, Quinn, J.M. et al. 2009, Quinn, J.M. et al. 1992, Rutherford et al. 1999).*
- (f) *influencing the timing and duration of local and downstream flooding via the effects of vegetation type on the hydraulic roughness of floodplain areas inundated during floods. Sedges, shrubs and trees are stiffer and taller than grasses and can therefore slow the downstream passage of a flood wave, potentially reducing the peak flow/water level downstream (Anderson et al. 2006, Coon 1998)."*

147. Dr Quinn discusses further in paragraph 9 the impacts of increased sediment loads in water bodies.

"Sediment loss to waterways is a natural process but accelerated levels of loss can degrade aquatic values in several ways (Clapcott et al. 2011, Ryan 1991, Waters 1995). Excessive sediment impacts including degradation of aesthetics (water clarity and deposits, e.g., (Davies-Colley, R. J. et al. 1993)), flood flow conveyance (via channel infilling), reservoir and estuary volume, water quality and biodiversity. Biodiversity is degraded via effects including reduced instream primary production due to light attenuation in the water column (e.g., (Davies-Colley, R. J. et al. 1992), infilling of the hyporheic (within gravel) spaces with flow on effects to the hyporheic fauna (e.g., (Boulton et al. 1997) and spawning habitat for some fish species, including trout, smothering of the streambed by sediment deposits (e.g., (Clapcott et al. 2011, Matthaei et al. 2006, Sutherland et al. 2010)), and reduced visibility for sight-feeding aquatic organisms (especially fish and birds). Some migratory fish species actively avoid turbid waters (Rowe et al. 2000). Sediment inputs to surface

water can also convey varying levels of attached nutrients (particularly phosphorus), metals, pathogens and agrichemicals that may act as pollutants in their own right."

148. In paragraph 10 Dr Quinn explains how riparian zones function to minimise sediment entering water. In summary they reduce input to surface water of sediment by via physical, chemical and biological processes of deposition, filtration, infiltration, precipitation adsorption, biochemical uptake and removal.
149. Lastly in paragraph 13 he summarises that recent international research on filter-strip buffers found that the sediment trapping efficiency was at least 80% for all buffer widths of greater than approximately 5 m and that buffers wider than 6 m had slightly greater (+ c. 12%) sediment removal efficiency than 4-6 m wide buffers and buffers on steeper slopes (> 5%) were slightly less (up to 10%) efficient than those on lower slopes (<5%).
150. Dr. Quinn's evidence shows that there is indeed a significant benefit for establishing and maintaining riparian margins, in particular for the minimisation of sediment entering water as a result of both natural and accelerated erosion processes.
151. A secondary issue with the provision of riparian margins is the benefits it provides to biological diversity and habitat interaction across the terrestrial and aquatic interface. There is evidence which supports the retention of riparian margins because of the benefits it provides.
152. Allan Kirk in paragraph 25 of his evidence states the following:

"Riparian vegetation can serve a number of functions depending on wide range of factors. The development of riparian zones and the planting of riparian vegetation can serve to act as bio-filters, ecological restoration, in-stream shade and temperature control, habitat, aesthetics and organic inputs."

153. Dr. Quinn's evidence at paragraph 5 also references Lowrance et al 1997 and describes some a number of other benefits that riparian vegetation provide:

"The intimacy of the riparian zone and surface waters means that its management can have a disproportionately large influence relative to the area of land it occupies in the catchment on stream habitat (e.g. shade and associated temperature,

instream plant growth, cover for fish, and input of leaf litter, wood and terrestrial food resources for fish), channel morphology, stream bank stability, and contaminant inputs (Lowrance et al. 1997)."

154. I have discussed this point to be clear that riparian margins are not only about sediment retention. Although sediment loss is the issue in Chapter 5 that these rules were designed to address, and several of the other functions of riparian margins are addressed through other rules and methods of the plan (e.g. Schedule E) it is important to appreciate that there are other benefits from establishing and maintaining these areas.
155. This consideration is reinforced by Ministry for the Environment commentary on the National Policy Statement for Freshwater Management 2011 which provides support for vegetation clearance controls to be integrated with in-stream outcomes in wider sense:

"Objective A1

To safeguard the life-supporting capacity, ecosystem processes and indigenous species including their associated ecosystems of fresh water, in sustainably managing the use and development of land, and of discharges of contaminants.

Freshwater bodies, and the aquatic communities they support, will be variable across a region for different types of freshwater ecosystems. The level of habitat protection to safeguard life-supporting capacity will also depend on regional circumstances. Life-supporting capacity is measured through a range of indicators or parameters.

Objective A1 is a relevant consideration for all applications for resource consents, including discharge applications and land-use applications that potentially impact on freshwater quality.

The word "safeguard" requires a proactive response by local authorities determining ways to ensure, for example, "protection of freshwater ecosystems". However, the objective does not imply there would never be any change or adverse effect in a waterbody. Rather, it requires that change is proactively managed to ensure the defined objective continues to be met.

Objective C1

To improve integrated management of fresh water and the use and development of land in whole catchments, including the interactions

between fresh water, land, associated ecosystems and the coastal environment.

The objective of integrated management is integral to the NPSFM. Objective C1 recognises the interconnections between the conditions in a catchment (eg, vegetation cover, nutrient inputs, changes in soils, erosion, etc) and the condition of freshwater systems, as well as the interconnections between those systems and the receiving coastal environment. The importance of integration is supported by provisions of the RMA and specific functions for regional councils, including sections 30(1)(a), 30(1)(c), 30(1)(g) and 59, and functions for territorial authorities in integrated management of the effects of land use in section 31(1)(a)."

Appropriate Regulatory Response

156. The rule stream I have advanced on each of the key issues above (Land disturbance, vegetation clearance and cultivation) includes the provision of a 5 metre riparian margin, or more specifically, that no work can be undertaken within 5 metres of a water body without needing to obtain resource consent. For highly valued water bodies such as wetlands and rivers with trout spawning habitat, this distance has been increased to 10 metres.
157. That approach is consistent with the DV POP for vegetation clearance (and Forestry Rule 12-2), but represents a change from the DV POP from the Cultivation Rule 12-3 (Cultivation is permitted within 5m as part of the activity description), and the large scale land disturbance Rule 12-1.
158. It is my view it is appropriate to use a setback performance condition for each of the cultivation, vegetation clearance, land disturbance (and forestry) rules to protect the integrity of, and assist in maintaining the effective functions of the riparian zone. I consider it is inappropriate to permit as of right activities within the riparian zone that have the potential to compromise the effectiveness of that zone in terms of stream bank stability and sediment retention, as well as the other array of functions that it performs.
159. The rules do not require a riparian margin to be planted or managed in a particular way; rather prevents activities from being undertaken in this area as of right, to offer the greatest level of protection to the waterbody. Should a landowner wish to undertake an activity in this area, consent will be

required under Rule 12-4 as a Discretionary activity and they will need to demonstrate that the effects of clearance or disturbance or cultivation can be mitigated.

160. Dr Quinn identifies³² that some activities could be for the purpose of enhancing, or actively managing the riparian zone e.g. through the establishment of grass filter strips, or replacement of overly mature woody vegetation. Because of the close physical relationship between the riparian zone and the aquatic environment, and the critical role that it performs in the prevention of sediment loss into waterways.
161. In terms of whether 5 metres or some other distance is appropriate, I refer again to the technical evidence of Dr. Quinn. The figure at paragraph 8 of Dr Quinn's evidence suggests the optimal riparian zone width differs for the variety of functions performed by the margin. For example the diagram suggests that a generalised width to provide for wildlife habitat is 20m+. On the basis that the riparian zone provides a range of functions that may require a margin larger than 5m to be effective, there is an argument that the riparian margin setback should be wider than 5m.
162. Dr. Quinn explains at paragraph 11 of his evidence that sediment trapping efficiency was at least 80% for all buffer widths of greater than approximately 5 m. Dr Quinn concludes that the use of 5-10 metre setbacks will reduce major disturbances in the riparian area, raise awareness of the need to treat these areas carefully and provide a platform for related activities required for development of effective buffers.³³
163. I consider that a performance condition setting a 5m setback from rivers and lakes is more appropriate for the Region than a wider setback for the following reasons:
- (a) It is an adequate general width to achieve bank stabilisation and sediment trapping functions.
 - (b) It performs (if not optimally) a range of other functions that are beneficial to the natural environment.

³² Quinn SOE at paragraph 15.

³³ Quinn SOE at paragraph 18.

- (c) It provides the most appropriate balance between maintaining the property rights of landowners and avoidance of adverse environmental effects.
 - (d) The 5m setback supports, rather than undermines the achievements in landowner education and non-regulatory methods of riparian zone protection, as detailed in the evidence of Allan Kirk.
 - (e) Areas specifically noted for their contributions to biological diversity are subject to protection provided under Schedule E.
164. Dr Quinn also discusses in paragraph 13 that the wider 10 metre exclusion zone is appropriate for more sensitive water bodies.

"The wider (10m) activity exclusion zones adjacent to particularly sensitive water bodies in the POP are justified because buffer efficiency at trapping sediment and other contaminants generally increases with buffer width (Yuan et al. 2009). Wetlands warrant a higher level of protection because historic land development has greatly reduced their extent in the Manawatu and they are prone to infilling with sediment. Trout spawning areas are also particularly sensitive to sedimentation because trout eggs are laid within the river bed (Alabaster & Lloyd 1980)."

165. On that basis I consider the use of a 10 metre setback is appropriate from wetlands and sites valued for Trout spawning.
166. In summary, I support a rule framework that consists of the following:
- (a) A performance standard for all permitted activities in Chapter 12 which requires a 5 metre setback from the bed of a river with a bed with of greater than 1 metre.
 - (b) A performance standard for all permitted activities in Chapter 12 which requires a 10 metre setback from a lake, wetland or a site of significance valued for trout spawning.

Other matters

167. Appeals against the following provisions remain unresolved and were not addressed as 'key issues' in my evidence:
- (a) Paragraph 5.1.2 – accelerated erosion;
 - (b) Paragraph 5.1.3 – land and soil management;
 - (c) Objective 5-1 – managing accelerated erosion;
 - (d) Policy 5-1 – encouraging and supporting sustainable land management;
 - (e) Policy 5-5 – supporting codes of practice;
 - (f) Method 5-1 – sustainable land use initiative – hill country erosion;
 - (g) Section 5.6 - anticipated environmental results.
168. In response to issues raised with some of the provisions above, and to maintain consistency with my recommended changes to the rules in Chapter 12, I recommend further amendments be made to selected provisions in Chapters 5 and 12.
169. I consider that those amendments (highlighted in yellow at attached **Attachment 1**) are the most appropriate ways to achieve the purpose of the Act.
170. I will address any issues raised by the amendments (or lack of amendment) in my reply evidence, if such issues are addressed by appellants or respondents.



PHILLIP HINDRUP
SENIOR CONSENTS PLANNER

4715

Appendix 1

Recommended provisions for Chapters 5 and 12

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5 Land

5.1 Scope and Background

Land management issues stem mainly from the effects of human activities on land. **Naturally occurring erosion also exists within the Horizons region and may also impact water quality, infrastructure integrity and flood control. This chapter, however, only focuses on the impacts of human activity.** Potential for adverse environmental effects depends upon two factors: the capability of the land and soil to support particular uses and the effects of a given activity on different land and soil types. Mismanagement of the land resource has major implications for water quality and aquatic biological diversity in terms of sediment and nutrient inputs. These implications stem from the very strong links that exist between the land and water resources.

Agriculture, particularly pasture-based farming, is the foundation of the Region's economy and is one of the key elements that has defined the Region's social and visual landscape. However, in some areas, past and present agricultural practices have damaged the very resource upon which the agricultural sector is based – the land and soil. Future land management practices have the potential to increase the rate of damage if they do not take the natural limitations of the land into account.

5.1.1 Chapter Content

This chapter covers *accelerated erosion**, including the management of *vegetation clearance**, *land disturbance**, *forestry** and *cultivation**.

Activities related to land management which are covered in other chapters include:

- (a) discharges of *agrichemicals**, *agricultural wastes** and other contaminants onto or into land, addressed in Chapter 6
- (b) activities involving the beds of rivers and lakes, addressed in Chapter 6
- (c) clearance of indigenous vegetation and drainage of significant wetlands, addressed in Chapter 7.

5.1.2 Accelerated Erosion*

*Accelerated erosion** is often caused by historical and current clearance of *woody vegetation** and earthworks such as tracking, particularly on *land use capability classes** VII and VIII land. The Region has approximately 274,000 ha of hill country land at risk of moderate-severe erosion (Figure 5.1A), 116,000 ha of which were affected by the storms of 2004. Approximately 200 million tonnes of soil was eroded during the February 2004 storm, causing approximately 30 million tonnes of sediment to enter the Region's rivers. The sediment discharged by rivers in the Region during this single storm event was likely to be several times the average annual sediment discharge for the Region.

The Region's western coast, particularly the foredune and associated inland soils, is easily eroded when the protective vegetation cover is removed as part of coastal development, and as a consequence of activities such as land recontouring and vehicle movement. *Vegetation clearance** and *land disturbance** expose these fragile soils to wind erosion.



The present extent of erosion has occurred despite the work by catchment boards and other individuals and organisations to manage soil erosion since the 1940s. Where these activities brought about meaningful land use change, the results have been successful in decreasing erosion rates. For instance, in steep hill country, tree cover has reduced erosion rates by approximately 75% when compared with grass. However, the size and scale of the erosion issue is such that to date no agency has been able to deal with all erosion-prone land. Further, in some areas, large-scale land use changes are likely to be required, to which there is understandable landowner resistance.

*Accelerated erosion** can cause a number of on-site and off-site impacts:

- (a) to the landowner – loss of soil and productive capability, reduced stock-carrying capacity, impacts on property and assets such as *tracks**, fences and buildings, and the costs of carrying out repairs
- (b) to the environment – reduced water quality in terms of nutrient loads (much of the phosphate load in water is the result of sediment run-off), reduced water clarity, and major impacts on instream life
- (c) to others in the Region – damage to infrastructure and loss of flood protection to lowland communities as river beds within river and drainage schemes fill up with silt.

Soils that are damaged by slipping take a very long time to recover. Studies have shown it can take in the order of 20 years to regain 80% of pre-erosion productivity levels, and more than 100 years to achieve near-full recovery. Some soil types may never fully recover. Efforts to maintain farm productivity on land that has been affected by slipping generally increase pressure on less damaged parts of the *property**, thereby increasing the likelihood of further erosion and the loss of nutrients from increased *fertiliser** use.

Disturbed sandy soils can take many years to revegetate and stabilise naturally. In the interim, large quantities of sand can be eroded by the wind, threatening buildings and property and causing the inundation of productive land.

In addition to the damage that can be caused to the Region's fragile land types and soils discussed above, erosion rates and sediment run-off from other parts of the Region can be increased through activities that involve significant *vegetation clearance** and *land disturbance**. Such activities are typically involved with major infrastructure development (for example, road construction and upgrades or energy projects such as windfarm development), land development (such as new residential or industrial subdivisions on the edge of urban centres or recontouring of land associated with dairy conversions or intensification), or aggregate extraction (for example, gravel pits or quarries).

Insufficient attention to batter slopes, stormwater management, fill compaction, overburden containment, debris clearance and revegetation can significantly increase sediment loads in adjoining streams or sediment discharges onto neighbouring properties.

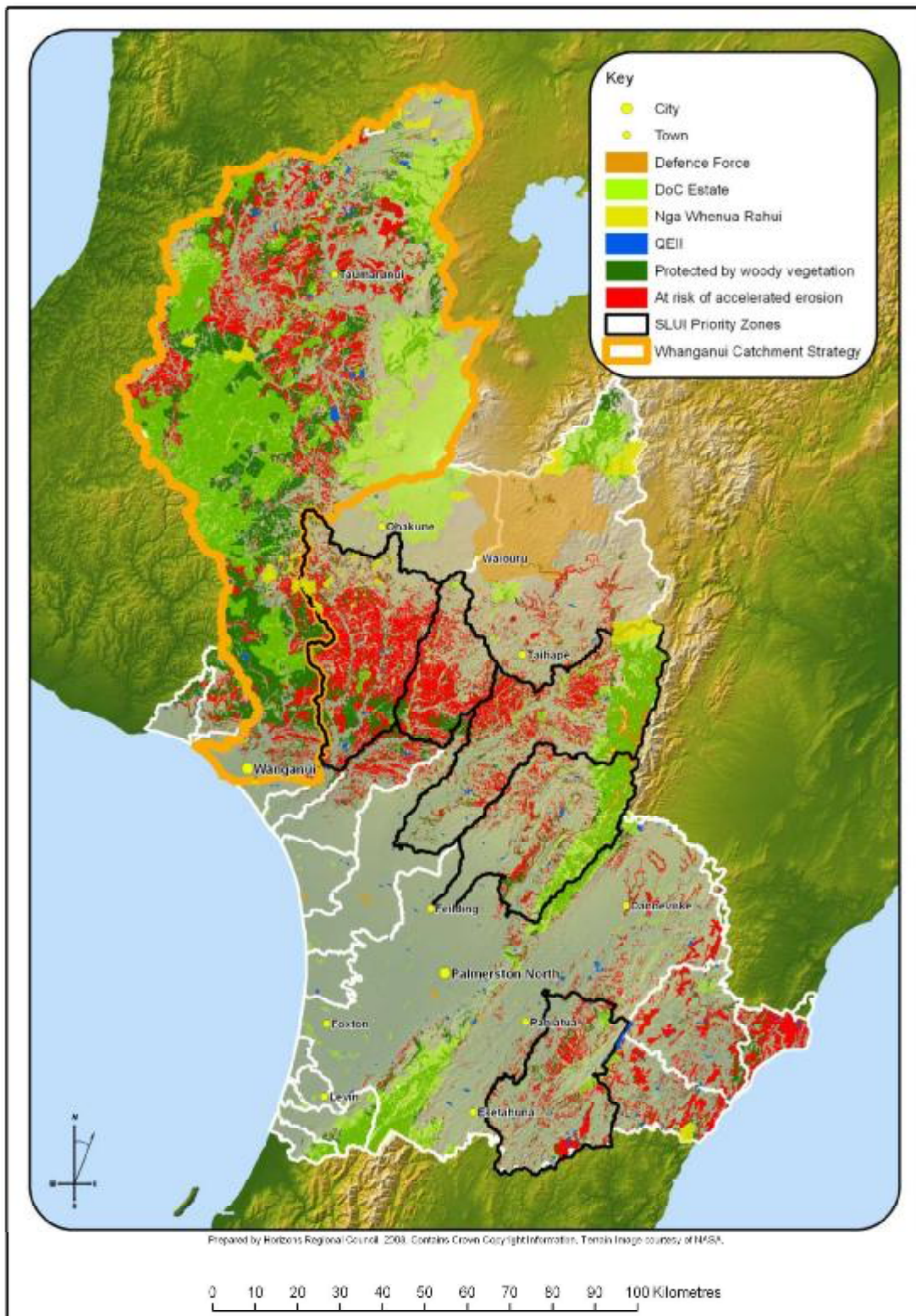


Figure 5.1A Distribution of hill country land subject to an elevated risk of *accelerated erosion**

5.1.3 Land and Soil Management

This section focuses on reducing *accelerated erosion**.

The Regional Council's focus continues to be largely non-regulatory, with the Council's Sustainable Land Use Initiative and Whanganui Catchment Strategy programmes being critical components of this approach.

The Regional Council's regulatory focus for land centres on protecting the stability of the Region's soil and maintaining or enhancing water quality.

This regulatory focus recognises that under s9(2) of the RMA, the use of land can occur as of right unless a rule in a plan states otherwise. Therefore, the Regional Council does not require rules allowing the use of land unless it wishes to control the way in which that use of land occurs.

Under this Plan, the majority of activities involving the use of land can continue to occur as of right provided they are not within a *rare habitat**, *threatened habitat** or *at-risk habitat**. However, **three four** specific activities can only continue to be undertaken without the need for a resource consent if conditions are met. These activities are:

- (a) **large-scale** *land disturbance**, including earthworks,
- (b) *forestry**,
- (c) **cultivation*** occurring adjacent to certain water bodies, **and**
- (c)(d) *vegetation clearance****

These activities are permitted by Rules 12-1A, 12-2, **and** 12-3 **and** 12-4A respectively.

~~*Vegetation clearance** and *land disturbance** require a resource consent if they are undertaken adjacent to some water bodies in *Hill Country Erosion Management Areas** or *coastal foredune** areas subject to an elevated risk of *accelerated erosion**. Removal of some *woody vegetation** and the construction of *new tracking** anywhere in those elevated risk areas also requires a resource consent. These specific activities are the subject of Rule 12-4.~~

5.2 Significant Resource Management Issues

Issue 5-1: *Accelerated erosion**

- (a) **Farming and other land uses in hill country**
Some aspects of current farming and other land use practices in the Region's hill country and adjacent to water bodies are unsustainable. Where *vegetation clearance**, roading, tracking or other types of *land disturbance** (including filling) are carried out in hill country or adjacent to water bodies, there is potential to destabilise slopes, causing *accelerated erosion**. *Accelerated erosion** is often causing:
 - (i) a significant reduction in the productive capability of land
 - (ii) increased sediment loads in water bodies which are reducing water quality, smothering aquatic ecosystems, infilling rivers, lakes and estuaries, and increasing flood risk to lowland communities
 - (iii) land stability hazards, particularly in steep hill country, which threaten people, buildings and infrastructure.



- (b) **Coastal foredune***
Vegetation and soil disturbance associated with vehicle movement, tracking, coastal protection works and land recontouring have the potential to destabilise fragile *coastal foredunes** if not well managed.
- (c) **Large-scale land disturbance* including earthworks**
Most other land use activities are not of a sufficient scale to have significant regional adverse effects. However, large-scale earthworks related to urban expansion and other development can have significant adverse effects on water bodies if sediment from these earthworks is poorly managed.
- (d) **Forestry***
*Forestry** is considered to be a generally beneficial land use in the Region's hill country due to its ability to facilitate the long-term stabilisation of land subject to an elevated risk of *accelerated erosion**. However, *forestry** needs to be prudently managed, in a manner consistent with industry best practice, to ensure that sustainable land use is realised and off-site adverse effects are minimised.
- (e) **Cultivation***
*Cultivation** does not generally cause soil erosion problems within the Region. However, *cultivation** undertaken adjacent to water bodies has the potential to result in increased sediment loads to those water bodies unless appropriate industry best practice sediment run-off control measures are implemented.

5.3

Objectives

Objective 5-1: Managing accelerated erosion*

By the year 2017, 50% of farms within hill country *land*[^] subject to an elevated risk of *accelerated erosion** will have in place, or be in the process of putting in place, farm-wide sustainable *land*[^] management practices to minimise *accelerated erosion** and result in reduced sedimentation of the *water bodies*[^].

Whāinga 5-1: Te whakahaere horo whenua tere

Ā te tau 2017 kia 50% o ngā pāmu kei ngā puke teitei ka whai tūponotanga nui ka pāngia pea e te horo whenua tere kua whakarite kē – kei te whakarite rānei – i ētahi tikanga whakauka mō te whakahaere whenua kei te pāmu katoa hei whakaiti i te horo whenua tere.

Objective 5-2: Regulating potential causes of accelerated erosion*

Land[^] is used in a manner that ensures *accelerated erosion** and increased sedimentation in *water bodies*[^] (with resultant adverse effects[^] on people, buildings and *infrastructure*[^]) caused by *vegetation clearance**, *land disturbance**, *forestry**, or *cultivation** are avoided as far as reasonably practicable, or otherwise remedied or mitigated.

Whāinga 5-2: Te whakahaere pitomata e takea mai ai horo whenua tere

Ka whakamahia te whenua kia hua ai te horo whenua tere, ā, ka piki haere te parahanga ā-matū i roto i ngā wai (me te hua ko ngā pānga kino ki te tangata, ngā whare, me ngā kaupapa o raro) nā te whakapara tupu, te raweke whenua, te mahi rākau, te mahi māra – i ngā wā e tika ana ka pareā, ka whakapaingia rānei, ka whakamemehatia rānei ēnei.

5.4

Policies

Policy 5-1: Encouraging and supporting sustainable land[^] management

The Regional Council will encourage and support the adoption of sustainable land[^] management practices by:

- (a) working with relevant owners and occupiers of farms within hill country land[^] subject to an elevated risk of *accelerated erosion*^{*} to prepare voluntary management plans under the Council's Sustainable Land Use Initiative or Whanganui Catchment Strategy, which identify sustainable land[^] management practices for each farm and work programmes for implementing any agreed changes,
- (b) monitoring the implementation of sustainable land[^] management practices within hill country land[^] subject to an elevated risk of *accelerated erosion*^{*} and reporting this information on a two-yearly basis, **and reviewing the effectiveness of the sustainable land management practices**, and
- (c) responding to requests from owners or occupiers of land[^] that is not within hill country land[^] subject to an elevated risk of *accelerated erosion*^{*} to prepare a management plan, provided this does not impede the achievement of (a).

Policy 5-2A: Regulation of land[^] use activities

- (a) The Regional Council must regulate *vegetation clearance*^{*}, *land disturbance*^{*}, *forestry*^{*} and *cultivation*^{*} through *rules*[^] in this Plan and decisions on *resource consents*[^], in order to achieve Objective 5-2.
- (b) *Territorial Authorities*[^] may regulate, through *rules*[^] in *district plans*[^] and decisions on *resource consents*[^], the actual or potential *effects*[^] of the use, development, or protection of land[^], in order to achieve Objective 5-2. However, *Territorial Authorities*[^] must not have *rules*[^] that are contradictory to the *rules*[^] in this Plan that control the use of land[^].
- (c) The Regional Council will generally allow *vegetation clearance*^{*}, *land disturbance*^{*}, *forestry*^{*} and *cultivation*^{*} to be undertaken without the need for a *resource consent*[^] if *conditions*[^] are met. *Vegetation clearance*^{*} **and *land disturbance*^{*} requires a *resource consent*[^] if *they are* undertaken adjacent to some *water bodies*[^] (including certain *wetlands*[^]), *in a coastal foredune*^{*} area or involving an area greater than 2 hectares. *Land disturbance*^{*} requires a *resource consent*[^] if for an area greater than 2,500 m², on land^{*} with a slope greater than 25, in *Hill Country Erosion Management Areas*^{*} or in *coastal foredune*^{*} areas. *Removal of some woody vegetation*^{*} and the formation of *new tracking*^{*} in *Hill Country Erosion Management Areas*^{*} also *Cultivation*^{*} requires a *resource consent*[^] if undertaken adjacent to some *water bodies*[^], including *wetlands*[^].**

Policy 5-5: Supporting codes of practice, standards, guidelines, environmental management plans and providing information on best management practices

The Regional Council must, and *Territorial Authorities*[^] may:

- (a) support the development of codes of practice, standards, guidelines and other sector-based initiatives targeted at achieving sustainable land[^] use,



- (b) recognise appropriately developed and administered codes of practice, standards, guidelines or environmental management plans targeted at achieving sustainable *land*[^] use, and incorporate them within the regulatory framework where applicable, and
- (c) make information describing best management practices for reducing erosion and maintaining *water*[^] quality and soil health available to all relevant landowners, occupiers, asset owners, consultants, developers and contractors.

5.5

Methods

Managing activities on land is a mix of regulatory and non-regulatory approaches. Part II of this Plan contains regional rules relating to the activities described in this chapter.

| Method 5-1 | Sustainable Land Use Initiative – Hill Country Erosion |
|------------------------|--|
| Description | The aim of this method is to reduce hill country <i>accelerated erosion</i> [*] . While the emphasis will be on hill country, all land at risk of erosion will be eligible for assistance under this programme. Staff from the Regional Council and other agencies will work with landowners and occupiers to develop voluntary management plans. These plans will provide the blueprint for long-term environmental, economic and social sustainability. Research, publicity, education, information, incentives, joint ventures and land purchase will be used to encourage the landowner or occupier to manage their land in a sustainable manner. |
| Who | Regional Council, central government, Territorial Authorities, Crown Research Institutes, landowners or occupiers, recognised organisations representing farmers, and farm consultants. |
| Links to Policy | This method implements Policy 5-1. |
| Targets | 50% of properties within hill country land subject to an elevated risk of <i>accelerated erosion</i> [*] will have a voluntary management plan in place by 2017. |

| Method 5-2 | Whanganui Catchment Strategy |
|------------------------|---|
| Description | The aim of this method is to reduce hill country <i>accelerated erosion</i> [*] within the Whanganui catchment. Whilst the emphasis will be on hill country land subject to an elevated risk of <i>accelerated erosion</i> [*] , all land at risk of erosion within the catchment will be eligible for assistance under this programme. Staff from the Regional Council and consultants will work with landowners and occupiers to develop management plans. These plans will provide the blueprint for long-term environmental, economic and social sustainability. Research, publicity, education, information and incentives will be used to encourage the landowner or occupier to manage their land in a sustainable manner. The Whanganui Catchment method is a pilot for the much larger Sustainable Land Use Initiative – Hill Country Erosion method (Method 5-1). Eventually, the Whanganui Catchment Strategy method will be integrated with this method. |
| Who | Regional Council, Ruapehu and Wanganui District Councils, landowners or occupiers, relevant <i>hapū</i> [*] and <i>iwi</i> [*] , the Whanganui River Enhancement Trust, Department of Conservation, recognised organisations representing farmers and farm consultants. |
| Links to Policy | This method implements Policy 5-1. |



| Method 5-2 | Whanganui Catchment Strategy |
|----------------|---|
| Targets | 50% of properties within hill country land subject to an elevated risk of <i>accelerated erosion</i> * in the Whanganui Catchment will have a voluntary management plan in place by 2015. |

| Method 5-3 | Soil Health |
|------------------------|--|
| Description | The aim of this method is to reduce the impact of horticulture, cropping and intensive farming activities on soil health, and the consequent off-site environmental impacts. Education on best management practices will be made available to landowners through a variety of means to encourage the adoption of sustainable land use practices. Research and monitoring will be used to identify and fine-tune best practice. This method includes the provision of advice and information to owners of land in the fragile sand country along the Region's west coast. |
| Who | Regional Council, landowners or occupiers, Landwise, Horticulture New Zealand, Federated Farmers, agricultural contractors, <i>fertiliser</i> * companies and research institutes. |
| Links to Policy | This method implements Policy 5-5(c). |
| Targets | <ul style="list-style-type: none"> • All major croppers/horticulturists in the Region are operating under best management practice regimes by 2017. • All major agricultural contractors are operating under industry standards regimes by 2010. • All pasture-based farms are being managed in accordance with the relevant sector-based best management practice by the agreed target dates. |

| Method 5-4 | Sustainable Land Use Codes of Practice and Best Management Practices |
|------------------------|--|
| Description | <p>This method will provide support for the development of codes of practice, best management practices and other sector-based initiatives for sustainable land use, construction, production and operating methods on all types of land within the Region – hill country, plains, sand country and along the coast.</p> <p>This method will also recognise, and where appropriate support, initiatives that raise awareness of sustainable land use. Examples include the monitor farm programme, sustainable farming and management funds, and Ballance Farm Environment Awards.</p> |
| Who | Participation in this project is very much dependent upon approaches from industry and sector groups. |
| Links to Policy | This method implements Policy 5-5. |
| Targets | <ul style="list-style-type: none"> • All approaches for Regional Council assistance will be considered. • Where proposals are aligned with Regional Council objectives, assistance will be provided where possible. |

| Method 5-5 | Land Research, Monitoring and Reporting Programme |
|--------------------|---|
| Description | The aim of this method is to develop an integrated research, monitoring and reporting programme that supports delivery and refinement of existing policies and methods, guides implementation planning, and allows implementation effectiveness to be assessed. This will include a |



| Method 5-5 | Land Research, Monitoring and Reporting Programme |
|-----------------|--|
| | five-yearly assessment of the effectiveness of the above methods, particularly the Sustainable Land Use Initiative – Hill Country Erosion Method. |
| Who | Regional Council, landowners and occupiers, research institutes, universities, and non-government agencies and community groups. |
| Links to Policy | This method implements Policies 5-1, 5-2A and 5-5. |
| Target | A research, monitoring and reporting programme that supports delivery and refinement of existing policies and methods, and guides and assesses implementation. |

| Method 5-6 | Infrastructure Protection |
|-----------------|---|
| Description | The aim of this method is to reduce the erosion risk to, and caused by, the provision, <i>maintenance</i> * or <i>upgrade</i> * of infrastructure. Advice and information will be provided to infrastructure owners in the planning stages of new works, the carrying out of <i>maintenance</i> * or <i>upgrade</i> *, and protection of existing networks from erosion risks. |
| Who | Regional Council, Territorial Authorities and owners of major infrastructure. |
| Links to Policy | This method implements Policy 5-5. |
| Target | The Regional Council will have formed working partnerships with all major infrastructure owners for the purposes of assessing and identifying options to manage erosion risks. |

| Method 5-7 | Education in Schools – Land |
|-----------------|---|
| Description | The aim of this method is to implement a range of initiatives to raise awareness amongst the youth of the Region of the significance of the land and soil resource, the threats to it, and what they can do to protect/restore it. This will be achieved through various environmental education programmes/initiatives eg., Green RIG, Trees for Survival etc. |
| Who | Regional Council, national and local environmental education providers and youth organisations. |
| Links to Policy | This method implements Policy 5-5. |
| Targets | The Regional Council will develop and implement a land and soil related environmental education programme. |

5.6 Anticipated Environmental Results

| Anticipated Environmental Result | Link to Policy | Indicator | Data Source |
|---|--|--|---|
| By 2017, there will be a net reduction in the adverse effects on water quality, people, buildings and infrastructure caused by <u>accelerated erosion, and hill country and coastal</u> | Policies 5-1, 5-2A, <u>and 5-5, 6-1, 6-2, 6-3 and 6-4.</u> | <ul style="list-style-type: none"> Water quality monitoring results, especially for “muddy waterways” in the Whanganui and Rangitikei Rivers Rate of deposition of sediment in coastal river | <ul style="list-style-type: none"> Regional Council's state of environment water quality monitoring programme Regional Council's and Territorial Authorities' incidents databases |



| Anticipated Environmental Result | Link to Policy | Indicator | Data Source |
|---|----------------|--|--|
| <p><i>foredune</i>* wind erosion in the Region.</p> <p>Advice Note: There are linkages from this AER to the AERs within s6.6</p> | | <p>reaches, focusing on the Whanganui, Rangitikei and Manawatu Rivers</p> <ul style="list-style-type: none"> • Costs of storm damage • % of Region's land being used in accordance with sustainable use guidelines | <ul style="list-style-type: none"> • Regional Council's river bed level survey results • Regional Council's and Territorial Authorities' storm damage reports • Land use mapping • Regional Council's Sustainable Land Use Initiative implementation reports |

5.7 Explanations and Principal Reasons

Objectives for land management are presented in this Plan to encourage sustainable land use and minimise erosion. These focus on responding to the fact that 65% of the Region consists of gullies and hillsides subject to *accelerated erosion**. A target has been introduced into Objective 5-1 to ensure that the progress toward sustainable hill country land use can be measured. This is particularly important because the policy platform that underpins this objective is largely non-regulatory.

Policy 5-1 recognises that regulation is not the appropriate tool to encourage change toward sustainable land management practices. Instead it uses non-regulatory farm plans that contain a programme of works involving the landowner's active participation. Policy 5-1 and associated methods acknowledge that the achievement of sustainable farming practices on hill country land subject to an elevated risk of *accelerated erosion** is a complex task. There are three reasons for this.

1. Recognition that sustainable land use means changing from unsustainable farming practices. This may mean the introduction of new practices such as employing different stocking rates, introducing *forestry** or retirement of land and fencing water bodies.
2. Commitment to implementing new land management practices will require capital outlay and most importantly require a willingness from the landowner to introduce change.
3. Sustainable land management practices need to be tailored to the specific land capability of an individual holding, which means a blanket approach introducing one solution for all hill country farming will probably fail.

Policy 5-2A recognises that *vegetation clearance** and *land disturbance** are two of the main contributors to *accelerated erosion**. The policy describes the regulation of land use activities to provide guidance to regional and district plan preparation.

Policy 5-5 states the Regional Council's support for codes of practice, standards, guidelines and environmental management plans as these can assist with reducing *accelerated erosion**.

12 Land Use Activities and Indigenous Biological Diversity

12.1 Land Use Activities

12.1.1 Objectives

Objective 12-1: Accelerated erosion* - regulation of vegetation clearance*, land disturbance*, forestry* and cultivation*

The regulation of vegetation clearance*, land disturbance*, forestry* and cultivation* in a manner that ensures:

- (a) accelerated erosion* and any associated damage to people, buildings and infrastructure^ and other physical resources of regional or national importance are avoided as far as reasonably practicable or otherwise remedied or mitigated, and
- (b) increased sedimentation in water bodies^ as a result of human activity is avoided as far as reasonably practicable, or otherwise mitigated.

12.1.2 Policies

Policy 12-1A: Regional rules^ for vegetation clearance*, land disturbance*, forestry* and cultivation*

The Regional Council must:

- (a) regulate vegetation clearance*, land disturbance*, forestry* and cultivation* through regional rules^ in accordance with Objectives 11A-1, 11A-2 and 12-1 and Policies 11A-1 to 11A-8, and
- (b) manage the effects^ of vegetation clearance* and land disturbance* in Hill Country Erosion Management Areas* by requiring resource consents^ for those activities:
 - (i) adjacent to some water bodies^,
 - (ii) involving the removal of some woody vegetation*, and
 - (iii) involving the formation of new tracking*.



Policy 12-1: Consent decision-making for vegetation clearance*, land disturbance*, forestry* and cultivation*

For *vegetation clearance**, *land disturbance**, *forestry** or *cultivation** that requires *resource consent^* under Rules 12-1, 12-4, 12-5 or Rule 12-5A, the Regional Council must make decisions on consent applications and set consent *conditions^* on a case-by-case basis, having regard to:

- (aa) the Regional Policy Statement, particularly Objective 5-2 and Policies 5-2A and 5-5,
- (fa) managing the *effects^* of *land disturbance**, including large-scale earthworks, by requiring *Erosion and Sediment Control Plans** or other appropriate plans to be prepared,
- (fb) managing the *effects^* of *forestry** by requiring sustainable *forestry** management practices to be adopted and *Erosion and Sediment Control Plans** or other appropriate plans to be prepared,
- (fc) managing the *effects^* of *cultivation** ~~adjacent to some water bodies^~~ through the use of sediment run-off control methods **and riparian setbacks**,
- (fd) the appropriateness of establishing *infrastructure^* and other physical resources of regional or national importance as identified in Policy 3-1,
- (fe) generally allowing the clearance of *woody vegetation** on established pasture if that clearance will not lead to *accelerated erosion** or the increased sedimentation of *water bodies^*,
- (ff) generally allowing activities that are for the purpose of managing *natural hazards^*, including the reduction of flood risk,
- (fg) generally allowing *forestry** for soil conservation purposes,
- (fh) generally allowing activities that result in improved *land^* stability or enhanced surface *water^* quality,
- (fi) any relevant codes of practice, standards, guidelines, or environmental management plans and accepting compliance with them to the extent that they can be used as *conditions^* on *resource consents^*,
- (h) sediment and erosion control measures required to reasonably minimise adverse *effects^*, including those caused by rainfall and storm events, and
- (hi) achieving integrated management through consents that are Region-wide or cover large areas for activities that are widespread and undertaken by or on behalf of a single consent holder including, but not limited to, *infrastructure^* and other physical resources of regional or national importance, or *forestry**, provided any such consents are subject to *conditions^*, including review provisions, enabling *site*-specific* matters to be addressed as necessary.

12.2 Indigenous Biological Diversity

12.2.1 Objective

Objective 12-2: Regulation of activities affecting indigenous biological diversity[^]

The regulation of *vegetation clearance^{*}*, *land disturbance^{*}*, *forestry^{*}* and *cultivation^{*}* and certain other resource use activities to protect areas of significant indigenous vegetation and significant habitats of indigenous fauna or to maintain indigenous *biological diversity[^]*, including enhancement where appropriate.

12.2.2 Policies

Policy 12-5A: Regional rules[^] for activities affecting indigenous biological diversity[^]

The Regional Council must require *resource consents[^]* to be obtained for *vegetation clearance^{*}*, *land disturbance^{*}* and *cultivation^{*}* and certain other resource use activities within *rare habitats^{*}*, *threatened habitats^{*}* and *at-risk habitats^{*}*, and for *forestry^{*}* that does not minimise potential adverse effects[^] on those habitats, through *regional rules[^]* in accordance with Objectives 11A-1, 11A-2 and 12-2 and Policies 11A-1 to 11A-8.

Policy 12-5: Consent decision-making for activities in rare habitats^{*}, threatened habitats^{*} and at-risk habitats^{*}

- (a) For activities regulated under Rule 12-6, the Regional Council must make decisions on consent applications and set consent conditions[^] on a case-by-case basis, having regard to:
- (i) the Regional Policy Statement, particularly Objective 7-1 and Policy 7-2A,
 - (ii) the significance of the area of habitat, in terms of its representativeness, rarity and distinctiveness, and ecological context, as assessed under Policy 12-6,
 - (iii) the potential adverse effects[^] of the proposed activity on that significance, and
 - (iv) for activities regulated under ss13, 14 and 15 RMA, the matters set out in Policy 12-1(h) and relevant objectives and policies in Chapters 6, 13, 15 and 16.
- (b) Consent must generally not be granted for *vegetation clearance^{*}*, *land disturbance^{*}*, *forestry^{*}* or *cultivation^{*}* and certain other resource use activities in a *rare habitat^{*}*, *threatened habitat^{*}* or *at-risk habitat^{*}* assessed to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna, unless:
- (i) any more than minor adverse effects[^] on that habitat's representativeness, rarity and distinctiveness, or ecological context assessed under Policy 12-6 are avoided as far as reasonably practicable, or otherwise remedied or mitigated, or



- (ii) any more than minor adverse effects[^] which cannot reasonably be avoided, remedied or mitigated are offset to result in a net indigenous *biological diversity*[^] gain.
- (c) Consent must generally be granted for *vegetation clearance*^{*}, *land disturbance*^{*}, *forestry*^{*} or *cultivation*^{*} and certain other resource use activities in an *at-risk habitat*^{*} assessed not to be an area of significant indigenous vegetation or a significant habitat of indigenous fauna when:
 - (i) there will be no significant adverse effects[^] on that habitat's representativeness, rarity and distinctiveness, or ecological context as assessed in accordance with Policy 12-6, or
 - (ii) any significant adverse effects[^] are avoided, as far as reasonably practicable, or otherwise remedied or mitigated, or
 - (iii) any significant adverse effects[^] which cannot reasonably be avoided, remedied or mitigated are offset to result in a net indigenous *biological diversity*[^] gain.
- (d) When assessing an offset in accordance with (b)(ii) or (c)(iii), decision-makers must have regard to:
 - (i) the desirability of providing for a net gain within the same habitat type,
 - (ii) the desirability of providing for a net gain in the same ecologically relevant locality as the affected habitat, and
 - (iii) the appropriateness of establishing *infrastructure*[^] and other physical resources of regional or national importance as identified in Policy 3-1.

Policy 12-6: Criteria for assessing the significance of, and the effects[^] of activities on, an area of habitat

- (a) An area of *rare habitat*^{*}, *threatened habitat*^{*} or *at-risk habitat*^{*} may be recognised as being an area of significant indigenous vegetation or a significant habitat of indigenous fauna if:
 - (i) in terms of representativeness, that habitat:
 - (A) comprises indigenous habitat type that is under-represented (20% or less of known or likely former cover), or
 - (B) is an area of indigenous vegetation that is large relative to other areas of habitat in the Ecological District or Ecological Region, with indigenous species composition, structure and diversity typical of the habitat type, and
 - (C) has functioning ecosystem processes.
 - or
 - (ii) in terms of rarity and distinctiveness, that habitat supports an indigenous species or community that:
 - (A) is classified as threatened (as determined by the *New Zealand Threat Classification System and Lists*^{*}), or
 - (B) is distinctive to the Region, or
 - (C) is at a natural distributional limit, or

- (D) has a naturally disjunct distribution that defines a floristic gap, or
- (E) was originally (ie., prehuman) uncommon within New Zealand, and supports an indigenous species or community of indigenous species.

or

- (iii) in terms of ecological context, that habitat provides:
 - (A) connectivity (physical or process connections) between two or more areas of indigenous habitat, or
 - (B) an ecological buffer (provides protection) to an adjacent area of indigenous habitat (terrestrial or aquatic) that is ecologically significant, or
 - (C) part of an indigenous ecological sequence or connectivity between different habitat types across a gradient (eg., altitudinal or hydrological), or
 - (D) important breeding areas, seasonal food sources, or an important component of a migration path for indigenous species, or
 - (E) habitat for indigenous species that are dependent on large and contiguous habitats.

- (b) The potential adverse effects[^] of *vegetation clearance*^{*}, *land disturbance*^{*}, *forestry*^{*} or *cultivation*^{*} on a *rare habitat*^{*}, *threatened habitat*^{*} or *at-risk habitat*^{*} must be determined by the degree to which the proposed activity will diminish any of the above characteristics of the habitat that make it significant, while also having regard to the ecological sustainability of that habitat.



Land

12.3 Rules - Vegetation clearance*, land disturbance*, forestry* and cultivation* and indigenous biological diversity

| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
|--|---|-------------------------|--|--|
| <p>12-1A Small scale land disturbance* including earthworks</p> | <p>Except as regulated by Rules 12-1, 12-5 and 12-6 any land disturbance* pursuant to s9(2) RMA of a total land area less than 2500m² per property* per 12 month period and any ancillary: (a) diversion of water* pursuant to s14(1) RMA on the land* where the land disturbance* is undertaken, or (b) discharge* of sediment into water* pursuant to s15(1) RMA resulting from the land disturbance*.</p> | <p>Permitted</p> | <p>(a) The activity must not take place on land* that is within a coastal foredune*. (b) Adequate erosion and sediment control methods which may include bunding, silt traps, interception drains or other alternative methods must be implemented to minimise sediment run-off to water* prior to commencing the works. (c) Any ancillary discharge of sediment into water* must not, after reasonable mixing, cause the receiving water body* to breach the water* quality numerics for visual clarity set out in Schedule D for that water body*. (d) The activity must not occur within a rare habitat*, threatened habitat* or at risk habitat*. (e) The activity must not occur on land* with a slope greater than 25°. (f) The activity must not occur on land* that is in, or within, 5 m of: (i) the bed* of a river* that is permanently flowing or has an active bed* width greater than 1 m (ii) the bed* of a lake*. (g) The activity must not occur on land* that is in, or within, 10 m of: a wetland* sites valued for trout spawning as identified in Schedule AB. (h) a wetland* (i) sites valued for trout spawning as identified in Schedule AB.</p> | |
| <p>12-1</p> | <p>Except as regulated by Rules 12-45</p> | <p>Permitted</p> | <p>(a) The activity must not take place on land* that is within</p> | <p>Control is reserved over.</p> |



| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
|---|--|--------------------------|---|--|
| <p>Large-scale land disturbance*, including earthworks</p> | <p>and 12-6, any land disturbance* pursuant to s9(32) RMA of a total area greater than 2500 m² per property* per 12-month period and any ancillary:</p> <p>(a) diversion of water* pursuant to s14(1) RMA on the land* where the land disturbance* is undertaken, or</p> <p>(b) discharge* of sediment into water* pursuant to s15(1) RMA resulting from the land disturbance*.</p> | <p>Controlled</p> | <p>a coastal foreshore*.</p> <p>(b) The activity must be undertaken in accordance with an Erosion and Sediment Control Plan* prepared by an appropriately qualified person which must be submitted to the Regional Council with the consent application.</p> <p>(c) Any ancillary discharge of sediment into water* must not, after reasonable mixing, cause the receiving water body* to breach the water* quality numerics for visual clarity set out in Schedule D for that water body*.</p> <p>(d) The activity must not occur within a rare habitat*, threatened habitat* or at risk habitat*.</p> <p>(e) The activity must not occur on land* with a slope greater than 25°.</p> <p>(f) The activity must not occur on land* that is in, or within, 5 m of:</p> <p>(i) the bed* of a river* that is permanently flowing or has an active bed* width greater than 1 m</p> <p>(ii) the bed* of a lake*.</p> <p>(g) The activity must not occur on land* that is in, or within, 10 m of:</p> <p>(i) a wetland*</p> <p>(ii) sites valued for trout spawning as identified in Schedule AB.</p> | <p>(a) the nature, scale, timing and duration of land disturbance*</p> <p>(b) compliance with best management practices</p> <p>(c) measures to maintain slope stability</p> <p>(d) the method of sediment retention and control of sediment run-off</p> <p>(e) effects on riparian margins, water bodies* and water* quality</p> <p>(f) effects on rare habitats*, threatened habitats* and at risk habitats*</p> <p>(g) effects on existing structures</p> <p>(h) qualifications required of contractors</p> <p>(i) revegetation requirements</p> <p>(j) procedures in the event of discovering or disturbing an archaeological site, wāhi tapu* or kōiwi*</p> <p>(k) duration of consent</p> <p>(l) review of consent conditions*</p> <p>(m) compliance monitoring</p> <p>Resource consent* applications under this rule* will not be notified and written approval of affected persons will not be required (notice of applications need not be served* on affected persons).</p> |
| <p>12-3 Cultivation*</p> | <p>Except as regulated by Rules 12-5A and 12-6, any cultivation* pursuant to s9(2) RMA within 5 m of:</p> <p>(a) the bed* of a river* that is permanently flowing or has an active bed* width greater than 2 m or</p> <p>(b) the bed* of a lake*, or</p> | <p>Permitted</p> | <p>(a) The activity must not take place on land* that is within a coastal foreshore*.</p> <p>(b) Any ancillary discharge of sediment into water* must not, after reasonable mixing, cause the receiving water body* to breach the water* quality numerics for visual clarity set out in Schedule D for that water body*. Bunding, silt traps, interception drains or other alternative methods to minimise</p> | |



| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
|--|---|----------------|---|--|
| | <p>(e) a wetland^A and any ancillary;</p> <p>(f)(a) diversion of water^A pursuant to s14(1) RMA on the land^A where the cultivation[*] is undertaken, or</p> <p>(f)(b) discharge^A of sediment into water^A pursuant to s15(1) RMA resulting from the cultivation[*] or the use of bunding, silt traps, interception drains or other alternative methods to minimise sediment run-off into water^A.</p> | | <p>sediment run-off to water^A must be installed prior to and maintained during cultivation[*];</p> <p>(c) The activity must not occur within a rare habitat[*], threatened habitat[*] or at risk habitat[*];</p> <p>(d) The activity must not occur on land^A that is in, or within, 5 m of:</p> <p>(i) the bed^A of a river^A that is permanently flowing or has an active bed[*] width greater than 1 m</p> <p>(ii) the bed^A of a lake^A;</p> <p>(e) The activity must not occur on land^A that is in, or within, 10 m of:</p> <p>(i) a wetland^A</p> <p>(ii) sites valued for trout spawning as identified in Schedule AB.</p> | |
| 12-4A Vegetation clearance [*] | <p>Except as regulated by Rules 12-5A and 12-6 any vegetation clearance[*] and any ancillary:</p> <p>(a) diversion of water^A pursuant to s14(1) RMA on the land^A where the vegetation clearance[*] is undertaken, or</p> <p>(b) discharge^A of sediment into water^A pursuant to s15(1) RMA resulting from the vegetation clearance[*].</p> | Permitted | <p>Advice Note: Examples of alternative methods for minimising sediment run-off can be found in the Code of Practice for Commercial Vegetable Growing in the Horizons Region Version 2010/2 (Horticulture New Zealand).</p> <p>(a) The activity must not take place on land^A that is within a coastal foredune[*];</p> <p>(b) The area of any clearance of contiguous woody vegetation must be 2 ha or less per property in any 12 month period;</p> <p>(c) Any ancillary discharge of sediment into water^A must not, after reasonable mixing, cause the receiving water body^A to breach the water^A quality numerics for visual clarity set out in Schedule D for that water body^A;</p> <p>(d) The activity must not occur within a rare habitat[*], threatened habitat[*] or at risk habitat[*].</p> | |

| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
|--|--|--|--|--|
| <p>12-4 Specified Vegetation clearance* and land disturbance* in a Hill Country Erosion Management Area*, forestry* or cultivation* not complying with Rules 12-2, 12-3 or 12-4A</p> | <p>Except as regulated by Rule 12-6, any vegetation clearance* or land disturbance* not complying with Rule 12-4A or forestry* not complying with Rule 12-2 or cultivation* not complying with Rule 12-3 pursuant to s9(2) RMA undertaken within a Hill Country Erosion Management Area*</p> <p>(a) within 5 m of the bed* of a river* that is permanently flowing or has an active bed* width greater than 2 m; or</p> <p>(b) within 5 m of the bed* of a lake* or</p> <p>(c) 5 m of a wetland*, or</p> <p>(d) Involving the clearance of 1 ha or greater per property* per 12-month period of woody vegetation* where the canopy* cover of woody vegetation* in the area to be cleared is greater than 70%; or</p> <p>(e) involving new tracking* and any ancillary.</p> | <p>Restricted Discretionary</p> | <p>(e) The activity must not occur on land* that is in, or within, 5 m of:</p> <p>(i) the bed* of a river* that is permanently flowing or has an active bed* width greater than 1 m</p> <p>(ii) the bed* of a lake*</p> <p>(f) The activity must not occur on land* that is in, or within, 10 m of:</p> <p>(i) a wetland*</p> <p>(ii) sites valued for trout spawning as identified in Schedule AB.</p> <p>(a) The activity must not take place on land* that is within a coastal foredune*.</p> <p>(b) The activity must not occur within a rare habitat*, threatened habitat* or at risk habitat*.</p> | <p>Discretion is restricted to:</p> <p>(a) the location, nature, scale, timing and duration of the activity</p> <p>(b) effects* of the activity and associated sediment run-off on soil conservation, surface water* quality and aquatic ecology</p> <p>(c) the principles and erosion and sediment control measures set out in Chapters 3-9 of the Erosion and Sediment Control Guidelines for the Wellington Region (September 2002)</p> <p>(d) duration of consent and review of consent conditions*</p> <p>(e) compliance monitoring.</p> <p>Resource consent* applications under this rule* will not be notified and written approval of affected persons will not be required (notice of applications need not be served* on affected persons).</p> |



Land

| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
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| <p>12-5 Vegetation clearance*, land disturbance*, cultivation* or forestry* on land with a slope greater than 25% or that does not complying with Rules 12-1A and 12-1 to 12-4.</p> | <p>(f)(a) diversion of water[^] pursuant to s14(1) RMA on the land[^] where the vegetation clearance* or land disturbance* is undertaken, or (f)(b) discharge[^] of sediment into water[^] pursuant to s15(1) RMA resulting from the vegetation clearance* or land disturbance* or cultivation*.</p> | <p>Discretionary</p> | | |
| <p>12-5A Vegetation clearance*.</p> | <p>Except as regulated by Rule 12-6, any vegetation clearance*, land disturbance*, cultivation* or forestry* pursuant to s9(2) RMA, that is on land with a slope of 25% or greater, or that does not meet the conditions[^], standards or terms of Rules 12-1A and 12-1, 12-2, 12-3 or 12-4 and any ancillary: (a) disturbance of the bed[^] of a river[^] or lake[^] by forestry* authorised by these rules[^] pursuant to s13(1) RMA (b)(a) diversion of water[^] authorised by these rules[^] pursuant to s14(1) RMA on the land[^] where the land disturbance* is undertaken, or (b)(b) discharge[^] of sediment or slash[^] authorised by these rules[^] into water[^] pursuant to s15(1) RMA resulting from the land disturbance*.</p> | <p>Discretionary</p> | | |

| Rule | Activity | Classification | Conditions/Standards/Terms | Control/Discretion Non-Notification |
|--|--|----------------|----------------------------|--|
| <p>cultivation* or forestry* within a coastal foredune* or any activity not complying with Rules 12-2 to 12-4</p> | <p>meet the conditions^, standards or terms of Rules 12-2, 12-3, 12-4A or 12-4 and any ancillary:</p> <p>(a) disturbance of the bed^ of a river^ or lake^ by forestry* authorised by those rules^ pursuant to s13(1) RMA, or</p> <p>(b) diversion of water^ authorised by those rules^ pursuant to s14(1) RMA, or</p> <p>(c) discharge^ of sediment or slash* authorised by those rules^ pursuant to s15(1) RMA.</p> | | | |

Appendix 2

Key remaining issues

Appendix 2

| Land Disturbance Notified Version | Land Disturbance Decision Version |
|--|--|
| <p>Land disturbance is a permitted activity provided it is less than 1000m² per year.</p> <p>Land disturbance greater than 1000m² per year requires sediment control measures but is still permitted.</p> <p>Disturbance of land defined (mapped) as highly erodible land (HEL) is a controlled activity provided it exceeds 100m² per year or 100m³ per year. Control is reserved over matters generally relating to sediment control.</p> <p>Land Disturbance is a discretionary activity if it is in areas where the land slope is between 0° and 15°, within 10m of the bed of a river, lake or wetland or in areas where the slope is greater than 15° within the strip of land bordered by the bed of a river, lake or wetland and a setback distance (being not less than 10m) at which the slope reduces to 15° or 100m whichever is the lesser.</p> <p>There is an exemption for land disturbance on HEL if there is a whole farm business plan in place.</p> | <p>Land disturbance is permitted by section 9(2) of the Act without any standards provided the disturbance is less than 2500m² per year. Land disturbance greater than 2500m² per year requires a sediment and control plan but is still permitted. Land disturbance is defined in the glossary under "vegetation clearance".</p> <p>On land 28° and above (defined as a Hill Country Erosion Management Area), land disturbance is a Restricted Discretionary Activity. Discretion is reserved over matters generally relating to sediment control. The activity must not occur within 5m of the bed of a river that is permanently flowing or has an active bed width greater than 2m or within 5m of the bed of a lake, or within 5m of a wetland.</p> <p>There is no reference to whole farm business plans. The map for highly erodible land was deleted in favour of land 28° and above.</p> |
| Vegetation Clearance Notified Version | Vegetation Clearance Decisions Version |
| <p>Clearance of vegetation on land defined (mapped) as HEL is a discretionary activity if it exceeded 100m²/y per property in Coastal highly erodible land and 1ha/y per property in hill country unless the land is less than 20° in which case it</p> | <p>Vegetation Clearance is permitted unless the activity occurs on land 28° and above in which case it is a Restricted Discretionary Activity for the clearance of 1ha or greater per property per 12 month period of woody vegetation if the area</p> |

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| <p>is permitted.</p> <p>Vegetation clearance is also a discretionary activity if it is in areas where the land slope is between 0° and 15°, within 10m of the bed of a river, lake or wetland or in areas where the slope is greater than 15° within the strip of land bordered by the bed of a river, lake or wetland and a setback distance (being not less than 10m) at which the slope reduces to 15° or 100m whichever is the lesser.</p> | <p>to be cleared is greater than 70%. The activity must not occur within 5m of the bed of a river that is permanently flowing or has an active bed width greater than 2m or within 5m of the bed of a lake, or within 5m of a wetland.</p> |
| <p>Cultivation – Notified Version</p> | <p>Cultivation – Decisions Version</p> |
| <p>Cultivation falls under the definition of land disturbance and is managed in the same way as what is described in the Land Disturbance summary above.</p> | <p>Cultivation is a permitted activity when undertaken within a distance of 5m of the bed of a river that is permanently flowing or has an active bed width greater than 2m or within 5m of the bed of a lake, or within 5m of a wetland. This is provided adequate controls are in place to minimise sediment run-off to water and the activity is not undertake within a coastal foredune.</p> <p>Cultivation in all other areas is permitted under section 9(2) of the Act with no performance standards.</p> |
| <p>Riparian Margin – Notified Version</p> <p>The riparian margin used is 10m for vegetation clearance and land disturbance activities on slopes between 0° and 15°. For steeper slopes, a distance of 100m is referred to unless the slope eases to between 0° and</p> | <p>Riparian Margin – Decisions Version</p> <p>A riparian margin threshold is used on the Restricted Discretionary Activity for vegetation clearance and land disturbance on land 28° and above. The riparian margin used is 5m. This is for all rivers that are permanently</p> |

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| <p>15° in which case a 10m setback from where the slope changes is required.</p> | <p>flowing or have an active bed width greater than 2m, lakes, and wetlands. If the 5m distance can not be complied with, the activity will be a Discretionary.</p> |
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Appendix 3

Statutory tests for land

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| Statutory tests for REGIONAL POLICY STATEMENTS | Statutory references | Assessment Narrative |
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| <p>A. General requirements.</p> <p>1. A regional policy statement should be designed in accordance with the functions of the regional council so as to achieve the purpose of the Act.</p> <p>2. When preparing its regional policy statement the regional council must give effect to any national policy statement or New Zealand Coastal Policy Statement.</p> | <p>s.59, s.61</p> | <p>The DV POP is a single document incorporating the Regional Policy Statement, Regional Plan and Regional Coastal Plan. It is designed to achieve the purpose of the Act by providing an overview of the resource management issues for the Manawatu-Wanganui Region. Chapter 5 includes the significant resource management issues for land and includes objectives, policies and methods, being a mixture of a regulatory and non-regulatory approach. These provisions will achieve the integrated management of resources.</p> <p>The provisions I have proposed will achieve the purpose of the Act. Furthermore, all matters listed in section 61 were considered in drafting of these provisions.</p> <p>National Policy Statement on Electricity Transmission 2008</p> <p>This NPS came into effect after the NV POP was notified but before the DV POP was released. However, I consider the DV POP gives effect to it in Chapter 5 which forms part of the planning framework of the RPS. It is a matter that decision-makers must have regard to when making consent decisions for activities involving land disturbance and vegetation clearance.</p> <p>National Policy Statement for Renewable Electricity Generation 2011</p> <p>This NPS came into effect after both the NV POP and DV POP were released. However, I consider the DV POP gives effect to it</p> |

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| | <p>in Chapter 5 which forms part of the planning framework of the RPS. It is a matter that decision-makers must have regard to when making consent decisions for land disturbance and vegetation clearance.</p> <p>New Zealand Coastal Policy Statement 2010 (NZCPS)</p> <p>The NZCPS contains objectives and policies relating to land disturbance in the coastal environment. It came into effect after both the NV POP and DV POP were developed. The NV POP, Chapter 9 was developed to give effect to the previous NZCPS. Chapter 17 (Activities in a Coastal Marine Area) and Schedule H, together with Chapters 11, 11A and 18, and the relevant definitions in the Glossary, are the Regional Coastal Plan as required by s64 of the RMA</p> <p>The NZCPS is relevant to the extent that land disturbance within coastal foredunes is regulated under Chapter 12. The DV POP gives effect to the NZCPS in Chapter 9 Coast.</p> <p>National Policy Statement for Freshwater Management 2011</p> <p>The NV POP and DV POP were produced prior to the NPS on Freshwater Management 2011 coming into effect. The RPS gives effect to the NPS through those provisions in Chapter 5 of the POP specifically where they set out to manage accelerated erosion which can have significant adverse effects on water quality. The specific objectives of the NPS that are relevant are Objectives A1 and C1 which both deal with the interactions between the use of land and the impacts on water.</p> |
| 3. When preparing its regional policy statement the regional | The mediation agreement ¹ added an advice note to Chapter 12 regarding the rules in the Plan not authorising the modification or |

¹ Memorandum Regarding Mediation Agreement dated 22 June 2011.

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| <p>council must also:</p> <ul style="list-style-type: none"> • have regard to any relevant management plans and strategies under other Acts, and to any relevant entry in the Historic Places Register and to various fisheries regulations; and to consistency with policy statements and plans of adjacent regional councils; • take into account any relevant planning document recognised by an iwi authority; and • <u>not</u> have regard to trade competition; • must not be inconsistent with a water conservation order | <p>s.61(1)</p> <p>s.61(3)</p> <p>s.62(3)</p> | <p>disturbance of any archaeological or registered waahi tapu site. The provisions of the Historic Places Register have been taken into account.</p> <p>It is considered that policy statements and plans of adjacent regional councils be considered as a cross boundary issue. Cross boundary issues are dealt with in DV POP, Chapter 10A.</p> <p>In this region MWRC is aware of two iwi resource management plans</p> <ul style="list-style-type: none"> • Ngati Rangī Waterways document (2002) • Ngati Tuwharetoa Environmental Iwi Management Plan (2003). <p>These documents were taken into account during the drafting of the RPS provisions for Chapter 4. Table 4.1 in Chapter 4 sets out the Resource Management Issues of Significance to hapu and iwi and the relevant chapter of the POP that addresses those issues. I note that there are a number of references in Table 4.1 to Chapter 7. Those that relate to land disturbance and vegetation clearance are Issues (a), (c), (d), (e), (h), (i), (ia), and (j).</p> <p>No trade competition situations identified.</p> <p>Two water conservation orders exist for the Manawatu-Wanganui Region. These are given effect in the DV POP Chapters relating to water and indirectly relevant to the provisions for land disturbance and vegetation clearance.</p> |
| <p>4. The regional policy statement must be prepared in accordance with any regulation;</p> | <p>s.61(1)</p> | <p>There are no regulations identified.</p> |

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| <p>5. The formal requirement that a regional policy statement <u>must</u> also state:</p> <ul style="list-style-type: none"> • The significant resource management issues for the region; • The objectives, policies and methods; • The principal reasons for adopting the objectives, policies and methods and; • the environmental results anticipated from the implementation of the policies and methods; • The processes to be used to deal with cross-boundary issues; • The local authority responsible for specifying objectives, policies and methods for the control of the use of land relating to natural hazards, hazardous substances, and indigenous biological diversity; • The procedures to monitor the efficiency and effectiveness of the policies or methods in the regional policy statement. | <p>s.62(1)(a) s.62(1)(c-e) s.62(1)(f) s.62(1)(g) s.62(1)(h) s.62(1)(i) s.62(1)(j)</p> | <p>The DV POP RPS includes the following policy provisions for land: Relevant to Land</p> <ul style="list-style-type: none"> - Issue 5.1 Accelerated Erosion; - Objective 5-1 Managing accelerated erosion; - Objective 5-2 Regulating potential causes of accelerated erosion; -Policy 5-1 Encouraging and supporting sustainable land management - Policy 5-2A Regulation of land use activities - Policy 5-5 Supporting codes of practice, standards, guidelines, environmental management plans and providing information on best management practices <p>The methods adopted are a mix of regulatory and non-regulatory approaches. Part I of the One Plan sets out the non-regulatory methods which includes the Sustainable Land Use Initiative for hill country erosion and the Whanganui Catchment Strategy. The regulatory methods are the rule stream in Chapter 12 located in Part II of the DV POP.</p> <p>The reasons for adopting the above objectives and policies are stated in Chapter 5.7 of the POP.</p> <p>The anticipated environmental results from implementing the above provisions are listed in Chapter 5. There is only one which is to achieve a net reduction in the adverse effects on water quality, people, buildings and infrastructure caused by hill country and coastal foredune wind erosion by 2017.</p> |
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| | 4752 | <p>The process to be used to deal with cross boundary issues is set out in Chapter 10A.</p> <p>The procedures for monitoring the efficiency and effectiveness of the policies and methods in the RPS is set out in Chapter 10A.</p> |
| <p>B. Objectives [the section 32 test for objectives]</p> | | |
| <p>6. Each proposed objective in a regional policy statement is to be evaluated by the extent to which it is the most appropriate way to achieve the purpose of the Act.</p> | s.32(3)(a) | <p>The Hearing Panel made substantial changes to the policy provisions in Chapters 5 and 12. The Panel concluded² that:</p> <p><i>"We are mindful of our obligations under s 32 of the RMA to consider these issues. This has led us to ensure that the land use rules in the POP are focused on activities that have a potential to lead to more than minor adverse effects. We have also sought to develop amended rules that are easier to understand and implement. We have addressed the perception given by the notified POP that HEL encompasses much of the Region.</i></p> <p><i>There was concern expressed about the effect of WFBPs [Whole Farm Business Plans], particularly that they might somehow force people off the land. However, WFBPs are voluntary instruments and landowners are under no obligation to prepare them. Under a WFBP, there is no provision for the compulsory retirement of land and so the issue of compensation is not relevant, despite many submitters considering that to the case.</i></p> <p><i>Consequently, we have concluded that a further formal Section 32 Report is not required."</i></p> |

² Hearing Panel Reasons for Decisions Section 4.6.5 Page 4-18

| C. Policies and methods (excluding rules) [the section 32 test for policies and methods] | | |
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| 7. The policies are to implement the objectives, and the methods are to implement the policies; | s.62(1)(d) and (e) | Objectives 5-1 and 5-2 are implemented through Policies 5-1 and 5-2A. These provisions are implemented by MWRC by supporting the adoption of sustainable land management practices including through the Council's voluntary Sustainable Land Use Initiative and through rules in Chapter 12. |
| 8. Each proposed policy or method is to be examined, having regard to its efficiency and effectiveness , as to whether it is the most appropriate method for achieving the objectives of the regional policy statement: (a) taking into account: (i) the benefits and costs of the proposed policies and methods; and (ii) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, or methods; | s.32(3)(b) s.32(4) | See statutory test 6. above. |

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| E. Other statutes: | | | |
| 9. Finally regional councils may be required to comply with other statutes. | | | Other statutes identified in DV POP and provided for as appropriate, e.g., Historic Places Act 1993 |
| F. (On appeal) | | | |
| 10. On appeal the Environment Court must have regard to one additional matter – the decision of the regional council. | s.290A | | The Decisions on Submissions to the Proposed One Plan Volumes 1-5 have been provided to the Court. Reference to the Hearing Panel decisions on land is made as appropriate in this planning evidence. |

| Statutory tests for REGIONAL PLAN statements | Statutory references | Assessment Narrative |
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| A. General requirements. | | |
| 1. A regional plan (change) should be designed in accord with, and assist the regional council to carry out its functions so as to achieve the purpose of the Act. | s.30, s.63(1), s.66(1) | The DV POP is a single document incorporating the Regional Policy Statement, Regional Plan and Regional Coastal Plan. There is a clear cascade of policy provisions from the RPS to the Regional Plan. The Regional Plan contains the regulatory objectives, policies and rules to implement land provisions in the RPS. |
| 2. When preparing its regional plan (change) the regional council must give effect to any national policy statement or New Zealand Coastal Policy Statement. | s.67(3) | National Policy Statement on Electricity Transmission 2008 This NPS came into effect after the NV POP was notified but |

before the DV POP was released. However, I consider the DV POP gives effect to it in Chapter 5 which forms part of the planning framework of the RPS. It is a matter in the Regional Plan that decision-makers must have regard to when making consent decisions for vegetation clearance and land disturbance.

National Policy Statement for Renewable Electricity Generation 2011

This NPS came into effect after both the NV POP and DV POP were released. However, I consider the DV POP gives effect to it in Chapter 5 which forms part of the planning framework of the RPS. It is a matter in the Regional Plan that decision-makers must have regard to when making consent decisions for land activities.

New Zealand Coastal Policy Statement 2010 (NZCPS)

The NZCPS contains objectives and policies relating to biological diversity in the coastal environment. It came into effect after both the NV POP and DV POP were developed. The NV POP, Chapter 9 was developed to give effect to the previous NZCPS. Chapter 17 (Activities in a Coastal Marine Area) and Schedule H, together with Chapters 11, 11A and 18, and the relevant definitions in the Glossary, are the Regional Coastal Plan as required by s64 of the RMA

National Policy Statement for Freshwater Management 2011

The NV POP and DV POP were produced prior to the NPS on Freshwater Management 2011 coming into effect. The RPS gives effect to the NPS through those provisions in Chapter 5 of the POP specifically where they set out to manage accelerated erosion which can have significant adverse effects on water quality. The specific objectives of the NPS that are relevant are Objectives A1 and C1 which both deal with the interactions

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| <p>4756</p> <p>3. When preparing a regional plan (change) the regional council shall:</p> <p>(a) have regard to any proposed regional policy statement;</p> | <p>s.66(2)(a),</p> | <p>between the use of land and the impacts on water.</p> <p>The DV POP is a single document incorporating the Regional Policy Statement, Regional Plan and Regional Coastal Plan. There is a direct and demonstrable cascade of policy provisions from the RPS to the Regional Plan. The Regional Plan is the product of the RPS and contains the regulatory objectives, policies and rules to implement land management provisions in the RPS.</p> |
| <p>4. In relation to other regional plans:</p> <p>(a) The regional plan (change) must not be inconsistent with an operative regional plan for the region or a water conservation order;</p> | <p>s.66(4)(a), (b)</p> | <p>The POP Regional Plan is a complete green-fields review of the operative regional plans and will replace them when it is made operative.</p> <p>Two Water Conservation Orders exist for the Manawatu-Wanganui Region. These are given effect in the DV POP Chapters relating to water and are not directly relevant to the provisions for land management.</p> |
| <p>5. In preparing its regional plan (change) the regional council must also:</p> <ul style="list-style-type: none"> •have regard to any relevant management plans and strategies under other Acts, and to any relevant entry in the Historic Places Register and to various fisheries regulations; and to consistency with plans and proposed plans of adjacent regional councils; and to the Crown's interests in the Coastal Marine Area. •take into account any relevant planning document recognised by an iwi authority; and | <p>s.66(b), (c)</p> <p>s.66(2A)</p> | <p>Identified in DV POP and provided for as appropriate, e.g., New Zealand Waste Strategy 2002.</p> <p>MWRC is aware of two iwi resource management plans</p> |

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| <ul style="list-style-type: none"> • not have regard to trade competition; | <p>s.66(3)</p> | <ul style="list-style-type: none"> • Ngati Rangī Waterways document (2002) • Ngati Tuwharetoa Environmental Iwi management Plan (2003). <p>These documents were taken into account during the drafting of the RPS provisions for Chapter 4. Table 4.1 in Chapter 4 sets out the Resource Management Issues of Significance to hapu and iwi and the relevant chapter of the POP that addresses those issues. I note that there are a number of references in Table 4.1 to Chapter 7. Those that relate to land disturbance and vegetation clearance are Issues (a), (c), (d), (e), (h), (i), (ia), and (j).</p> <p>No trade competition situations identified.</p> |
| <p>6. A regional plan (change) must be prepared in accordance with any regulation (there are none at present) and any direction given by the Minister for the Environment</p> | <p>s.66(1)</p> | <p>There are no regulations or directions identified.</p> |
| <p>7. The formal requirement that a regional plan (change) <u>must</u> state its objectives, policies and the rules (if any) and may state other matters.</p> | <p>s.75(1)</p> | <p>The DV POP Regional Plan includes the following policy provisions for land:</p> <ul style="list-style-type: none"> - Objective 12-1 Accelerated erosion, regulation of vegetation clearance, land disturbance, forestry and cultivation - Policy 12-1A Regional rules for vegetation clearance, land disturbance, forestry and cultivation - Policy 12-1 Consent decision-making for vegetation clearance, land disturbance, forestry and cultivation <p>The rules in Chapter 12 are supported by and informed by the</p> |

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| | 4758 | Objectives and policies. |
| 7A. The formal requirement that a regional plan (change) <u>must</u> also record how it has allocated natural resource under s.30(1)(fa) or (fb) and (4) if it has done so. | s.67(5) | No allocation of natural resources in the land provisions. |
| B. Objectives [the section 32 test for objectives] | | |
| 8. Each proposed objective in a regional plan is to be evaluated by the extent to which it is the most appropriate way to achieve the purpose of the Act. | s.32(3)(a) | See statutory test 10. below. |
| C. Policies and methods (including rules) [the section 32 test for policies and methods] | | |
| 9. The policies are to implement the objectives, and the rules (if any) are to implement the policies; | s.67(1) | Objective 12-1 is implemented through Policies 12-1A and 12-1 and implemented through Rules 12-1, 12-1A (proposed), 12-3, 12-4, 12-4A, 12-5 and 12-5A. |
| 10. Each proposed policy or method (including each rule) is to be examined, having regard to its efficiency and effectiveness , as to whether it is the most appropriate method for achieving the objectives of the regional plan: | s.32(3)(b) | The Hearing Panel made substantial changes to the provisions in Chapters 5 and 12. The Panel concluded ³ that: <i>"We are mindful of our obligations under s 32 of the RMA to consider these issues. This has led us to ensure that the land use rules in the POP are focused on activities that have a potential to lead to more than minor adverse effects. We have also sought to</i> |

³ Hearing Panel Reasons for Decisions Section 4.6.5 Page 4-18

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| <p>(a) taking into account:</p> <p>(i) the benefits and costs of the proposed policies and methods; and</p> <p>(ii) the risk of acting or not acting if there is uncertain or insufficient information about the subject matter of the policies, or methods; and</p> <p>(a) if a national environmental standard applies and the proposed rule imposes a greater prohibition or restriction than that, then whether that greater prohibition or restriction is justified in the circumstances</p> | <p>s.32(4)</p> | <p>develop amended rules that are easier to understand and implement. We have addressed the perception given by the notified POP that HEL encompasses much of the Region.</p> <p>There was concern expressed about the effect of WFBPs [Whole Farm Business Plans], particularly that they might somehow force people off the land. However, WFBPs are voluntary instruments and landowners are under no obligation to prepare them. Under a WFBP, there is no provision for the compulsory retirement of land and so the issue of compensation is not relevant, despite many submitters considering that to the case.</p> <p>Consequently, we have concluded that a further formal Section 32 Report is not required."</p> <p>No standard applies.</p> |
| <p>D. Rules</p> <p>11. In making a rule the regional council must have regard to the actual and potential effect of activities on the environment.</p> <p>12. There are special provisions for rules about contaminated land</p> <p>13. There are special provisions for rules relating to maximum</p> | <p>s.68(3)</p> <p>s.68(11)</p> <p>s.68(7)</p> | <p>In recommending the rule stream attached as Appendix 2, the significance of the actual and potential effects of land disturbance, vegetation clearance and cultivation on the environment have been assessed. In having regard to these effects the specific rules put forward are considered the most appropriate for their management.</p> <p>Not applicable</p> <p>Not applicable</p> |

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| <p>or minimum levels or flows or rates of flows or rates of use of water or minimum standards for water quality or air quality, or ranges of temperature or pressure of geothermal water.</p> | <p>4760</p> | |
| <p>13A. There are special provisions relating to rules in regional coastal plans</p> | <p>s.68(8), (9), (10)</p> | <p>Not applicable</p> |
| <p>E. Other statutes:</p> | | |
| <p>14. Regional councils may be required to comply with other statutes.</p> | | <p>Other statutes identified in DV POP and provided for as appropriate, e.g., Historic Places Act 1993</p> |
| <p>F. (On appeal)</p> | | |
| <p>15. On appeal the Environment Court must have regard to one additional matter – the decision of the regional council.</p> | <p>s.290A</p> | <p>The Decisions on Submissions to the Proposed One Plan Volumes 1-5 have been provided to the Court. Reference to the Hearing Panel decisions on land is made as appropriate in this planning evidence.</p> |

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