



Proposed National Environmental Standard for Plantation Forestry: Report on Submissions and Recommendations

MPI Technical Paper No: 2017/43

ISBN No: 978-1-77665-624-0 (online)

ISSN No: 2253-3923 (online)

August 2017

Disclaimer

While every effort has been made to ensure the information in this report is accurate, the Ministry for Primary Industries does not accept any responsibility or liability for error or fact omission, interpretation or opinion which may be present, nor for the consequences of any decisions based on this information.

Requests for further copies should be directed to:

Publications Logistics Officer
Ministry for Primary Industries
PO Box 2526
WELLINGTON 6140

Email: brand@mpi.govt.nz

Telephone: 0800 00 83 33

Facsimile: 04-894 0300

This publication is also available on the Ministry for Primary Industries website at <http://www.mpi.govt.nz/news-resources/publications.aspx>

© Crown Copyright, July 2017 - Ministry for Primary Industries

1	INTRODUCTION	1
1.1	BACKGROUND	2
1.1.1	Development of the Initial NES-PF	2
1.1.2	Development of the Proposed NES-PF	2
1.2	REQUIREMENTS FOR NATIONAL ENVIRONMENTAL STANDARDS UNDER THE RMA	3
2	OVERVIEW OF SUBMISSION PROCESS	5
2.1	SUMMARY OF SUBMISSIONS RECEIVED	5
2.2	SUMMARY OF SUBMISSION POSITION	5
2.2.1	Local Government	5
2.2.2	Forestry Sector	6
2.2.3	Non-Government Organisations	6
2.2.4	Iwi authorities	7
2.2.5	Members of the Public (Private Individuals)	7
2.3	OVERVIEW OF GENERAL THEMES IN SUBMISSIONS	7
2.4	APPROACH TO ANALYSE SUBMISSIONS	8
3	GENERAL SUBMISSION SUMMARY AND ANALYSIS	10
3.1	THE EROSION SUSCEPTIBILITY CLASSIFICATION IS NOT FIT FOR PURPOSE ¹⁰	
3.1.1	Analysis	10
3.1.2	Recommendations	11
3.2	PROVIDING FOR APPROPRIATE LOCAL CONTROL TO MANAGE UNIQUE AND SENSITIVE ENVIRONMENTS	12
3.2.1	Summary of Issues Raised	12
3.2.2	Analysis	13
3.2.3	Recommendations	15
3.3	PERMITTED ACTIVITY REGIME WILL ALLOW SIGNIFICANT ADVERSE EFFECTS	15
3.3.1	Summary of Issues Raised	15
3.3.2	Analysis	17
3.3.3	Recommendations	20
3.4	PERMITTED ACTIVITY RULES AND CONDITIONS ARE NOT CERTAIN OR ENFORCEABLE	20
3.4.1	Analysis	22
3.4.2	Recommendations	25

3.5	MONITORING OF PERMITTED ACTIVITIES POSES ADDITIONAL, UNRECOVERABLE COSTS	25
3.5.1	Summary of Issues Raised	25
3.5.2	Analysis	26
3.5.3	Recommendations	28
3.6	USE OF GENETICALLY MODIFIED TREES SHOULD NOT BE ALLOWED THROUGH NES-PF	29
3.6.1	Summary of Issues Raised	29
3.6.2	Analysis	30
3.6.3	Recommendations	31
4	SUMMARY AND ANALYSIS OF SUBMISSIONS ON NES-PF ACTIVITIES	32
4.1	forestry activities and effects	32
4.2	AFFORESTATION	34
4.2.1	Summary of Issues Raised	34
4.2.2	Analysis	36
4.2.3	Recommendations	38
4.3	REPLANTING	39
4.3.1	Summary of Issues Raised	39
4.3.2	Analysis	40
4.3.3	Recommendations	41
4.4	EARTHWORKS	41
4.4.1	Summary of Issues Raised	41
4.4.2	Analysis	43
4.4.3	Recommendations	46
4.5	MECHANICAL LAND PREPARATION	46
4.5.1	Summary of Issues Raised	47
4.5.2	Analysis	48
4.5.3	Recommendations	49
4.6	FORESTRY QUARRYING	49
4.6.1	Summary of Issues Raised	49
4.6.2	Analysis	51
4.6.3	Recommendations	52
4.7	HARVESTING	53
4.7.1	Summary of Issues Raised	53
4.7.2	Analysis	55
4.7.3	Recommendations	56
4.8	PRUNING AND THINNING TO WASTE	56

4.8.1	Summary of Issues Raised	57
4.8.2	Analysis	58
4.8.3	Recommendations	58
4.9	RIVER CROSSINGS	59
4.9.1	Summary of Issues Raised	59
4.9.2	Analysis	61
4.9.3	Recommendations	62
4.10	GENERAL CONDITIONS	62
4.10.1	Summary of Issues Raised	62
4.10.1	Analysis	64
4.10.2	Recommendations	69
4.11	FISH SPAWNING	70
4.11.1	Summary of Issues Raised	71
4.11.2	Analysis	72
4.11.3	Recommendations	74
4.12	WILDING CONIFERS	75
4.12.1	Summary of Issues Raised	75
4.12.2	Analysis	76
4.12.3	Recommendations	77
5	CONCLUSION	79

List of Figures

Figure 1: Development process for National Environmental Standards under RMA.....	4
---	---

List of Tables

Table 1: Breakdown of unique submissions received on the NES-PF based on submitter type.	5
Table 2: Breakdown of submissions received on the proposal to enable council charging based on submitter type.	9
Table 3: Forestry activities within the scope of the NES-PF and their potential adverse environmental effects.	33
Table 4: Proposed setbacks for afforestation.	35
Table 5: Proposed setbacks for earthworks in NES-PF consultation document.....	42
Table 6: Recommended setbacks for earthworks.....	45

1 INTRODUCTION

The policy objective¹ of the National Environmental Standard for Plantation Forestry (NES-PF) is to:

- a) *Maintain or improve the environmental outcomes associated with plantation forestry activities nationally; and*
- b) *Increase efficiency and certainty in the management of plantation forestry activities under the Resource Management Act 1991 (RMA).* .

This is intended to be achieved by:

- a) Providing nationally consistent rules that remove unwarranted variation between regional and district rules for plantation forestry;
- b) Establishing rules that permit plantation forestry activities where it is efficient to do so, and where the activities do not have a significant adverse effect on the environment; and
- c) Allowing councils to set more stringent rules to manage unique local environmental matters and sensitive receiving environments.

To seek feedback on the subject matter of the proposed NES-PF, in June 2015 the Ministry for Primary Industries (MPI) publicly released the consultation document ‘*A Proposed National Environmental Standard for Plantation Forestry – Consultation Document*’ along with a series of technical documents that were used to develop and test the proposed NES-PF. The consultation document included a draft NES-PF rule set for eight plantation forestry activities and outlined a range of general and specific questions for submitters.

Consultation occurred from 17 June 2015 until 11 August 2015. During consultation, MPI held 18 public meetings and hui on the proposed NES-PF, and this feedback has been considered alongside the formal submissions. A total of 18,732 submissions were received on the proposal, of which 356 were unique submissions.

The purpose of this report is to summarise the comments made in submissions, and outline recommendations for the NES-PF in accordance with section 46A(4)(c) of the RMA. It is intended to provide a concise summary of the main issues raised in submissions rather than provide a detailed analysis of individual submission points. The recommendations in this report have been informed by an analysis of the range of views and issues raised in submissions, further technical work, and engagement with stakeholders in the post-consultation phase. This report has also been updated to reflect further analysis and refinement through the regulation drafting process, including feedback on an exposure draft of the NES-PF released in March 2017.

This report is structured as follows:

- **Chapter 1:** this introductory chapter provides an overview of the background to the development of the NES-PF and the process to develop a NES under the RMA;
- **Chapter 2:** provides an overview of the submission process, and the nature and number of submissions received;
- **Chapter 3:** provides an overview of the six main, general themes raised in submissions, an analysis of those issues, and recommendations to respond to those issues; and

¹ This policy objective was refined post consultation to provide more emphasis on maintaining and improving environmental outcomes rather than achieving more certain environmental outcomes. The certainty and cost-effectiveness/efficiency aspects of the policy objective are largely consistent with objectives of the proposal in the 2015 consultation document.

- **Chapter 4:** provides an overview of the issues raised in submissions in relation to the eight plantation forestry activities and other specific aspects of the proposed NES-PF rule set, an analysis of those issues, and recommendations to respond to those issues.

1.1 BACKGROUND

1.1.1 Development of the Initial NES-PF

In 2009, the Ministry for the Environment (MfE) began work to assess the extent to which a National Environmental Standard (NES) could increase consistency in the way that plantation forestry is managed through district and regional plans around New Zealand.

Between 2009 and 2012, MfE developed draft proposals for an NES for plantation forestry. The initial proposals were consulted on in 2010² followed by further consultation on a revised version in 2011³. Analysis and consultation during this period identified a range of issues that indicated further work on the proposed NES was required. Some of the main issues raised through this initial consultation phase included:

- The appropriateness of an ‘activity based’ NES v ‘effects based’ NES;
- Concern about the ‘ability to be more stringent’ under the NES-PF;
- Concern that the scale of mapping in the Erosion Susceptibility Classification (ESC) does not provide sufficient certainty or accuracy; and
- Concerns about establishing a permitted baseline for some of the activities covered by the NES (e.g. earthworks) that could also apply to other land use activities.

In 2013, two consultation documents were released outlining a package of proposals to reform the RMA and New Zealand’s system for freshwater management. Cabinet subsequently deferred work on the proposed NES-PF, partly due to the potential overlap with this wider programme of resource management and freshwater reforms. At the same time, MPI was directed to continue to work with industry groups and stakeholders to explore complementary measures to address forestry issues, building on the work done to date.

1.1.2 Development of the Proposed NES-PF

From 2013 to 2015, MPI subsequently undertook further analysis of options to address forestry issues. This identified an unwarranted degree of variation in the way plantation forestry activities are controlled in regional, district and unitary plans. Unwarranted variation in this context has been described as “*variation that does not provide any discernible environmental, economic, social or cultural benefit and imposes a cost on forestry sector participants (not just forestry operators)*”. As a result, forestry sector participants are faced with operational uncertainty and environmental outcomes are uncertain. This can also lead to higher than necessary costs for councils, local communities, environmental Non-Governmental Organisations (NGOs), and central government agencies.

Further analysis by MPI confirmed a NES as the preferred option to address the problem of unwarranted variation. Other options considered, including a National Policy Statement and

² Ministry for the Environment (2010), ‘Proposed National Environmental Standard for Production Forestry – Discussion Document’, refer <http://www.mfe.govt.nz/publications/rma/proposed-national-environmental-standard-plantation-forestry-discussion-document-9>

³ Ministry for the Environment (2011), ‘Proposed National Environmental Standard for Plantation Forestry: Information booklet on the revised proposal’, <http://www.mfe.govt.nz/publications/environmental-reporting/proposed-national-environmental-standard-plantation-forestry>

National Planning Template, had limitations in that they would not achieve the same level of consistency or certainty within the desired timeframes⁴.

When developing the proposed NES-PF, MPI undertook extensive engagement with a number of stakeholders. This included engagement with:

- A NES-PF Stakeholder Working Group (SWG);
- Regional councils who provided input through their special interest groups in 2014;
- Focus group meetings with territorial authority representatives;
- Workshops with members of the Forest Owners Association;
- Hui with iwi authorities that have an interest in plantation forestry; and
- Meetings with other specialist interested parties on an ad hoc basis.

A revised cost-benefit analysis was also undertaken by the New Zealand Institute for Economic Research (2014), which focused on economic benefits and costs (excluding environment) and concluded that the benefits of the revised NES-PF would outweigh the costs. An environmental impact assessment was also undertaken by Scion (2015) which concluded that the NES-PF will result in positive environmental benefits compared to the status quo and a higher benefit to cost ratio than that estimated by New Zealand Institute for Economic Research. As a result of this further technical work and engagement, the Government approved public consultation on the subject matter of a proposed NPS-PF.

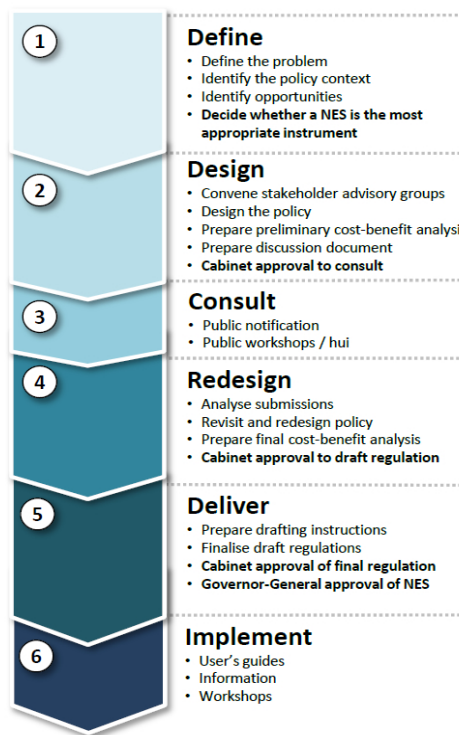
The proposed NES-PF was set out in a discussion document entitled *A National Environmental Standard for Plantation Forestry*, with supporting information that was released on the MPI website. Public consultation took place over an eight week consultation period that closed on 11 August 2015.

In April 2017, the Government amended the RMA to include an enabling power in the NES provisions. If used, this would enable councils to set charges to monitor permitted activities. As a result of this new RMA provision, the Government undertook public consultation on a proposal to include this enabling power in the NES-PF during a four week period that closed on 16 June 2017

1.2 REQUIREMENTS FOR NATIONAL ENVIRONMENTAL STANDARDS UNDER THE RMA

An outline of the development and amendment process for a NES is shown in Figure 1 below. MPI have completed up to stage 4, and the release of this report on submissions marks the end of the redesign stage following public consultation.

⁴ These options are set out in more detail in '*National Environmental Standard for Plantation Forestry: Regulatory Impact Statement*', June 2016.



* Text in **bold** describes key decision points

Figure 1: Development process for National Environmental Standards under RMA.

The NES development and amendment process differs from the plan-making processes undertaken in accordance with Schedule 1 of the RMA. The process to prepare a NES is set out in sections 44 and 46A of the RMA. Section 46A sets out the process for preparing national directions and this requires public and iwi authorities to be provided with an opportunity to comment on the proposed subject matter of an NES. It also requires a report to be prepared on submissions received and recommendations to the Minister on the submissions and the subject matter of the NES.

2 OVERVIEW OF SUBMISSION PROCESS

This section provides an overview of the number and nature of submissions received on the NES-PF, and the approach taken to analyse submissions (sections 2.1-2.4).

It also includes an overview of submissions received on the proposal to include an enabling provision in the NES-PF to allow councils to charge for monitoring permitted activities under the NESPF (section 2.5).

2.1 SUMMARY OF SUBMISSIONS RECEIVED ON THE NES-PF

A total of 18,732 submissions were received on the proposal, of which 356 were unique submissions. Approximately 18,000 ‘form’ submissions were received which were primarily opposed to a provision that would remove the control of Genetically Modified (GM) tree stock from local government control, which is discussed further in section 3.6. As part of the consultation, a series of 18 public meetings and hui were held throughout New Zealand, which were well attended. As part of the consultation, letters and copies of the NES-PF consultation document were also distributed to councils, iwi organisations, environmental Non-Government Organisations (NGOs) and forestry sector representatives.

Unique submissions were received from a range of different sources, with local government, the forestry sector, NGOs (including environmental organisations), and private individuals being the main submitters. Table 1 below provides an indication of the source of submissions received based on some general categories.

Table 1: Breakdown of unique submissions received on the NES-PF based on submitter type.

Submitter type	Number of submissions received
Regional councils and unitary authorities	16
District councils	26
Forestry sector	42
Non-Governmental Organisations (NGOs)	46
Iwi authorities	12
Private individual	149
Other	43
Redacted submissions ⁵	22

2.2 SUMMARY OF SUBMISSION POSITION ON THE PROPOSED NESPF

The submissions indicated that the NES-PF proposal is broadly supported by the forestry sector but there were mixed views from other submitters. Most submitters supported the policy intent of the NES-PF but some aspects of the proposal were strongly opposed, particularly by some environmental organisations and local government submitters. The sections below provide a high-level summary of the broad position of the main submitters on the NES-PF with comments from these submitters summarised in sections 3 and 4.

2.2.1 Local Government

Submissions were received by 12 regional councils, four unitary authorities and 26 district councils. Submissions from councils were mixed in terms of their level of support for the proposed NES-PF; this varied from full support to complete opposition, issue by issue. Most councils also noted their support for the submission of Local Government New Zealand

⁵ These were submitters who did not want their details to be made public.

(LGNZ) who expressed some concern with the proposed NES-PF outlined in the consultation document.

Overall, local government requested a number of changes to the NES-PF in order for them to implement it effectively and efficiently. Most feedback from local government emphasised the need for:

- Permitted activity rules and conditions to be more certain and enforceable;
- A clearer distinction between regional and district responsibilities;
- Inclusion of a cost recovery mechanism for monitoring permitted activities under the NES-PF; and
- Better alignment between the NES-PF and their existing obligations to:
 - Recognise and provide for the matters of national importance under section 6 of the RMA; and
 - Give effect to the National Policy Statement on Freshwater Management 2014 (NPSFM) and New Zealand Coastal Policy Statement 2010 (NZCPS).

2.2.2 Forestry Sector

Submissions from the forestry sector were largely supportive of the NES-PF. However, these submissions also generally identified scope to improve the draft NES-PF rule set with a number of forestry sector submissions providing useful advice on improving the certainty and achievability of the permitted activity rules and conditions.

A number of forestry operators noted that the proposed NES-PF would introduce more stringent rules than are currently in place in some of the districts and regions they operate in, and expressed concerns about the potential costs of that increased stringency. There was a general view expressed in the forestry sector submissions that it is important that the NES-PF achieves the right balance, and does not over-regulate or under-regulate forestry activities.

A number of submissions from forestry operators also noted that the NES-PF is largely based on current “good management practices” that are well established across the forestry sector in New Zealand, particularly for larger corporate operators. It was considered that these established management practices provide a logical basis for the NES-PF conditions and management plan requirements for key forestry activities. Submissions from forestry operators also made a number of specific recommendations to the rules and management plan requirements to ensure these reflected good forestry management practices.

2.2.3 Non-Government Organisations

A range of Non-Government Organisations (NGOs) provided submissions on the NES-PF including: environmental and community organisations, professional bodies, and research organisations. Submissions from these organisations expressed a mixture of support and opposition for the proposed NES-PF, and broadly canvassed the same issues raised by local government as noted above. In particular, professional planning and legal organisations highlighted issues relating to the certainty and enforceability of the permitted activity rules and conditions in the proposed NES-PF.

However, there were stronger concerns raised from some organisations about the environmental impact of the NES-PF. In particular, they expressed concerns about the shortcomings of the risk management tools in the NES-PF, and that the permitted activity regime would not lead to good environmental outcomes. Environmental NGOs also strongly opposed the NES-PF’s proposal to allow the planting of genetically modified (GM) tree species.

2.2.4 Iwi authorities

Iwi authorities raised a number of issues with the proposed NES-PF with a general concern about whether the rules were robust enough to provide good environmental outcomes. This is consistent with the view expressed by environmental NGOs. Some iwi submitters recommended that the NES-PF be amended to provide better protection of waterways, culturally significant sites and other taonga. Some iwi submitters also expressed strong concerns about the provision for GM tree species within the NES-PF, stating their opposition to GM species within their rohe.

Submissions from iwi also highlighted the importance of the Treaty of Waitangi and the need to ensure the provisions of the NES-PF are consistent with the principles of the Treaty of Waitangi and existing arrangements under Treaty Settlement legislation. Other concerns expressed in submissions include the lack of engagement with iwi in developing the NES-PF, and a desire for more direct engagement in the further development of the NES-PF.

The Government recognises the importance of the Treaty of Waitangi and engaging with iwi when developing national instruments under the RMA. Hui were held as part of the formal consultation process and engagement with iwi will continue in the further development of the NES-PF to ensure it meets their needs and the Crown's Treaty obligations. Iwi concerns about the robustness of the NES-PF rule set to promote good environment outcomes and the provision for GM tree species are discussed in section 3.

2.2.5 Members of the Public (Private Individuals)

A large portion of the submissions from individual members of the public were opposed to the proposed NES-PF, particularly in regards to the proposal to allow the use of approved GM tree species and the permitted activity approach of the NES-PF. The general themes of public submissions in opposition to the NES-PF were similar to those offered by the professional bodies and local government.

2.3 OVERVIEW OF GENERAL THEMES IN SUBMISSIONS ON THE NES-PF

The analysis of submissions identified six broad themes that relate to the NES-PF overall. These six general themes are:

- The Erosion Susceptibility Classification is not fit-for-purpose;
- The need to allow for appropriate local control to manage special and unique environments;
- The permitted activity regime will allow significant adverse effects;
- The permitted activity conditions are not sufficiently certain or enforceable;
- Councils need the ability to recover costs of monitoring activities permitted under NES-PF; and
- The use of GM trees should not be allowed by a NES-PF.

Section 3 provides a summary of comments made in submissions in relation to these broad themes. In addition, submitters provided detailed comments and recommended changes to the rules and conditions for the eight forestry activities in the proposed NES-PF. Section 4 provides a summary of these comments as they relate to each forestry activity.

Some submitters raised concerns about the NES-PF generally, questioning the extent of the problem and stating that the NES is not the most appropriate tool to address the problem of unwarranted variation in the management of plantation forestry.

As outlined in section 1.1.2, there has been extensive consideration of different options to address the problem of unwarranted variation that lead to the identification of an NES as a

preferred option. These different options were outlined in the NES-PF consultation document and discussed in more detail in the 2015 Regulatory Impact Statement for the NES-PF, which assessed different options against first and second-order criteria⁶. Further analysis and technical work in the post-consultation phase has confirmed the NES-PF as the preferred option to address the problem of unwarranted variation. This analysis of the different options is outlined in the updated Regulatory Impact Statement⁷, so is not repeated in this report.

2.4 APPROACH TO ANALYSIS OF SUBMISSIONS ON THE NES-PF

Following formal consultation on the NES-PF, MPI worked with a number of stakeholder and subject matter experts to address the issues identified through consultation and to refine the NES-PF. In summary, this involved:

- *Further Technical Analysis*: further technical research and advice was sought in a number of areas. This included technical reviews and reports on:
 - Reclassification of the ESC from Landcare Research; and
 - Report on Accuracy of the Fish Spawning Indicator by Allibone (2016).
- *Engagement with Stakeholder Working Group*: the NES-PF Stakeholder Working Group⁸ membership was widened to include more local government and environmental perspectives. The Stakeholder Working Group then provided technical input and advice on the issues raised in submissions, and potential options to respond to those issues, through a series of workshops and ongoing communication on particular issues;
- *Direct Engagement with Key Stakeholders*: MPI undertook direct engagement with councils, forestry sector representatives, and environmental organisations to better understand the concerns raised in their submissions and identify pragmatic solutions to respond to those issues;
- *Engagement with Regional Council Special Interest Groups*: MPI engaged with existing regional council groups to better understand and respond to the issues raised by regional councils in their submissions;
- *Revised Cost Benefit Analysis and Environmental Effects Assessment*: recommended changes to the NES-PF have been tested through a revised cost benefit analysis and more detailed environmental effects assessment to ensure the revised rule set will deliver good environmental and economic outcomes. This includes:
 - Report on ‘*Plantation Forestry Economic Analysis – Revisions with new information on proposed National Environmental Standard*’, prepared by NZIER and MWH (2016); and
 - Report on an ‘*Evaluation of Effectiveness of NES on Environmental Outcomes*’, prepared by Boffa Miskell (2016).
- *Two independent reviews of the revised NES-PF*: MPI commissioned two reviews from a planning and forester’s perspective to review the revised indicative rule set and also the exposure draft to provide suggestions on a range of matters including the appropriateness of the jurisdiction applied to rules and for added clarity and workability of the proposed NES-PF rules.

This technical analysis and engagement has informed the analysis of issues raised in submissions and the recommendations in this report for a revised NES-PF.

⁶Ministry for Primary Industries (2015), ‘*National Environmental Standard for Plantation Forestry – Regulatory Impact Statement*’, June 2015.

⁷MPI (2016), ‘*Regulatory Impact Statement: A National Environmental Standard for Plantation Forestry*’, June 2016

⁸Members on the Stakeholder Working Group include: Gisborne District Council, Upper Hutt City Council, Bay of Plenty Regional Council, Tasman District Council, Forest and Bird, Raukawa Trust, Farm Forestry Association, PF Olsen, Ernslaw One, Hancock Forest Management, Timberlands.

2.5 SUMMARY OF SUBMISSIONS RECEIVED ON PROPOSAL TO ENABLE COUNCIL CHARGING TO MONITOR PERMITTED ACTIVITIES IN THE NES-PF

A total of 58 submissions were received during consultation on the proposal to enable councils to charge for monitoring permitted activities in the NES-PF.

Table 2: Breakdown of submissions received on the proposal to enable council charging of activities permitted under NES-PF based on submitter type.

Submitter type	Number of submissions received
Regional councils and unitary authorities	18
District councils	
Forestry sector	21
Non-Governmental Organisations/community groups	9
Iwi authorities	3
Private individual	7
Other	

Submitters were divided in their responses, with most councils, individuals and non-governmental organisations in favour of the use of the provision, and foresters largely opposed. A summary and analysis of these submissions is provided in section 3.5 of this report.

3 GENERAL SUBMISSION SUMMARY AND ANALYSIS

This section summarises comments made by submitters on the NES-PF based on the six general submission themes identified above. To a greater or lesser extent, each of the themes are relevant to all eight plantation forestry activities proposed under the NES-PF. As such, section 4 does not repeat the discussion and analysis of these general themes apart from where they specifically relate to a forestry activity.

3.1 THE EROSION SUSCEPTIBILITY CLASSIFICATION IS NOT FIT FOR PURPOSE

The Erosion Susceptibility Classification (ESC) is a core component of the risk management framework applied through the NES-PF. It provides a screening tool to determine erosion risk in different landscapes, so that appropriate levels of control can be set to manage the risks for each of the forestry activities, including whether a resource consent is required or not.

A number of submitters raised concerns that the ESC is not fit for purpose due to its level of accuracy and spatial limitations. In particular, concerns were raised about the ESC's level of precision in identifying risks, particularly in steepland forests at an operational scale. Submitters expressed a view that the scale of mapping of the ESC may not allow for accurate identification of specific erosion risk features and pockets of steeper land. This could result in site-specific erosion risks that are under-rated by the ESC.

Submitters also raised specific concerns that the NES-PF would permit forestry activities on highly erosion prone land (the 'Orange Zone'), and increase the potential for significant adverse effects to arise from higher risk forestry activities (harvesting, earthworks, and mechanical land preparation) on this land. Submitters noted that the Orange Zone is comprised of a high variety of land forms and erosion types, and recommended this zone be further refined to allow for appropriate levels of control and rules to match the specific nature and risks related to erosion, and slash and debris deposition. This was a particular concern from some local government submitters in regions with substantial areas of Orange Zone land.

Other concerns raised in submissions in relation to the ESC include:

- The ESC should incorporate the probability and impact of high intensity rainfall events and climate change;
- The ESC is focused on erosion susceptibility and does not address the 'downstream' risks of sediment, slash and debris delivery to receiving environments; and
- The reliance on the New Zealand Land Resource Inventory (NZLRI) to derive the ESC ratings does not adequately represent erosion susceptibility.

However, there were some submitters who indicated a broad level of support for the use of the ESC as a mechanism to identify erosion risk, and to assign appropriate thresholds for control through the NES-PF, provided that it was implemented well. A number of submitters also emphasised the importance of monitoring the effectiveness of the ESC and updating and refining its spatial mapping as new technologies and information become available.

3.1.1 Analysis

Concerns raised about the adequacy of the ESC were mainly from submitters in regions where recent storm events had resulted in active erosion on recently harvested steepland areas, leading to sedimentation and deposition of forestry debris in waterways and on beaches. It is not clear whether these submitters recognise the role that forestry plays in stabilising soils and reducing sediment runoff during the majority of the forestry cycle.

However, some shortcomings in the ESC are acknowledged, particularly in relation to higher risk erosion areas on steepland. To refine the ESC mapping, MPI commissioned Landcare Research⁹ to undertake further analysis of the ESC Orange Zone (approx. 360,000 hectares of plantation forestry land). This analysis subdivided the ESC Orange Zone into 22 erosion terrains based on combinations of erosion processes, geology and topography. This allowed the erosion terrains with the highest level of risk within the ESC Orange Zone to be identified, creating a subcategory to recognise the risk associated with these terrains. This subcategory was then reclassified as Red Zone in the ESC for the purposes of managing forestry activities under the NES-PF.

The implication of this is that higher risk forestry activities (harvesting (class 8e), earthworks, quarrying and mechanical land preparation) will be subject to a resource consent process. It is also recommended that resource consent activity status extends to afforestation greater than 2 hectares in ESC Red Zone to ensure that an assessment of potential effects can be “front-loaded” at the time of planting, to avoid future legacy issues.

The changes from the 2016 Landcare Research report reclassified approximately 200,000 hectares of plantation forestry in the Orange Zone to the Red Zone, compared to the area proposed in the NES-PF consultation document. This change will directly respond to local concerns expressed in:

- Gisborne and Hawke’s Bay, by requiring consent for activities most at risk of slash and debris mobilisation; and
- Marlborough, Tasman, Coromandel and Northland, by requiring resource consent on land with the potential to generate fine sediment discharges to nearby estuarine and coastal environments.

Overall, the ESC is considered to provide a key tool for identifying areas where more control is required over forestry activities, and it will provide improved information base than many councils and landowners currently have.

However, it is recognised that future improvements to the ESC will be required to improve its accuracy for the management of forestry erosion risks. For example, there have been further changes to the ESC since the 2016 reclassification to extend the ESC classification over the whole of New Zealand, improve precision along the margins of lakes, rivers and the coast, and further refinement of the ESC classes for some land units in the ESC High Risk and ESC Very High Risk classes.

3.1.2 Recommendations

To address issues raised in submissions in relation to the ESC, it is recommended that:

- Higher risk land within the ESC Orange Zone is reclassified as ESC Red Zone with resource consents required for afforestation, earthworks, harvesting and mechanical land preparation in areas of land that are identified as posing the greatest environmental risk (through the delivery of slash, debris and fine sediment to receiving environments);
- Develop comprehensive guidance to councils and the industry on how the ESC works within the NES-PF rule framework, to manage the risk of sediment and debris delivery to waterways and the coastal environment; and
- Provide GIS based ESC mapping layers for use in conjunction with the regulations

⁹ Basher L, Barringer J, Lynn I 2016. Update of the Erosion Susceptibility Classification (ESC) for the proposed NES for Plantation Forestry: subdividing the High and Very High ESC classes. MPI Technical Paper No. 2016. Prepared by Landcare Research for the Ministry for Primary Industries (Landcare Research Contract Report LC2472).

3.2 PROVIDING FOR APPROPRIATE LOCAL CONTROL TO MANAGE UNIQUE AND SENSITIVE ENVIRONMENTS

3.2.1 Summary of Issues Raised

A number of submitters raised concerns that the NES-PF does not allow councils to effectively manage the effects of forestry activities on a number of locally unique and sensitive environments. In particular, submitters raised concerns that a number of significant areas recognised under sections 6 and 7 of the RMA were not adequately recognised through the NES-PF's risk management approaches and permitted activity rules. A consequence may be that these environments are not sufficiently protected from the adverse effects of forestry activities. Submissions (particularly from local government) also highlighted the fact that councils have an active duty to identify and protect these environments under sections 6 and 7 of the RMA, and the proposed NES-PF may conflict with this.

Submitters also raised concerns about the lack of alignment between the NES-PF and other national instruments under the RMA. This was highlighted as a particular issue in relation to the National Policy Statement on Freshwater Management 2014 (NPSFM), but also in relation to the New Zealand Coastal Policy Statement 2010 (NZCPS), and the National Environmental Standard for Human Drinking Water Sources 2008.

Submissions (particularly from local government) emphasised that the NPSFM and NZCPS place an active duty on councils to recognise and protect particular waterbodies and certain areas within the coastal environment. Meeting these obligations will require additional controls on forestry activities in some circumstances. However, submitters raised concerns that the NES-PF does not adequately allow councils to meet these obligations. There was a concern that this could result in conflicting implementation issues for councils and also potentially result in significant adverse effects on special and sensitive freshwater and coastal receiving environments.

Overall, submitter comments in relation to the protection of special and sensitive environments can be grouped into two main themes which are summarised below.

The ability to be “more stringent” under the NES-PF

The majority of submitter comments under this theme were focused on the ability to be ‘more stringent’ under the NES-PF, which is provided for under section 43B of the RMA¹⁰. The draft NES-PF rule set included a list of “*matters where councils can apply more stringent rules*”, and submitters were asked for specific feedback on whether it was appropriate that local decision-making be retained for these matters.

Submitters expressed a range of views on the proposed matters where councils would have the ability to be more stringent under the NES-PF. Some expressed support for the proposed scope of matters where more stringent rules may apply, noting that these cover a number of matters of national importance under section 6 and aligns with the NPSFM. There were other submitters, particularly from the forestry sector, who considered that the scope of stringency in the proposed NES-PF was too broad and could potentially undermine the national consistency and certainty objectives of the NES-PF.

However, the majority of submissions expressed concern that the ability to be more stringent under the proposed NES-PF was too limited. This was a particular concern for some local government submitters and environmental NGOs. Specific issues raised in relation to the

¹⁰ Section 43B allows a rule in a regional and district plan to be more stringent than a NES provided the NES expressly provides for this.

protection of special environments and the ability to be more stringent under the NES-PF include:

- The ability to be more stringent under the NES-PF in relation to the NPSFM is too limited as it only applies when freshwater limits are reached and in relation to outstanding or significant waterbodies;
- The NES-PF does not adequately recognise or manage the effects of forestry on the coastal environment. The generic 30 metre setback from the Coastal Marine Area as a permitted activity condition was seen as inadequate by some submitters, and it was suggested that councils should be allowed to be more stringent to protect the coastal environment from the effects of forestry activities (including cumulative effects). It was also suggested that the NES-PF should provide councils with greater flexibility to be more stringent in relation to the NZCPS, consistent with the ability to be more stringent proposed in relation to the NPSFM;
- The ability to be more stringent is poorly defined, particularly in relation to section 6 matters, and needs to be clarified to avoid uncertainty and implementation issues;
- Support for the ability to be more stringent to protect cultural and heritage sites. However, there is a concern that this is limited to sites that have been identified in plans and many cultural and heritage sites have not been identified in plans but they still have significant values that should be protected; and
- There are many important landscapes recognised for their visual amenity value under section 7(c) of the RMA that do not meet the outstanding natural landscape threshold specified in the NES-PF. The ability to be more stringent should extend to these other important landscapes where these areas are identified in regional and district plans.

The requirement to map areas under section 6 for more stringent rules to apply

The NES-PF proposed that more stringent rules could prevail in relation to areas of outstanding natural features and landscapes (section 6(b)), and areas of significant indigenous vegetation, and significant habitats of indigenous fauna (s6(c)), but only when these areas are designated (mapped) in plans¹¹. A number of submitters, particularly from local government, raised concerns about the requirement for certain areas to be mapped (e.g. areas of significant indigenous vegetation recognised under section 6(c)) in order for more stringent rules to apply. There were concerns from some local government submitters that this would undermine and override other valid existing practices that are used to define these areas (e.g. criteria, descriptions etc.) and potentially result in significant adverse environmental effects on these areas.

3.2.2 Analysis

The ability to be more stringent under the NES-PF

Analysis supports a number of the concerns raised about the ability to be more stringent under the NES-PF, particularly in relation to areas recognised under section 6 of the RMA and other national policy instruments. It is important that the NES-PF does not conflict with councils' responsibilities in relation to these matters. It is therefore recommended that the ability to be more stringent under the NES-PF be clarified and expanded to specifically provide for:

- More stringent rules to prevail where these relate to section 6 matters of particular relevance to forestry. This includes:

¹¹ However, it recognised the terminology in the draft NES-PF rule set was somewhat inconsistent with terms such as 'identified', 'designated (mapped) areas' all being used in relation to section 6 matters.

- Outstanding natural areas and landscapes recognised under section 6(b) of the RMA;
- ‘Significant Natural Areas (SNAs)’ – areas of significant indigenous vegetation and significant habitats of indigenous fauna recognised under section 6(c) of the RMA;;
- More stringent rules to prevail when necessary to give effect to the NPSFM and NZCPS; and
- More stringent rules to prevail when they protect certain locally unique and sensitive environments (Separation Point granite soils, geothermal areas, karst geologies, and certain sources of human drinking water). . .

Broadening the ability for councils to apply more stringent rules in these circumstances will ensure that the NES-PF does not undermine the protection of special and sensitive areas where such rules are in place. Councils will also be able to introduce more stringent rules through future plan changes to protect these environments provided they meet the tests in section 32¹².

Rather than include effects on historic heritage (section 6(f)) and Māori cultural heritage (section 6(e)) as matters where councils can exercise greater stringency, it is recommended that these matters are left out of scope of the NES-PF. This means that councils will still have the ability to manage the effects of forestry on sites of cultural and heritage value through their plans. This is discussed in more detail in relation to the general conditions related to archeology in section 4.10.

It is recognised that some councils identify landscapes within their plans that are not recognised as outstanding under section 6(b) but are still valued for their visual amenity value under section 7(c) of the RMA. These landscapes may include active areas of plantation forestry which continue to have visual amenity value throughout the forestry life-cycle. Rather than allow more stringent rules to apply to all visual amenity landscapes identified under section 7(c) of the RMA, it is recommended that the NES-PF places controls on new plantation forestry (i.e. afforestation) in these landscapes. This is discussed more in the summary of submissions on afforestation in section 4.2.

It is recognised that the ability to be more stringent under the NES-PF is an area which may create some uncertainty, particularly at the early stages as councils determine what changes to their plans are required to recognise the NES-PF. Comprehensive guidance on the ability to be more stringent is therefore recommended to be released in advance of the regulations coming into force to ensure the policy intent is clear and assist with implementation.

The requirement to map areas under section 6 for more stringent rules to apply

The requirement for outstanding natural landscapes and significant natural areas to be mapped in order for more stringent rules to apply was intended to achieve high levels of certainty for foresters. It also reflects the fact that (accurate) mapping of high value or sensitive areas in plans is recognised as good practice under the RMA. However, further analysis has confirmed a number of potential issues with this approach.

While mapping is recognised as good practice, it is also often contentious and expensive, particularly where disputes between councils and landowners results in litigation. It is also recognised that many councils rely on other techniques to define areas of significance (e.g. criteria and descriptions) which have often been developed and tested through substantive community and legal processes. There are also valid concerns raised about the costs of

¹² In particular, section 32(4) of the RMA which requires councils to demonstrate whether provisions more stringent than in a NES are justified in the circumstances of the region or district.

requiring areas recognised under section 6 of the RMA to be mapped as these costs can be significant and who should pay for this.

Overall, this analysis suggests that requiring mapping as a precursor to protection could undermine existing practice, override existing protection of areas that are not currently mapped, and potentially result in significant adverse environmental effects. It is therefore recommended that more stringent rules should be allowed to protect areas recognised under section 6(b) and 6(c) of the RMA where they are identified through a map, schedule, or description of the area. It is also recommended that more stringent rules should be allowed to protect areas of significant indigenous vegetation or significant habitat of indigenous fauna can identified using significance criteria. .

3.2.3 Recommendations

To address the concerns raised in submissions in relation to the ability to be more stringent and the protection of special and sensitive environments, it is recommended that there should be flexibility for council rules to apply as follows:

- The ability to be more stringent under the NES-PF is broadened to allow more stringent rules to apply where these:
 - Relate to the protection of outstanding natural areas and landscapes (section 6(b)), and areas of significant indigenous fauna and flora (section 6(c));
 - Give effect to the NPSFM or NZCPS; and
 - Manage certain locally unique and sensitive environments..
- More stringent rules can to apply to outstanding natural areas and landscapes (section 6(b)), and areas of significant indigenous fauna and flora (section 6(c) where they are identified in plans through a map, schedule, or description of the area. More stringent rules can also apply to areas of significant indigenous vegetation or significant habitat of indigenous fauna identified using significance criteria; ;
- A number of activities and effects are left out of the scope of the NES-PF, including the protection of sites of cultural and historic heritage value under sections 6(e) and 6(f) of the RMA, which will allow regional and district plans to continue to manage these activities and effects; and
- Additional controls are placed on afforestation within landscapes that are recognised for their visual amenity value to allow councils to manage the effects on these landscapes (as discussed in section 4.2).

In addition, it is recommended that comprehensive guidance and training is delivered to ensure the ability to be more stringent is exercised in accordance with the policy intent, and appropriate changes are made to regional and district plans so that it is clear where more stringent rules apply in relation to forestry activities.

3.3 PERMITTED ACTIVITY REGIME WILL ALLOW SIGNIFICANT ADVERSE EFFECTS

3.3.1 Summary of Issues Raised

A common theme in submissions was that the NES-PF permitted activity rules and conditions are not robust enough in their current form, and will result in poor environmental outcomes. Some submitters also raised concerns that the NES-PF rules may permit activities with the potential for “significant adverse effects” noting that this is contrary to section 43A(3)(b) of

the RMA¹³. This was a particular concern from some local government submitters and from environmental organisations generally. A summary of the issues raised is provided below based on four broad sub-themes.

Robustness of the permitted activity regime

Comments made in submissions in relation to the robustness of the permitted activity regime under the NES-PF are summarised below¹⁴:

- The presumption that forestry activities should be permitted activities is not justified and this may prevent councils from managing the adverse environmental effects of forestry activities and being responsive to local environmental circumstances;
- The permitted activity regime proposed under the NES-PF places a high degree of reliance on the permitted activity conditions being effective to manage forestry activities that can have significant adverse effects on the environment;
- While resource consents have administrative costs, this process has a number of benefits including the development of site specific mitigation, information exchange between applicants and councils, provision of more certain and enforceable conditions, and a cost recovery mechanism for councils. The presumption that activities should be permitted under the NES-PF does not recognise these benefits;
- A controlled activity regime would provide more benefits than the permitted activity regime. Consent would be granted but the formal process would allow the effects to be assessed upfront, and avoid ambiguity in the interpretation of the regulations; and
- The ‘one size fits all’ permitted activity approach does not adequately reflect the complexities of the different receiving environments for forestry activities and the different scale of forestry operations across New Zealand.

Robustness of NES-PF risk management framework

A number of submitters raised concerns that the NES-PF risk management framework is not sufficiently robust to achieve good environmental outcomes. Specific concerns raised in submissions about the risk management framework under the NES-PF include:

- The approach in the NES-PF to assess risk does not take into account receiving environments and their sensitivity to the effects of forestry; and
- The risk assessment approach does not account for particular weather events which can significantly increase the adverse effects of forestry (e.g. sedimentation and slash during high rainfall events), or account for climate change.

Specific comments on each of the risk management tools are also summarised in section 3.1 (ESC), section 4.11 (fish spawning), and section 4.12 (wilding conifers).

Permitted baseline

The potential permitted baseline implications of the permitted activity regime under the NES-PF was an area that attracted a number of comments in submissions, particularly from local government. Specific comments made in submissions in relation to the permitted baseline implications of the NES-PF include:

¹³ Section 43A(3)(b) states that, if an activity has significant adverse effects on the environment, then a NES must not “state that the activity is a permitted activity”.

¹⁴ Note this section excludes consideration of those environments where the NES-PF will allow more stringent rules to apply, which is discussed above in section 3.2.

- Concern that there will be significant permitted baseline consequences arising from a NES which seeks to explicitly make activities permitted where possible. This is likely to alter the permitted baseline established under existing planning instruments in many regions and districts;
- Concern that the permitted baseline implications could go well beyond the forestry sector if there is no clear relationship between the NES-PF and section 6 matters. In particular, submitters raised concerns that if the NES-PF establishes forestry activities as permitted within areas recognised under section 6 of the RMA (e.g. an outstanding natural landscape), then it is likely that this will be cited as a permitted baseline against which a range of non-forestry activities should be assessed;
- Concern that some activities, such as river crossing, are not clearly tied to forestry activities, and this could have permitted activity implications for activities generally in terms of how riparian areas are managed; and
- Concern that the NES-PF permitted activity conditions relating to clearance and disturbance of areas of significant indigenous vegetation could be used as a permitted baseline argument when assessing proposals to damage or clear an area of significant indigenous vegetation.

Cumulative effects

Submitters commented on the potential cumulative effects under the NES-PF stating that the permitted activity regime doesn't allow for these effects to be adequately considered or managed. Specific comments made in submissions in relation to cumulative effects include:

- The NES-PF does not provide sufficient consideration of the cumulative effects of successive forestry cycles or allow a catchment wide consideration of forestry activities;
- The permitted activity approach under the NES-PF does not allow for the consideration and management of the cumulative effects of forestry activities that can occur through a resource consent process; and
- The NES-PF only controls the effects of forestry activities at an individual location, which does not allow councils to manage the cumulative effects of forestry within a catchment. These cumulative effects are often of more importance, particularly the cumulative effects of sediment discharge on receiving freshwater bodies and coastal environments.

3.3.2 Analysis

Robustness of the permitted activity regime

The NES-PF is based on an approach that seeks to codify established good forestry management through permitted activity conditions. Forestry activities will generally be permitted where the conditions can be achieved, with management plans required to be prepared for certain forestry activities, to encourage foresters to take a proactive approach to identify site-specific risks and mitigations. This is considered to be the most efficient and effective approach to achieve the objectives of the NES-PF, which is to achieve national consistency in the management of plantation forestry activities while maintaining or improving environmental outcomes.

The NES-PF also requires consent where permitted activity conditions cannot be met and where the risk of adverse environmental effects from forestry activities indicates the need for greater regulatory oversight (based on the risk management tools). Depending on the level of risk, it is proposed that resource consent will be required as either:

- A controlled activity, where consent must be granted with council conditions limited to matters of control specified in the NES-PF; or

- A restricted discretionary activity, where the consent authority can grant or decline an application on the grounds specified in the NES-PF. For example, where an activity poses a high risk to soil erosion in the ESC Red Zone a restricted discretionary consent is required.

It is also important to recognise that forestry activities are generally permitted in regional and district plans under the status quo. The NES-PF rule set is largely consistent with the status quo but will be more stringent in certain areas – this was highlighted as an issue by some forestry sector submitters. In this respect, the NES-PF rule set is not intended to significantly increase or decrease the current regulatory control over forestry. Rather, it is intended to ensure national consistency in the management of forestry activities to avoid unwarranted variation, while achieving good environmental outcomes.

However, feedback from submissions did highlight the importance of ensuring the revised NES-PF is fit for purpose and robust enough to ensure good environmental outcomes. In the post-consultation phase, the NES-PF rule set has been rigorously tested through further analysis of the effectiveness of the rules and extensive engagement with the forestry sector, council representatives and environmental NGOs. This work has resulted in a number of changes to the conditions and the activity status of forestry activities in some areas through the changes to the ESC outlined above, so that consent is now required in more circumstances.

An independent Assessment of Environmental Effects (AEE)¹⁵ of the revised rule set has also been undertaken to confirm the robustness of the rules, and ensure that these will deliver similar or improved environment outcomes compared to the status quo. The assessment compared the effectiveness of current council rules and the proposed NES-PF rules to manage the adverse effects of forestry activities. It was based on a review of council plans in nine regions, representing a typical cross-section of jurisdiction and environmental characteristics, including geophysical and topography characteristics which can affect sediment loads and effects on receiving environments.

This AEE concluded that while the NES-PF uses the permitted activity status extensively, the conditions are appropriate and are considered best practice management. The report also noted that local control can be exercised where necessary through the ability to be more stringent (as discussed in section 3.2 above). On this basis, the assessment concludes that the *“overall approach effectively ensures that no significant residual effects arise from activities that are permitted”*. This demonstrates that the permitted activity conditions in the NES-PF, combined with the ability to be more stringent to protect locally unique and sensitive environments, will ensure that the NES-PF will not permit forestry activities with significant adverse effects.

Specific changes to the rules for the eight forestry activities in the NES-PF outlined in section 4, are intended to make the environmental management regime under the NES-PF more robust. Collectively, it is considered that these changes will ensure the permitted activity rules in the NES-PF are suitably robust to achieve good outcomes and avoid significant adverse environmental effects.

In addition, the NES-PF will be supported by comprehensive guidance to promote good forestry management practices within the industry. This will include guidance on best management practices to assist with performance and compliance, and support the management regime proposed for higher risk forestry activities. Guidance for councils on monitoring the NES-PF will also be provided consistent with Regional Council guidance in the *‘Regional Sector Strategic Compliance Framework’*. Overall, this will provide councils

¹⁵ Boffa Miskell (2016), *“Evaluation of effectiveness of NES on Environmental Outcomes”*, prepared for Ministry for Primary Industries.

with a better understanding of where greater control is necessary, how to effectively manage the effects of forestry when consent is triggered, and how to focus compliance monitoring efforts on forestry areas and activities with the greatest risk.

Permitted baseline

The NES-PF consultation document recognised the issues raised in previous rounds of consultation in relation to the permitted baseline; any overly lenient NES provisions may create a broad permitted baseline which could undermine other planning controls. The revised permitted activity conditions were therefore intended to more tightly confine the scope of permitted activities under the NES-PF to forestry specific activities. However, it is recognised that there were areas in the draft rule set where permitted activities could potentially be considered more broadly to include non-forestry activities (e.g. quarrying, river crossing). It is recommended that these rules are refined to be more specific and clearly define the scope of forestry activities permitted under the NES-PF.

Some submitters raised concerns about the potential permitted baseline implications of the NES-PF for the protection of areas recognised under section 6 of the RMA. These concerns will largely be addressed by the recommended changes to enhance the NES-PF stringency provisions. This will broaden the ability of councils to have more stringent rules (both existing and future provisions) to protect areas under section 6 of the RMA, irrespective of how these are identified. It will also clearly define the relationship between the NES-PF and section 6 matters so that the risk of permitted baseline arguments in relation to these matters is low. In addition, the permitted activity conditions that relate to incidental damage of areas of indigenous vegetation have been more tightly constrained to ensure that an inappropriate permitted baseline is not created. These outcomes are consistent with recommendations in submissions to avoid the potential permitted baseline arguments in relation to section 6 matters. It should be noted that vegetation clearance prior to afforestation is also out of scope of the regulations, with local rules continuing to apply.

It is also important to recognise that the permitted baseline is not a mandatory test, but it is a discretion that the council may exercise. For this reason, it should not be relied on, except in very clear cases where there is a good understanding of the level of effects permitted within a district or region (both by plan rules and any relevant NES). While the NES-PF has the potential to expand the permitted baseline, councils will need to consider the NES-PF permitted activity conditions, and how to best apply the permitted baseline within their particular context. Guidance material is recommended to help councils exercise this judgement.

Cumulative effects

Most concerns in submissions in relation to cumulative effects were focused on the cumulative effects of sedimentation from forestry activities on the freshwater and coastal receiving environments. The NES-PF contains a range of controls to manage sediment discharges which are based on best practice methods. It also provides councils with the ability to manage the cumulative effects of sedimentation through the ability to be more stringent. This will enable councils to have more stringent rules to give effect to the NPSFM which requires councils to set freshwater objectives and limits for particular catchments (or Freshwater Management Units).

Through the NPSFM limit setting process, councils and their communities may identify the need to reduce sediment loads to a catchment, which may in turn require more stringent controls on forestry. The NES-PF enables this to occur provided the relevant statutory tests and considerations in section 32 and Schedule 1 of the Act are met. Guidance will also be provided to help councils align their obligations under the NES-PF and the NPSFM.

Cumulative environment effects were also considered as part of the independent Assessment of Environmental Effects (AEE) undertaken for the revised NES-PF as noted above. Overall, the evaluation concluded that the NES-PF rule set will be more effective at managing effects than the status quo, and this examined all types of effects within the scope of the NES-PF. These findings provide added confidence that cumulative effects under the NES-PF will not be a significant issue in practice. Where councils remain concerned about cumulative effects there is the potential to address that concern through the ability to be more stringent.

3.3.3 Recommendations

Make changes to the permitted activity rules and conditions in the NES-PF to ensure it delivers good environmental outcomes are outlined in section 4 in relation to each of the eight forestry activities and the general conditions. Section 3.2 also outlines how the NES-PF will ensure adequate protection of special and sensitive environments by allowing more stringent rules to prevail.

3.4 PERMITTED ACTIVITY RULES AND CONDITIONS ARE NOT CERTAIN OR ENFORCEABLE

The discussion document asked submitters whether they considered the permitted activity conditions in the NES-PF rule set were “clear and enforceable”. This question generated a high level of comment from a range of submitter groups.

Overall, a large number of submitters commented that the draft NES-PF rules were not sufficiently certain. There was a concern that this could result in implementation and enforceability issues, as well as creating a risk of legal challenge. Submitters raised concerns about both the legal and practical matters of rule certainty and enforceability. This was a particular issue for a number of local government submitters, environmental organisations, and certain professional bodies that are involved in legal and RMA planning practice.

General comments on certainty and enforceability of permitted activity rules and conditions

There were also a large number of general comments made in submissions about the uncertain, ambiguous and subjective wording of particular rules or conditions in the draft NES-PF rule set. General comments on this issue are summarised below:

- The wording of the draft NES-PF rules is uncertain or imprecise with a number of terms used that involve subjective interpretation. This language will result in permitted activity conditions that are litigious and unenforceable;
- The lack of certainty and clarity in the permitted activity conditions means that they could be interpreted differently depending on the council officer administering the rules, and the forestry operator interpreting them. This could result in inconsistent administration of the NES-PF, disagreements between foresters and councils, and compliance issues;
- All permitted activity rules and conditions should be certain and should not require councils to exercise a level of discretion – there are a number of NES-PF conditions that do not meet this test. If an evaluation or subjective interpretation is required, then this should trigger resource consent to allow that evaluation to be undertaken; and
- The NES-PF inconsistently uses terms that have a specific meaning in the context of the RMA, such as “must”, “may” and “prevent”. Such terms should be used carefully and consistently within the NES-PF rules to avoid unintended consequences.

Submitters also provided a number of useful and specific suggestions to improve the rules to assist with their interpretation and implementation. These are discussed further in section 4 in relation to the eight forestry activities.

In addition to general comments on rule certainty, submitters highlighted a number of areas in the draft rules that they considered would be problematic from a legal interpretation, administration and enforceability perspective – both for councils and industry. These matters are discussed below.

Management plan requirements

There were a large number of submitters that commented on the proposed management plan regime under the NES-PF. The draft NES-PF rules set out permitted activity conditions that require management plans to be prepared for earthworks (Forestry Earthworks Management Plan), quarrying (Quarry Erosion and Sediment Management Plan), and harvesting (Harvest Plan), and that these plans must be documented and made available to the relevant council on request¹⁶.

Submitter comments on the management plan requirements were focused on the interpretation, administration and enforceability aspects of the process. There was a general concern from some submitters that the management plan process would be problematic to administer in practice, and would not result in the desired outcomes. Comments made in submissions on this issue include concerns by local government that:

- Councils have no ability to approve or require changes to management plans. Without a review/approval process in place, councils believed they would be relying entirely on a forester's ability to insert appropriate management practices within these plans and then undertake works in accordance with the plan. There was a concern that this would provide councils with insufficient powers to require appropriate techniques, or to administer and enforce the NES-PF effectively;
- Management plans should be made available to councils as a default, unless the requirement is waived by councils. Councils should then be able to check that the management plan meets the requirements in the NES-PF before the activity can proceed. There was a concern that without this front-end auditing process, there is limited opportunity for councils to proactively avoid and mitigate adverse effects of higher risk forestry activities through the NES-PF;
- The legal basis for relying on information recorded in management plans as evidence of compliance with permitted activity conditions is unclear; and
- It will be problematic to determine compliance with permitted activity conditions that require the completion of a management plan, and works to be undertaken in accordance with the plan. It was noted in submissions that these management plans are likely to be based on good management practices that often involve some interpretation and may require specialist expert assessments in some cases.

Conversely, the forestry sector broadly supported use of management plans and templates in the NES-PF. It was noted that management plans provide a useful mechanism to describe actions to demonstrate compliance with permitted activity rules, and conditions in a site specific and relevant manner. It was also noted that the permitted activity conditions and management plans outlined in the NES-PF are based on current good practice industry standards which will help ensure good environmental outcomes.

However, comments were also made in submissions that it would be difficult for some smaller forestry operators to comply with the conditions relating to management plans as they don't have the in-house resources to prepare them. Related to this concern, submitters requested that templates and guidance be developed, particularly for those smaller forestry

¹⁶ However, the draft NES-PF conditions for the Harvest Management Plan stated this could be made available either on request or provided annually on agreement with the relevant council.

owners/operators, to provide clarity and guidance about what is required in the management plans, which will assist with compliance monitoring.

Functional overlap

There were a number of comments in submissions about the lack of certainty in the NES-PF over the split in functions between regional and district councils. It was noted that there are functional overlaps in the NES-PF between regional and district councils, particularly for issues such as earthworks and biodiversity. Some submitters commented that the proposed NES-PF lacked guidance on how responsibilities for monitoring, compliance and consenting functions that overlap are to be divided or shared between the relevant councils. There was a concern that this has the potential to create uncertainty for users, and possibly lead to duplication of effort in consenting, monitoring and enforcement activities between regional and district councils.

Permitted activity conditions for third party approval

Submitters also commented on the certainty and legality of those permitted activity conditions in the NES-PF which are reliant on approvals from other persons and authorities. Submitters raised concerns that conditions which are reliant on approval under another Act and/or by a third party, are inappropriate as permitted activity conditions. Comments on this issue include:

- Third party approvals, such as approval from an adjoining property owner or Heritage New Zealand, may be *ultra vires* as permitted activity conditions. This is based on the principle that a person should be able to determine if an activity is permitted on a plain reading of the planning document, without the activity status being subject to discretion;
- The NES-PF does not specifically provide a process whereby councils can monitor if third party approvals have been obtained. This could lead to compliance issues;
- The provision for a neighbour's approval could lead to issues where the person who provides approval changes their mind or the ownership of adjoining properties change. This can cause issues as to the validity and legality of the approval, and create uncertainty for forestry operators and the neighbour; and
- The permitted activity conditions that are reliant on third party approval are untested and may provide an avenue for challenge against decisions made in relation to the NES-PF. The risk of litigation should be considered in relation to the overall costs and benefits of the permitted activity conditions that refer to third party approvals.

3.4.1 Analysis

General comments on certainty and enforceability of permitted activity rules and conditions

A large body of case law and practice under the RMA has established that permitted activity rules and conditions should be certain, unambiguous and non-subjective. The NES-PF permitted activity rules and conditions should be certain enough to ensure that any forestry operator can understand what is needed to comply with the NES-PF, and that councils can easily determine whether an activity complies. Certainty in the NES-PF rules and conditions will also reduce the risk of litigation between councils and forestry operators over the meaning of conditions and whether an activity complies or not.

The draft NES-PF rule set was not intended to be a finalised rule set, but to inform discussion and feedback. Legal drafting is done by the Parliamentary Counsel Office once the policy and technical details are finalised. However, submitters have raised a number of valid issues about the certainty and enforceability of some of the draft NES-PF rules and conditions, and also provided useful feedback on how the rules can be improved.

This feedback has been incorporated into the revised rule set as part of the post consultation analysis. Technical advice and feedback has also been sought from councils and forestry operators on changes to the draft rule set as part of this process. In addition, MPI commissioned two external reviews of the draft rule set to improve certainty, assist with interpretation and help ensure the NES-PF rules are consistent with good planning practice¹⁷. This further analysis and advice will inform the regulation drafting process and help ensure that the permitted activity rules and conditions are sufficiently certain and can be easily interpreted, complied with, and enforced where necessary. Consultation on an exposure draft of the regulations also tested the workability and clarity of the rules and conditions prior to the NES-PF being gazetted.

Requirements for management plans

The management plan regime in the NES-PF is intended to work in conjunction with the other permitted activity standards, which require that particular thresholds are met (e.g. setbacks) and particular performance levels are achieved (e.g. effects of sediment on receiving waters). Permitted activity conditions have been reworked following consultation to better manage the effects of higher risk forestry activities. Management plans are in addition to these conditions, and the value of the management plans is to require pre-activity planning which will incorporate good management practices, and make foresters consider the potential impacts of their operations, site specific risks and how to best mitigate these.

While management plans are common practice for many larger corporate forestry operators, they are less common among smaller forestry operators. Introducing management plans as a nationally consistent permitted activity condition for higher risk forestry activities (earthworks, quarrying, harvesting) is therefore expected to result in an improvement in forestry management practices nationally, based on established industry practice. This is likely to help improve environmental outcomes and this expectation was confirmed in the revised AEE of the NES-PF.

Specific submission comments in relation to management plans focused on the ability for councils to review and approve management plans, the requirement for lodgement of management plans, expertise needed to prepare management plans, and assessing and enforcing compliance with management plans. An analysis of these issues is provided below:

- ***Review/approval of management plans*** - it is not appropriate for councils to approve or have the ability to request changes to management plans that would reserve discretion to councils – this is not compatible with a permitted activity condition. The relevant council should assess whether a management plan has been completed, according to the requirements in the NES-PF, and if the plan is complete the condition of completing a management plan is fulfilled. However, in the course of reviewing the appropriateness of various proposed management practices council may form an opinion on the appropriateness of the proposed management practices, which will inform their audit and contribute to risk assessments that assist in prioritising and compliance monitoring programmes.
- ***Assessing, promoting and enforcing compliance with management plans*** – the requirement to document the management plan, notify the relevant council(s) of activities prior to commencement, and make this available to councils on request will enable councils to more actively monitor forestry activities and the management practices being used. It will also enable councils to prioritise their compliance monitoring efforts to focus

¹⁷ MWH (2016), 'National Environmental Standard for Plantation Forestry - Planning Review', Prepared for Ministry for Primary Industries, and Adderley Head (2016), 'Independent Review: Draft rule set for national environmental standard for plantation forestry'. Report prepared for the Ministry for Primary Industries'

on areas of greater risk, such as where there are concerns about the mitigation measures proposed in management plans or concerns specific to individual management plans. It should also be noted that some councils have active programmes to work with forestry operators to improve practices and manage effects, and the proposed management plan process will assist with such initiatives. This approach is consistent with Regional Council guidance in the '*Regional Sector Strategic Compliance Framework*'.

- ***Requirement to lodge management plans unless waived*** – feedback from councils was that they did not have processes in place to receive management plans, and several councils would not want to receive them from all foresters. To accommodate that preference, the NES-PF proposes a default position of notifying councils when a management plan is required and providing the management plan to the relevant council on request rather than simply providing all management plans to councils..
- ***Expertise needed to prepare management plans*** – a number of submissions, from both councils and foresters, requested that there be comprehensive guidance including templates on how to prepare management plans, and that the guidance should also include details of best management practices for harvesting and erosion and sediment control. These requests are supported, and it is recommended that comprehensive guidance is developed to promote an effective management plan regime under the NES-PF for earthworks, harvesting and quarrying.

Functional overlap

It is recognised that the draft NES-PF rule set did not always clearly identify which council (district or regional) had responsibility for consenting, monitoring and enforcement for some NES-PF rules. This was a particular issue for forestry activities where section 30 and section 31 functions overlap.

Improvements are recommended to help avoid any potential duplication in the implementation of the NES-PF between regional and district councils where there are areas of overlap such as earthworks. There should also be greater clarity provided about relevant matters of control or discretion for each council where there is potential for overlap. It is recommended that this is addressed through drafting the regulations so that the matters of control and discretion are clearly allocated to each council and through supporting guidance material.

Permitted activity conditions for third party approval

The proposed NES-PF rule set included a number of permitted activity conditions that were reliant on third party or council approval as a component of the permitted activity condition. This includes:

- The setback conditions for afforestation which required minimum setback distances to adjoining properties and dwellings in different ownership, and urban/residential zones, unless approval of adjoining owner(s) has been obtained;
- The general conditions for archaeological sites stated that forestry activities that involve land disturbance shall only be carried out if the approval of Heritage New Zealand has been obtained in accordance with the Heritage New Zealand (Pouhere Taonga Act) 2014 (discussed in section 4.10); and
- A permitted activity condition relating to the use of GM tree species for afforestation and replanting that was based entirely on approval of that species from the Environmental Protection Authority under the Hazardous Substances and New Organisms Act 1996 (as discussed further in section 3.6).

Analysis of the permitted activity conditions relating to adjoining neighbour approval has identified some practical and legal issues consistent with those identified through submissions. It is therefore recommended that the ability for adjoining owner approval to satisfy the permitted activity conditions for setbacks be removed. This is discussed more in section 4.

3.4.2 Recommendations

To address the concerns raised in submissions in relation to certainty and enforceability of the permitted activity conditions, the following recommendations are made:

- The draft NES-PF rule set is refined to be more certain and enforceable;
- The permitted activity and management plan regime outlined in the proposed NES-PF is retained and its effective implementation assisted through:
 - Refining the rule set to better manage the environmental effects of forestry activities (as outlined in section 4) while ensuring the management plans are focused on the identification of site-specific risks and measures to manage those effects;
 - The development of management plan specifications and guidance, which identify best management practices relevant to a range of forestry activities;
 - Targeted support and upskilling of industry (especially smaller operators) and councils, to ensure the management plan process is effective and achieves the desired outcomes.
- The regulations are drafted in a way that clarifies district and regional functions under the NES-PF and avoids duplication where this potential exists.

More specific recommendations to the permitted activity rules and conditions in the NES-PF to ensure these are clear and enforceable are outlined in section 4.

3.5 MONITORING OF PERMITTED ACTIVITIES POSES ADDITIONAL, UNRECOVERABLE COSTS

This section provides a summary and analysis of issues raised in relation to:

- The monitoring of permitted activities under the NES-PF when consultation was undertaken in 2015; and
- The proposal to enable councils to charge for monitoring activities under the NES-PF when consultation was undertaken in 2017.

3.5.1 Summary of Issues Raised

Issues raised during consultation on the NES-PF

There were a number of comments in submissions relating to the monitoring of permitted activities under the NES-PF and the fact that these costs are not recoverable. This issue attracted a high level of comment from local government and foresters in particular. A number of councils noted that the RMA does not presently provide for charging for monitoring permitted activities – it only provides for the monitoring of activities subject to resource consent¹⁸.

As the NES-PF is based on a permitted activity approach, it relies on councils actively monitoring compliance with permitted activity conditions. Submitters, particularly from local

¹⁸ Section 36 of the RMA sets out the circumstances where councils may set charges for performing their functions under the RMA but this does not provide for the monitoring of permitted activities under NES.

government, commented that it will be difficult to implement and enforce a permitted activity regime in practice without a clear mechanism to charge costs of monitoring activities permitted under the NES-PF. Some of the main concerns raised in submissions include:

- There will be significant costs in assessing compliance with permitted activities under the NES-PF and this financial cost will fall on ratepayers in the absence of a clear mechanism for cost recovery;
- Permitted activities in the NES-PF should be controlled activities as this would allow councils to recover their monitoring costs;
- The transfer from a consented to a permitted activity regime would shift the costs of compliance monitoring from foresters to ratepayers and potentially reduce council services in other areas; and
- Some councils do not have the in-house expertise to assess compliance so this work will need to be outsourced and these costs will need to be recovered.

Issues raised in submissions in relation to the proposal to allow for charging for monitoring activities permitted under NES-PF

Submissions in support

Those that supported the proposal broadly agreed that the enabling provision was necessary to ensure councils had the resources to monitor the permitted activities under the NES-PF, which could have significant adverse effects if foresters did not comply with permitted activity conditions. Those in full support considered it was acceptable that administrative conditions be excluded from permitted activity charges.

The submitters that only partially supported the proposal stated that charging should include administrative conditions (in particular the receipt and checking of management plans) and that councils should have full discretion over charging.

Several submitters noted that without this enabling power either the permitted activities would not be monitored or these monitoring costs would have to be paid for by ratepayers, which was not fair when foresters were benefiting from undertaking the activity.

One submitter from the forestry sector noted that enabling charging for monitoring would ensure potential poor performance was monitored, especially on low risk sites where poor environmental performance could have adverse environmental effects. It was also noted that this may provide councils with more certainty that the NES-PF is achieving its purpose. However, this point was qualified by the need for charging to be reasonable and for foresters to be engaged in the process to set charges. The submitter considered that clear national guidance is necessary, particularly so that actual charges and charging approaches are not too varied between councils. Another submitter indicated support for the proposal but noted that any unfair, duplicate charging or monitoring that appeared to be revenue-gathering could threaten the viability/profitability of small forestry operations.

There were a number of comments, both from submitters in support and opposition, that it wasn't always clear from the proposal what could and couldn't be charged for.

Submissions in opposition

Most of those opposed were concerned about equity issues noting that the proposal would enable councils to charge for monitoring permitted activities that are the same or similar to those carried out by other sectors. It was also noted that this power is not used for other NES. A number of submitters were also concerned about the way in which charges would be made, noting that not all councils have a clear, targeted monitoring programmes.

Several of those opposed or opposed in part agreed with the user-pays principle in relation to forestry activities but were concerned with the way in which it may be implemented under the NES-PF. They suggested its use should be delayed until the first review of the NES-PF in 2020 when more information would be available to enable a more informed proposal to be developed.

Various submitters, including the majority of foresters and Federated Farmers, indicated there was already the ability to make such charges, negating the need for this proposed inclusion in the NES-PF. One submitter from the forestry industry considered that that councils already have the ability to charge for monitoring RMA permitted activities under section 150 of the Local Government Act 2002 (LGA). It was noted that, if charging were allowed under this proposal, the LGA should not be used by councils to require foresters to pay fees associated with the installation and maintenance of instrumentation used for monitoring, such as water quality monitoring, which could run several thousand dollars per month.

One submitter from the forestry industry considered that that the consultation material referred to ‘monitoring and enforcement’ and that this went beyond what section 43A(8) of the RMA allows, which only allows councils to “*charge for monitoring any specified permitted activities in the standard*”.

3.5.2 Analysis

The views and concerns expressed in submissions during consultation in 2015 have been recognised. At the time public consultation was carried out on the NES-PF, the RMA did not provide a clear mechanism for councils to recover their costs for monitoring activities permitted by a NES. The RMA only allowed charges to be set for the monitoring of resource consents and, in the absence of a resource consent, costs could only be recovered when enforcement action was undertaken.

As outlined in section 3.4 above, the permitted activity approach is fundamental to the NES-PF and consistent with most regional and district plan provisions for forestry. However, to be successful, it is important that councils have the capacity and incentives to actively monitor forestry activities to ensure compliance and take enforcement action where necessary to ensure the objectives of the NESPF can be achieved. Without the ability to charge for this monitoring, there is a risk that councils will not prioritise and engage with foresters to promote compliance or enforce the NES-PF, and/or undue costs over and above existing levels of permitted activity monitoring will fall on ratepayers.

Allowing for councils to charge to monitor all permitted activities under the NES-PF means foresters could potentially be charged for activities for which other sectors are not. For example, building river crossings and carrying out earthworks. However, the NES-PF addresses forestry activities only and a NES may not permit an activity with significant adverse effects. While the conditions attached to the permitted activities have been developed to control any significant adverse effects of the activities, this is predicated on the assumption that the conditions are complied with. A monitoring presence will ensure that foresters have an incentive to comply with those conditions so that significant adverse effects do not occur.

Where the activity of forestry necessitates monitoring so that councils can comply with their requirements under the RMA, it is generally appropriate that the foresters pay for that monitoring not ratepayers. It is preferable that charging is enabled while the regulations are new, rather than waiting until the first review of the NES-PF, as this takes a cautious approach to a permitted activity regime.

However, there is a difference between monitoring an activity to ensure it complies with specified conditions and wider state of the environment monitoring. Guidance is required to ensure that council charging is fair in this regard and to ensure there is no duplication across

charges across rates, targeted rates and permitted activity charges (e.g. roading and road maintenance).

Councils will take a variety of different approaches to monitoring and charging, as they are empowered to do under the RMA and the LGA. However, the requirements of both the RMA and the LGA are very clear that the sole purpose of a charge is to recover the reasonable costs incurred by councils in respect of the activity to which the charge relates.

The LGA and the Local Government (Rating) Act 2002 both set out processes by which councils are able to charge resource users and/or ratepayers. However, the LGA does not explicitly allow for councils to charge to monitor permitted activities. Section 43A(8) of the RMA does explicitly allow this and its use must be clearly linked to permitted activities in an NES.

It is acknowledged that new enabling provision section 43A(8) is not used in any other NES, but no other NES has been gazetted since this recent amendment to the Act. There is the potential to use the provision in other NESs where the need to use it is identified, but that would be subject to the usual NES consultation process.

It is also correct that section 43A(8) of the RMA does not allow for charging in relation to enforcement. Enforcement matters are dealt with in other parts of the RMA and there is no intention to change those in any way or establish new enforcement provisions through the NES-PF. This will be made clear in guidance on monitoring

The management plans that foresters must prepare in relation to some earthworks, quarrying and harvesting are a condition of permitted activities. However, the condition is that a complete plan is submitted to council and councils are limited in their formal responses to those plans (i.e. the condition is not fulfilled if the plan is incomplete, but if complete the condition is fulfilled). This is because it is not possible for a permitted activity to rely on the approval of an external authority. For this reason it is not appropriate for councils to charge for the receipt and scrutiny of that management plan. However, once the activity has commenced councils will be able to monitor whether foresters are complying with the plan and, make reasonable charges for that monitoring.

3.5.3 Recommendations

To address the concerns raised in submissions in relation to charging for monitoring activities permitted under the NES-PF, following recommendations are made:

- Include a provision in the NESPF that will enable local authorities to fix charges for monitoring permitted activities under the NES, excluding those provisions which only require notification and reporting.
- Develop guidance on the approach to monitoring of permitted activities under the NESPF and charging to monitor those activities. This guidance should take a risk-based approach in line with the risk-based approach of the NES. It should make clear that RMA enforcement provisions are not changed by the NES and that charging for enforcement is not enabled through section 43A(8). Guidance should clarify which activities can and cannot be charged for. Guidance should also address the difference between monitoring an activity and wider state of the environment reporting.

Following commencement of the regulations Government should monitor the size and nature of charges set by councils in their fees and charges schedules, and the practice of charging, and review the effects of the policy in three years to ensure it is not inappropriately undermining the objective of the NES-PF.

3.6 USE OF GENETICALLY MODIFIED TREES SHOULD NOT BE ALLOWED THROUGH NES-PF

3.6.1 Summary of Issues Raised

The NES-PF consultation document permitted the use of GM tree species for afforestation and replanting, provided the tree stock has the appropriate approval from the Environmental Protection Authority (EPA) under the Hazardous Substances and New Organism Act 1996 (the “HSNO Act”).

The provision for GM trees in the NES-PF was strongly opposed in submissions with over 16,000 unique and form submissions specifically opposing this aspect of the NES-PF. The main concerns submitters raised with the permitted activity conditions for GM tree species in the NES-PF related to:

- Environmental risk;
- Human health risks;
- Economic implications; and
- Interface between the NES-PF and HSNO Act.

These issues are summarised below.

Human health risks

Comments made in submissions about the health risks associated with the provision for GM tree species in the NES-PF include:

- Concern that genetically modified organisms (GMOs) are still experimental so providing for these as a permitted activity in the NES-PF could put human health seriously at risk with no ability to remedy this;
- Concern that GMOs are bad for human health as they increase suffering and illness due to the foreign genes that are either inhaled or consumed after they enter the food chain; and
- Concern that GMOs can create serious human health issues, including inflammation, asthma, arthritis and connective tissue diseases.

Environmental risks

Comments made in submissions about the environmental risks associated with the provision for GM tree species in the NES-PF include:

- Concern that permitting the use of GM tree species fails to provide environmental protection to communities or take into account the inherent dangers and liabilities associated with novel GM technology, and its potential contamination of New Zealand’s soils, indigenous fauna and flora, and waterways;
- Concern that forestry operations using GM species will present a significant risk to New Zealand’s biosecurity, unique biodiversity and existing non-GM primary producers;
- Concerns that transgenic pollution from GE tree pollen could have significant unintended adverse impacts on the environment, beneficial insects and indigenous biodiversity;
- Concern that environmental problems could arise because of the unexpected behaviour of GMOs. For example, it was noted that wilding pines are already a problem in parts of New Zealand and incur costs for communities. Communities do not wish to see those difficulties replicated through permitted GMOs in the NES-PF where the consequences and effects on the environment could be much more significant; and

- Concern that the NES-PF provision for GM tree species as a permitted activity condition would override council provisions for GM in their plans. It was noted that councils have taken a precautionary approach to GMOs in their plans in recognition of the environment risk associated with GMOs and the NES-PF should not override this.

Economic implications

Comments made in submissions about the economic implications associated with the provision for GM tree species in the NES-PF include:

- Concern that GE trees would put at risk all Forest Stewardship Council (FSC) certifications as these forests could be contaminated from seeds, pollen or other material from GE trees. It was noted that some foresters had put considerable time and effort to gaining their FSC certification, which prohibits any GMOs in FSC certified forests, and that these products are often sold at a premium due to the GMO free status;
- Concerns regarding the wider market risks from permitted GM trees through the NES-PF as many markets will not accept timber with even a trace of contamination of GMOs. There were concerns that this will compromise businesses in New Zealand, particularly those certified as being GM free;
- Concerns about the wider economic impacts for New Zealand's forestry industry, particularly as there is no evidence to demonstrate that GM trees will be of any greater economic value than non-GM trees; and
- Concerns that the New Zealand economy is based on the 'clean, green image' and this could be jeopardised if GE trees are permitted under the NES-PF.

Interface between NES-PF and HSNO Act

Submitters also made comments about the potential duplication/overlap with the provision for GM trees species in the NES-PF and HSNO Act. Comments made in submissions on this issue include:

- Concern that the NES-PF permits any GM tree species approved under the HSNO Act with no consideration required under the RMA. Overriding responsibilities under the RMA in such a way will potentially endanger the environment, especially when there is no duplication between HSNO and RMA controls once the GMO is released into the environment; and
- Concerns that the EPA does not have the ability, scope or expertise under the HSNO Act to make decisions regarding the long-term management activities of GM plantation activities. For example, it was noted that the HSNO Act is a much more limited regime than the RMA, so EPA approval of GMOs is not adequate alone to ensure all facets of the environment are considered.

3.6.2 Analysis

The provision for GM tree stock as a permitted activity condition in the NES-PF was intended to reflect the fact that GMOs are already regulated under the HSNO Act and the EPA is required to assess the environmental effects of the use of GMOs.

The assessment of the effects of use of GM tree stocks on the environment assumes that appropriate controls are set through the HSNO approval process, and that these controls are complied with. There is also a lack of evidence on the economic value of a 'GM-free' status. However, we note that environmental, social, cultural and economic matters are assessed on a case by case basis by the EPA in determining applications for use of GMOs.

Because it is not *vires* for a permitted activity to be subject to an external authority (in this case the EPA) it is not appropriate for GM tree stock to be included in as a permitted activity in an NES.

3.6.3 Recommendations

The lack of evidence for assessing stakeholder concerns of risks arising from permitted activity status for GM tree stock that has been assessed and approved by the EPA makes these provisions an area of uncertainty. Irrespective of this uncertainty it is not *vires* for a permitted activity to be subject to an external authority and it is recommended that this provision be removed.

4 SUMMARY AND ANALYSIS OF SUBMISSIONS ON NES-PF ACTIVITIES

The NES-PF consultation document included a set of draft rules for the eight plantation forestry activities. The draft rules addressed the policy intent of the NES-PF with enough specificity for stakeholders to provide meaningful feedback. However, the NES-PF consultation document also noted that the rules would change as a result of consultation and the legal drafting process.

The NES-PF consultation document asked submitters if they had any comments on the particular forestry activities or rules, and this section summarises those comments in relation to the eight forestry activities and the general conditions. Submitters provided a number of very specific comments on the wording of the draft NES-PF rules and conditions along with specific recommendations to improve the rules. This summary does not extend to that level of detail - it is focused on summarising general issues and themes raised in submissions, and provides recommendations to improve the rules as a result of submitter feedback.

4.1 FORESTRY ACTIVITIES AND EFFECTS

Table 3 below from the NES-PF consultation document outlines the eight forestry activities, and the potential adverse environmental effects arising from those activities. This table highlights that there is a high level of overlap and consistency between some of the environmental effects of forestry activities. For example:









- The potential adverse effects of **afforestation** and **replanting** are similar and mainly related to wilding spread and the establishment (or reestablishment) of forestry in erosion-prone areas; and
- The potential adverse effects of **earthworks**, **mechanical land preparation**, and **quarrying** are similar and mainly relate to erosion and sedimentation and the impact this can have on receiving waterbodies.

Therefore these activities have been grouped together in the following sections. This is followed by a summary of comments made in submissions in relation to **harvesting, pruning and thinning-to-waste**, and **river crossings**, as these activities have the potential for more specific types of environmental effects, such as the discharge of slash and effects on fish passages.

There were also some themes raised in submissions that relate to a number of forestry activities, including setbacks and sediment management. These cross-cutting themes are generally discussed in the context of a single activity and cross referenced as relevant rather than replicated through each relevant section

Table 3: Forestry activities within the scope of the NES-PF and their potential adverse environmental effects.

Table 1: Forestry activities in scope of the proposed NES-PF and adverse environmental effects

Activity	Adverse environmental effects to be managed
<p>Mechanical land preparation</p> 	<p>Erosion and sedimentation, related effects on habitats and water quality from sediment run-off</p>
<p>Afforestation</p> 	<p>"Wilding" spread, sedimentation from earthworks in erosion-prone areas</p>
<p>Earthworks</p> 	<p>Erosion and sedimentation (for example, from construction of roads and infrastructure)</p>
<p>Forestry quarrying</p> 	<p>Similar to effects from earthworks, impacts on cultural sites, over-burden disposal</p>
<p>River crossings</p> 	<p>Erosion and sedimentation, restricting or preventing fish passage, bed erosion, accumulation of debris, damage to structures during flooding</p>
<p>Pruning and thinning-to-waste</p> 	<p>Usually minor environmental effects, effects on and in water bodies if debris not appropriately managed</p>
<p>Harvesting</p> 	<p>Discharge of slash and sediment onto land and into water, soil disturbance and erosion, riparian vegetation disturbance</p>
<p>Replanting</p> 	<p>Similar to effects for afforestation, although likely to be less impact from earthworks in second generation forestry because of pre-existing infrastructure</p>

4.2 AFFORESTATION

The NES-PF consultation document defined afforestation as “*the act of planting a production forestry crop on land that is not currently in forest and has not been under plantation forestry cover for the past five years*”. The draft NES-PF rule set provided for afforestation as a permitted activity or restricted discretionary activity as follows:

- **Permitted activity:** subject to conditions, afforestation is permitted in the Erosion Susceptibility Classification (ESC) Green, Yellow and Orange Zones. It is also permitted on land within Land Overlay 3A (LO3A) under the Gisborne District Combined Regional Land and District Plan 2006, MPI Regional Scale Target Land, and land in a recognised regional council erosion management scheme. Permitted activity conditions for afforestation relate to wilding tree risk, setbacks and genetically modified trees.
- **Restricted discretionary activity:** afforestation within the ESC Red Zone, and where any of the permitted activity conditions cannot be met.

The main risks associated with afforestation identified in the NES-PF consultation document were:

- Unintended wilding spread of plantation forestry into other areas not intended for forestry, which could adversely affect the ecological, landscape and conservation values of those areas; and
- Establishment of forests in areas that are likely to have heightened risks during subsequent production forestry activities, such as earthworks and harvesting.

4.2.1 Summary of Issues Raised

The main issues raised in submissions in relation to afforestation are summarised below followed by a summary of some more specific comments.

Afforestation in erosion prone areas

A number of submitters made comments about the use of erosion prone land for afforestation. Most comments on this issue were focused on the ‘follow on’ risk of soil erosion and sedimentation during subsequent forestry activities (e.g. earthworks and harvesting) and the adverse effects that these can have on freshwater and coastal receiving environments. Submitters suggested that a resource consent should be required for afforestation in the ESC Orange Zone (high risk erosion susceptibility), providing councils with the ability to manage these follow on effects through greater control over afforestation in erosion prone areas.

There were also some specific concerns expressed about the exemption for land within the Land Overlay 3A area of the Gisborne District Combined Regional Land and District Plan to be permitted. It was considered that exemptions for this land would negate the need for a fuller assessment of risks from afforesting very highly erosion prone land.

Conversely, it was noted in submissions that afforestation of erosion prone land is beneficial with the right species. This relates to the fact that plantation forestry can provide a high degree of protection from erosion on New Zealand’s steepland during the majority of the forestry cycle. Submitters also noted that a restricted discretionary activity status for afforestation in the ESC Red Zone may limit the uptake of land use initiatives that seek to provide better erosion control on this land.

Hydrological effects / water yield

A number of submissions made comments in relation to the hydrological effects of afforestation, noting that afforestation has the potential to reduce water yields / flows which can cause issues in low to moderate rainfall areas. For example, it was noted that this can reduce water availability for human uses. To better manage the hydrological effects of

afforestation, some submitters recommended that councils should be able to consider water yield under the NES-PF and exercise greater stringency where required.

Setbacks

Setbacks is a cross-cutting issue for a number of the forestry activities in the NES-PF with setbacks proposed for afforestation, earthworks, mechanical land preparation, quarrying and replanting. The setbacks proposed in the NES-PF for afforestation relate to both:

- **District functions:** this includes setbacks from adjoining properties and dwellings, urban zones and roads. These setbacks are generally intended to manage adverse effects on amenity values, and help to manage/avoid reverse sensitivity issues; and
- **Regional Functions:** this includes setback distances from freshwater bodies (including wetlands) and the Coastal Marine Area. Regional setbacks are discussed in more detail in relation to earthworks in section 4.4.

The minimum setbacks proposed for afforestation in the NES-PF consultation document are outlined in Table 4 below.

Table 4: Proposed setbacks for afforestation.

Setback from	Minimum horizontal distance
District Functions	
Adjoining property under different ownership	10 metres unless adjoining owner approval has been obtained
Adjoining dwelling under different ownership	The greater of 40 meters or the where vegetation could cause shading, unless adjoining owner approval has been obtained
Urban/residential zone	30 metres unless adjoining owner(s) approval has been obtained
Roads	Distance necessary to avoid shading of the road
Regional Functions	
Perennial river or stream	5 metres if less than 3 metres wide 10 metres if more than 3 metres wide
Wetland greater than 0.25 hectares	5 metres
Lakes larger than 0.25 hectares	10 metres
Coastal Marine Area	30 metres
Outstanding freshwater bodies defined in NPSFM or waterbodies subject to a Water Conservation Order	10 meters

Comments made in submissions in relation to the proposed afforestation setbacks focused on the effectiveness of setbacks to manage the effects of concern, and the appropriateness of the setback distances proposed. A related concern raised in submissions was the potential for reverse sensitivity conflict between forestry and adjacent land uses, and whether the setback distances were sufficient to manage these effects. In addition, submitters raised concerns about the conditions that would provide third party discretion to waive or reduce setbacks with neighbouring properties and dwellings.

There were also some comments in submissions in relation to setbacks to areas of significant indigenous vegetation. The draft NES-PF proposed setback requirements to SNAs for replanting, but none were proposed for afforestation. Some submitters sought specific setbacks to SNAs for afforestation, and also recommended that this be extended to other forestry activities including, earthworks, mechanical land preparation and harvesting. Submitters also raised concerns that the setbacks only related to wetlands greater than 0.25

hectares in size, as very small wetlands still have value and only protecting larger wetlands is inconsistent with section 6(a) of the RMA.

There was also a request to include setbacks for afforestation and replanting to transmission lines in the NES-PF. It was noted that afforestation and replanting can create risks when this occurs too close to transmission lines including fire, loss of electricity supply, and damage to property and infrastructure. Addressing this issue in a nationally consistent manner through setbacks in the NES-PF was considered to be an appropriate way to manage these risks and help give effect to the National Policy Statement of Electricity Transmission 2008.

Other comments

In addition to the issues outlined above, submitters made a number of other specific comments in relation to afforestation. These comments include:

- Concerns about afforestation being permitted in landscapes that are required for their visual amenity value but not necessarily recognised as an outstanding natural landscape under section 6(b). For example, some councils noted that they have mapped special amenity landscapes within their plans but the NES-PF does not provide any recognition or protection of these landscapes, or allow them the ability to have more stringent rules in their plans to protect these landscapes;
- Afforestation should only be provided for in rural zoned land and not extend into rural-residential zones. It was considered that this would help to avoid potential future reverse sensitivity effects within these areas and on the fringe of urban areas; and
- There should be a requirement to notify the relevant councils of the commencement of afforestation. Conversely, there were other submitters that considered that notification is not necessary for low risk zones (i.e. Green, Yellow and Orange ESC Zones).

In addition, submitters highlighted a number of areas where they considered guidance on afforestation would be useful, including regional and district functions, where existing use rights apply¹⁹, and the ability to plant amenity (i.e. non-production) species in setback areas.

4.2.2 Analysis

Afforestation on erosion prone land

Managing erosion risk throughout the plantation forestry life-cycle is a significant issue, and has been a key consideration in the development of the proposed NES-PF. The consenting status of afforestation has been designed to align with well-defined erosion susceptibility classification (the ESC). Associated future risks from forestry activities after afforestation, such as sedimentation from earthworks and harvesting activities, are assessed and managed through specific rule sets targeted to the effects of those activities.

One of the key changes for afforestation is the reclassification of the highest risk ESC Orange Zone land to the ESC Red Zone with consent required for afforestation greater than 2 hectares in any calendar year in this reclassified land. This will enable councils to exercise greater control over afforestation in more erosion prone areas, and also help ensure the assessment of potential effects from future forestry activities can be “front-loaded” at the time of planting to avoid future legacy issues.

The NES-PF proposed exceptions for afforestation to be permitted in ESC Red Zone land which is located in:

¹⁹ Existing use rights apply to land uses under section 10 of the RMA. This provides for protections of existing land uses to continue where they contravene a rule in a district plan or proposed district plan, and this also applies to NES under s43B(9). Existing use rights apply provided the activity is lawfully established and effects of the use are the same or similar in character, intensity, and scale to those which existed prior to the rule or NES being introduced.

- Land Overlay 3A in the Gisborne District Combined Regional Land Plan;
- MPI regional scale target land; and
- Land within regional council erosion management schemes.

These exceptions were intended to recognise that councils have existing sustainable land-use initiatives for controlling erosion using plantation forestry, and in these areas appropriate management practices will be applied for afforestation. Any plantation forest planted purely for conservation would also be exempt from the definition of plantation forestry proposed under the NES-PF. As these exemptions caused some uncertainty and confusion in submissions, it is recommended that they are removed from the afforestation rules. Clarification on this can be provided through guidance.

Hydrological effects / water yield

The NES-PF discussion document specifically identified water yield as out of scope of the regulations. This recognised that afforestation can have an impact on total water yield and low flows in low-to-moderate rainfall areas, and councils should retain the ability to manage afforestation in water-sensitive environments.

This approach should be retained to allow councils to manage water quantities as necessary within each region. Concerns about the impacts of reduced quantity on water sensitive ecology is also addressed by allowing councils to impose more stringent rules to protect significant indigenous vegetation and habitats. In addition, councils will be able to have more stringent rules on water quality to give effect to the NPSFM. Section 3.2 provides a more detailed discussion on the revised approach to allow councils to be more stringent under NES-PF.

Setbacks

Setbacks are a tool commonly used in planning documents to manage a range of effects and can be successfully used in relation to plantation forestry. The setback distances proposed for afforestation in the draft NES-PF rule set are considered appropriate to mitigate the effects of most concern (amenity, shading, road safety and reverse sensitivity) and are similar to those commonly used in RMA plans.

Further analysis also concluded that the setback conditions are sufficiently certain to be complied with. For instance, shading of a paved public road from a fully grown tree on the shortest day of the year can be calculated using the standard size of a tree and sun angle information. However, it is recommended that the setback conditions relating to third party approval are removed as outlined in section 3.4. Further analysis also supports the requests in submissions to provide setbacks for afforestation in relation to SNAs. This will help protect the ecological functioning of these areas and reduce incidental damage at harvesting time. It is therefore recommended that a 10 metre minimum setback distance to SNAs is included as a permitted activity condition for afforestation. This will then apply to subsequent activities such as harvesting as there will be no need to harvest within the setbacks. Guidance is also recommended to ensure that setback distances to SNAs are clearly defined at the time of harvesting to avoid potential ‘creep’ during the forestry life cycle.

For replanting, it is important that any larger setbacks are retained when replanting occurs adjacent to:

- SNAs;
- Perennial rivers;
- Lakes;
- Wetlands; and

- The Coastal Marine Area.

This will ensure larger setbacks that have been established as a result of plan rules, consent conditions, or by voluntarily means are maintained under the NES-PF. This approach is considered to provide more environmental benefits that imposing a higher setback standard for all afforestation and replanting activities. Vegetation within existing setbacks is likely to become established over a 25-30 forest rotation and therefore have more biodiversity value than new setback areas where vegetation has yet to establish. As noted above, careful mapping of setbacks is recommended to ensure there is clarity over the boundaries of the SNA as over time the setback area may grow to resemble the SNA causing potential confusion over the purpose of the setback.

The requirement to maintain existing setbacks in relation to waterbodies will also help to address submitters concerns about the protection of wetlands less than 0.25 hectares. Greater setbacks are likely to be in place when considered necessary to protect the values of a wetland (regardless of size) and this recommended amendment will ensure those protections are maintained.

It is not considered necessary to include setbacks for afforestation and replanting to electricity transmission lines through the NES-PF. Rather, it is recommended the effects of forestry activities on network utility infrastructure remains out of scope of the NES-PF. This will enable council rules to continue to manage these effects, including those rules that give effect to the National Policy Statement on Electricity Transmission 2008. However, it is recognised that there is potential for conflict between forestry activities and the operation of the electricity transmission network. MPI will continue to work with foresters and Transpower on this issue and the management of forestry activities near the electricity transmission network will also be reconsidered when the NES-PF is first reviewed.

Other comments

A number of other small improvements to the afforestation rules in the NES-PF are also recommended. The main recommendation is that afforestation is managed as a controlled activity in landscapes identified as having visual amenity value in the relevant plan. This responds to submitter concerns that the NES-PF does not adequately recognise landscapes that have visual amenity value under section 7(c) of the RMA, but may not qualify as an outstanding natural landscape in terms of section 6(b). Providing for afforestation as a controlled activity within these landscapes will enable councils to impose conditions to manage the adverse effects of forestry on those landscapes. Matters of control should be focused on the adverse effects of forestry activities on the visual amenity values of that landscape from afforestation and future forestry activities.

It is not recommended that the definition of forestry should exclude 'rural residential' zones. Plantation forestry can often be an important land-use in these areas and compatible with adjacent land-uses. The NES-PF rules also provide sufficient safeguards to manage effects on neighbouring properties, including setbacks and a number of general conditions.

The recommendations in submissions for specific guidance on afforestation are supported. Guidance will focus on setbacks, interface issues, exclusions, and areas and landscapes where greater control will be exercised.

4.2.3 Recommendations

To address concerns raised in submissions in relation to the effects of afforestation, the following changes are recommended:

- Manage afforestation as a restricted discretionary activity in the highest risk ESC Orange Zone land that has been reclassified as ESC Red Zone;

- Retain water yield as an out of scope matter but provide clear guidance on this;
- Include a minimum setback distance of 10 meters to SNAs as a permitted activity condition for afforestation;
- Where a larger setback exists and replanting is located adjacent to SNAs and/or waterbodies (including wetlands), replanting should not occur closer than the stump line of the previous plantation forestry tree previously harvested;
- Develop guidance on managing the effects of forestry activities on network utility infrastructure; and
- Manage afforestation as a controlled activity in landscapes identified as having visual amenity value in the relevant plan. Provide guidance on how afforestation should be managed within these landscapes.

4.3 REPLANTING

The NES-PF discussion document defined replanting as “*the act of planting a site following the harvesting of a crop. For the activity to be considered replanting rather than afforestation, the planting must occur on a site where plantation forestry has occurred within the past five years*”. The draft NES-PF rule set provided for replanting as a permitted and controlled activity as follows:

- **Permitted activity:** replanting in all ESC zones, subject to meeting permitted activity conditions. Conditions relate to setbacks from waterbodies and the coastal marine area (regional council functions), setbacks from significant natural areas where these existed (district council function), and the use of genetically modified tree stock.
- **Controlled activity:** replanting if the permitted activity conditions are not met.

The primary risk associated with replanting is the re-establishment of a forest in inappropriate areas where subsequent forestry activities carry an increased risk of causing adverse effects. Assuming that this risk is managed, the effects associated with replanting itself are typically minor.

4.3.1 Summary of Issues Raised

A number of submitters made comments in relation to the draft NES-PF rules for replanting. Some submitters raised concerns about the requirement to replant within five years, and this was a particular issue for some forestry operators. It was noted that in some cases, replanting may need to be deferred for longer than five years to align with the timing of another crop. For example, a longer replanting period may be needed when there has been partial damage and salvage harvesting due to fire or wind damage.

Conversely, there were other submitters who considered that the replanting timeframe should be shorter on land with higher erosion risk. This was due to the increased risk of erosion during the ‘window of vulnerability’, which is the timeframe between harvesting and replanting in which there are more areas of exposed soil.

Some submitters considered that replanting should be a restricted discretionary activity rather than permitted or controlled. This included suggestions that replanting should be restricted discretionary on higher erosion risk land (i.e. the Red Zone), and other comments that all replanting should be a restricted discretionary activity.

Other comments made in submissions about replanting include:

- The rules and conditions for replanting should be the same as afforestation (i.e. setbacks from neighbouring properties, dwellings and roads);

- There should be a requirement for a management plan to be prepared for replanting that demonstrates how the permitted activity conditions will be met;
- Replanting rules should encourage the use of mixed species to help stagger harvesting ages in the next crop;
- Wilding risk should be included in the replanting rules to ensure there is no increase in wilding risk through different species; and
- Guidance is required in relation to existing use rights.

4.3.2 Analysis

A number of submissions focused on the five year replanting timeframe set out in the NES-PF discussion document. The five year timeframe is considered to provide a sufficiently flexible timeframe for forestry operators to undertake replanting. If replanting does not occur within 5 years, any future replanting would be dealt with under the afforestation provisions of the NES-PF. A key difference is a controlled activity status for replanting in the ESC Red Zone and a restricted discretionary activity status for afforestation in the ESC Red Zone. The five year timeframe for replanting is considered appropriate in this respect.

However, it is recognised that greater flexibility should be provided in certain circumstances to allow replanting to align with the timing of another crop, such as where there has been salvage harvesting due to fire or wind damage. It is therefore recommended that the scope of “replanting” is refined to provide that flexibility.

To assist with implementation, guidance is also recommended to clarify the interactions between existing use right under section 10, the NES-PF rules relating to replanting and afforestation, and the forestry land use cycle, which is consistent with recommendations in submissions.

Some submitters considered that the five year timeframe is too long given the heightened risk of erosion in the ‘window of vulnerability’ following harvesting. Reducing the replanting timeframes would reduce this risk, but it could also impose undue constraints on foresters. The harvesting rules also allow councils to address “soil erosion during and after harvesting” when a controlled or restricted discretionary consent is required. This will allow councils to stipulate a shorter replanting timeframe to help minimise erosion risk. Soil erosion associated with any new (non-forestry) land use may also be dealt with as a separate matter under the regional plan.

An analysis of the other comments made in submissions in relation to replanting is provided below:

- *Activity status for replanting* – requests for a higher activity status of restricted discretionary for replanting within the ESC Red Zone is not consistent with existing use rights under the RMA where lawfully established land uses can continue provided they are the same or similar in character, intensity, and scale. However, a restricted discretionary activity status is considered appropriate where setback requirements are not met, where wilding conifer control measures in SNAs and wetlands are not undertaken, or where there is an increase in risk of wilding conifer spread through a change in species (as outlined below);;
- *Replanting management plan* – a mandatory requirement for a replanting management plan would be an unnecessary requirement to impose in most cases, as replanting is generally a low impact activity; and
- *Replanting species* – while existing use rights will generally apply for replanting, it is possible that a change of conifer species (or a change from non-conifer to conifer) could

result in an increase in the scale and intensity of effects associated with wilding conifer spread. Therefore it is not appropriate to assume existing use rights will always apply for replanting when a different species is being replanted. To manage this risk, it is recommended that the wilding calculator be applied as a permitted activity condition to replanting where there is a change in conifer species (or change from non-conifer to conifer) with consent required where there is an increase in wilding risk and the calculator has a score of 12 or more.

4.3.3 Recommendations

To address concerns raised in submissions in relation to the control of replanting, the following changes are recommended:

- Develop guidance in relation to existing use rights for plantation forestry under the NES-PF, including the interaction between section 10 and the replanting timeframes in the NES-PF;
- Apply the wilding risk calculator to replanting where there is a change in conifer species (or change to a conifer species) with consent required as a restricted discretionary activity where there is an increase in wilding risk and the calculator has a score of 12 or more; and
- Include conditions that require any wilding conifer species that have established from the replanting in wetlands and significant natural areas to be removed every 5 years.

4.4 EARTHWORKS

The NES-PF consultation document defined earthworks as:

“earthworks is the modification of the shape of the ground surface by movement or removal of the surface of soil or rock. Includes forestry road and track construction, landing construction, stream crossing approaches, and cut and fill operation, but does not include soil disturbance by machinery passes”.

The draft NES-PF rule set provided for earthworks as a permitted activity or restricted discretionary as follows:

- **Permitted activity:** Earthworks in Green and Yellow Zones, and earthworks in the Orange Zone where slope is less than 25 degrees, provided that permitted activity conditions are met. Maintenance and upgrade of existing earthworks and forestry road widening and realignment in all ESC zones was also permitted, subject to conditions. Permitted activity conditions relate to notice of commencement, road widening and alignment, preparation of the Erosion and Sediment Control Plan (ESCP), setbacks, fill and spoil, sediment and stormwater control measures, stabilisation and containment, and design.
- **Restricted discretionary activity:** Earthworks in the Red Zone, earthworks in the Orange Zone where slope of land is greater than 25 degrees, and any area where any of the permitted activity conditions cannot be met.

The NES-PF consultation document recognised that some of the most significant potential effects from forestry operations can arise from earthworks with sediment runoff being of most concern. Sediment runoff from earthworks can adversely affect ecosystem health by increasing the turbidity of water (decrease clarity), and clog riverbeds and downstream receiving environments such as estuaries and lakes.

4.4.1 Summary of Issues Raised

Submitters made a number of general and specific comments in relation to earthworks. A summary of the main issues raised is provided below, followed by a summary of specific comments.

Earthwork volumes

Submitters made a number of comments about the earthworks volumes in the draft NES-PF rules which specified a maximum earthworks volume of 5,000 cubic metres (m³) for road widening and realignment for safety purposes²⁰. There were some submitters who considered that this maximum volume was too high for a permitted activity and should be reduced to 1,000 m³ to allow councils to better manage the effects associated with earthworks of this scale. Submitters also suggested that the earthworks rules should include maximum cut and fill limits.

A number of submissions, particularly from the forestry sector, raised concerns that there was no lower limit for the earthworks rule. It was noted that this would essentially mean that the NES-PF earthwork conditions (including the requirement to prepare an Earthworks Management Plan) would apply to earthworks at any scale, including very minor earthwork activities.

Earthwork slope

The slope threshold for earthworks is an issue that attracted some comments in submissions. The proposed NES-PF included a slope threshold for earthworks within the Orange Zone where a resource consent would be required (restricted discretionary) for earthworks where the slope is greater than 25 degrees. Some submitters suggested that the slope rules need to be more stringent to manage the increased risk of earthworks on steep land. Comments on this issue include:

- The slope threshold for earthworks should be reduced to 19-20 degrees;
- The slope threshold for earthworks should also apply to the ESC Yellow Zone; and
- Slope should be considered in all ESC Zones.

There were also suggestions that there needs to be greater clarity and a clear methodology to measure earthworks slope as this can be done in many ways.

Setbacks

There were a number of specific issues raised in relation to the setback requirements for earthworks, primarily focused on managing effects on freshwater bodies and the coastal environment. Note that similar regional setbacks are proposed in relation to afforestation, replanting and mechanical land preparation so this discussion is not repeated in relation to those activities.

The proposed NES-PF minimum setback requirements for earthworks are outlined in Table 5 below.

Table 5: Proposed setbacks for earthworks in NES-PF consultation document.

Setback from	Minimum horizontal distance
Perennial river or stream	5 metres if less than 3 metres wide 10 metres if more than 3 metres wide
Wetland greater than 0.25 hectares	5 metres
Lakes larger than 0.25 hectares	10 metres
Coastal Marine Area	30 metres
Outstanding freshwater bodies defined in NPSFM or waterbodies subject to a Water Conservation Order	10 meters

²⁰ The consultation document incorrectly referred to the volume of earthworks being “more than 5,000m³” rather than “less than 5,000m³” and this was noted in a number of submissions.

Submissions from the forestry sector generally supported the setbacks proposed, although some of these submitters considered that the setbacks were not necessary where environmental risks are low, such as in the Green Zone. Some submitters also commented on the limited environmental benefit that setbacks can have to control the effects of sedimentation from earthworks.

Most non-forestry submitters (local government, professional groups, and private individuals) generally supported the setback requirements for earthworks, noting that these can provide an important function to maintain water quality and provide habitats for aquatic ecosystems. However, there were a number of submitters who recommended the setback distances to waterbodies be increased to enhance their riparian buffer function, and to help reduce the adverse effects from earthworks on waterbodies. It was also suggested that setback distances from freshwater bodies and the coastal environment should be increased as the slope of the land increases.

There were also some specific comments made in relation to the setback distances to wetlands for earthworks and other relevant activities where these setbacks were proposed (afforestation, replanting, earthworks, mechanical land preparation). There were concerns raised that the proposed setback distance of 5 metres was not adequate.

Other comments in submissions

In addition to the general themes above, there were a number of other specific comments made in relation to earthworks, including:

- The notification of commencement requirements needs to be clarified/rationalised;
- Earthworks management is an area of overlapping responsibility between regional and district councils under the Act. Therefore the NES-PF needs to clearly define the respective consenting, monitoring and enforcement functions of each council for earthworks²¹;
- Concerns that it is not appropriate or legally sound to refer to the external document ‘*New Zealand Forest Engineering Manual*’ within the permitted activity conditions. Submitters also stated that, if it is to be referenced, that the reference should be specific to certain parts of the manual;
- Clarification of management methods and practices, so these are more consistent with established good practice management methods for earthworks (e.g. containing exposed areas of soil, timeframes to stabilise site following earthworks etc.); and
- The need for controls over the timing of earthworks during the year, and an earthworks ‘close out’ season when earthworks cannot be undertaken.

4.4.2 Analysis

Earthwork volumes

The maximum earthwork volume for road widening and realignment proposed in the NES-PF was developed with the Stakeholder Working Group based on what was considered to be a workable limit for industry. It is also consistent with typical earthwork limits in rural areas that plantation forestry is generally located in.

There is no compelling evidence to suggest the earthwork volumes for road widening and realignment limits should be reduced. However, there is potential to clarify when and how

²¹ Note an analysis of jurisdiction responsibilities under the NES-PF issue is discussed as a broader issue in section 3.4

earthwork volume limits in the NES-PF apply to different earthwork activities. There is also a need to tie the maximum earthwork volume in road widening and realignment to a set time period to provide some parameters on this volumetric limit – a three month period is considered appropriate in this respect.

Analysis also supports the issues raised in submissions in relation to the absence of a lower earthwork limit in the rules – this could result in a requirement to prepare an Earthworks Management Plan for very minor earthworks with very low potential for adverse environmental effects. As such, it is recommended that earthworks less than 500m² disturbed soil are excluded from the Earthworks Management Plan requirements.

Earthworks slope

It is recognised that there is a higher risk from earthworks carried out on a steeper slope which is reflected in the slope threshold for earthworks within the ESC Orange Zone. Some suggested this slope threshold should apply to all ESC Zones. However, the risk of slope failure varies with different geology and soils. The proposed 25 degree threshold in the NES-PF is based on reasonable parameters to account for the risk of slope failure across all landscapes in the Orange Zone where the rule applies.

Further analysis of the ESC zones (as discussed in section 3.1) did not identify any clear benefit in reducing the slope threshold within the ESC Orange Zone. There also appears to be limited benefit in extending the slope threshold into the ESC Yellow Zone. This land is classified as having a moderate erosion susceptibility risk, and is on more stable geologies – the risk is therefore much lower. However, the reclassification highest risk ESC Orange Zone land into ESC Red Zone will result in resource consent being required for earthworks on that reclassified land. The risk of slope failure from earthworks may be a relevant consideration when such activities are assessed as slope instability is one of the proposed matters of discretion.

Requests in submissions for a clear methodology to calculate earthworks slopes are supported. It is recommended that this is included in guidance.

Setbacks

The analysis of issues raised in relation to setbacks for earthworks have been focused on the effectiveness of setbacks to maintain water quality. This analysis has involved a review of literature on setbacks within a plantation forestry context both in New Zealand and internationally, which has been supported by the independent revised Assessment of Environmental Effects (AEE) for the NES-PF. Key findings from this analysis include:

- Riparian buffers within plantation forests can provide protection throughout the forestry life-cycle including:
 - The control of riparian and streambank soil disturbance and organic matter input by limiting machinery access in the near stream areas;
 - Maintaining shade that reduces temperature increases and changes in primary production and periphyton biomass;
 - Maintaining riparian leaf litter input and wood;
 - Riparian vegetation may reduce sediment and nutrients in runoff from the logged areas.
- There is no evidence that a wide riparian buffer (e.g. greater than 20m) will be more effective than a narrow one (e.g. less than 10m) for filtering sediment in a harvested forest; and

- The sedimentation process consists of soil erosion followed by transportation and deposition of the sediment. A well accepted principle of erosion control is that prevention and control at source is better than trying to mitigate its effects once generated.

The principle of controlling erosion at source is a key focus of the NES-PF rules, conditions, and overall risk management approach. This includes the requirement for an Earthworks Management Plan to be prepared for earthworks that identifies environmental risks and methods of sedimentation retention and control.

Retaining the focus on controlling erosion at source is considered to be more effective to mitigate sedimentation from earthworks, than simply increasing the minimum setback requirements in the NES-PF. However, it is recognised that reducing the instances of exposed soil in near-stream environments will provide greater protection of waterbodies. Therefore an increased setback of 10 metres for earthworks for all surface waterbodies (including wetlands greater than 0.25 hectares) is recommended, while allowing for some minor disturbance to be undertaken within this area.

It is not recommended that a minimum setback distance to SNAs is provided for earthworks and other forestry activities as a permitted activity condition. It is more appropriate that setbacks from SNAs occur at the time the forest is first established, or maintained at the time of replanting if there are existing setbacks to SNAs. Requiring a minimum setback at the time of planting will generally ensure subsequent forestry activities do not adversely affect these areas without imposing undue constraints on subsequent forestry operations. The indigenous vegetation clearance conditions control the amount of incidental damage that can occur adjacent to a SNA to ensure it does not significantly affect the values of that area.

The recommended revised setbacks for earthworks are outlined in table 6.

Table 6: Recommended setbacks for earthworks.

Setback from	Minimum horizontal distance
Perennial river or stream	10 metres
Wetland greater than 0.25 hectares	10 metres
Lakes larger than 0.25 hectares	10 metres
Coastal Marine Area	30 metres
Outstanding freshwater bodies defined in NPSFM or waterbodies subject to a Water Conservation Order	10 meters

Some exceptions to the above setback standards are recommended to provide foresters with a reasonable amount of operational flexibility. These exceptions should cover the following situations:

- The construction and maintenance of river crossings, sediment control measure, and slash traps;
- Small scale soil disturbance within the 5-10 m setback zone to waterbodies; and
- Maintenance of existing earthworks, to provide for operational flexibility.

The limited scope of these exceptions means that the risks associated with them are minor.

In addition, councils will be able to impose greater setback distances from freshwater bodies and the Coastal Marine Area than the minimum requirements set out in table 6 where this is deemed to be necessary to give effect to the NPSFM or NZCPS, or for the purposes of protecting significant natural areas and outstanding natural landscapes and features.

Other comments

A number of other small improvements to the earthwork rules in the NES-PF are also recommended. These are focused on addressing areas of uncertainty identified in submissions, such as jurisdictional overlap and making specific reference to the relevant section of the ‘*New Zealand Forest Engineering Manual*’, and ensuring the rules are clear, certain and enforceable.

Analysis concluded that it is not necessary to include an earthworks ‘close out’ season as a permitted activity condition in the lower ESC zones as the risk of adverse effects is low throughout the year. However, the timing of earthworks is recommended as a matter for discretion when resource consent is required in the higher risk ESC Zones, where the risk of adverse effects is greater, or where other permitted activity conditions cannot be met.

4.4.3 Recommendations

To respond to issues raised in submissions in relation to earthworks, the following changes are recommended:

- Reclassify the highest risk ESC Orange Zone land to Red Zone with more stringent consent requirements for earthworks which will result in resource consent being required for earthworks in higher risk forestry land;
- Clarify how volumetric limits apply to forestry earthwork activities, and include lower earthwork limits so that the Earthworks Management Plan requirements do not unnecessarily apply to small scale earthworks;
- Provide guidance on a methodology to calculate slope, for the purposes of determining the activity status of earthworks within the Orange Zone;
- Include a minimum setback requirement of 10 metres for earthworks in relation to surface water bodies and wetlands larger than 0.25 ha, while providing for some exceptions for minor disturbance and maintenance activities; and
- Refine the wording of the rule set so that it is more certain and consistent with established best practice management rules and conditions for earthworks.

4.5 MECHANICAL LAND PREPARATION

The NES-PF discussion document defined the scope of mechanical land preparation as “*root raking, discing, mounding and spot mounding, contour and downhill ripping, roller crushing, other cultivation of land (including spot cultivation) and associated removal of vegetation. V-blading involving disturbance of subsoil is considered under the earthworks rules*”. The draft NES-PF rule set provided for mechanical land preparation as a permitted and restricted discretionary activity as follows:

- **Permitted activity:** mechanical land preparation in the Green and Yellow zones, in the Orange and Red zones where the slope is less than 25 degrees, and in the Orange and Red zones where the slope is greater than 25 degrees but the technique used does not affect²² the subsoil (for example, deep downhill ripping or giant discing). All mechanical land preparation activities are subject to permitted activity conditions related to methods used and setbacks.
- **Restricted discretionary activity:** mechanical land preparation in the Orange and Red zones where the slope is greater than 25 degrees and the technique used affects the subsoil

²² Note that the consultation document incorrectly used the phrase “the technique used affects the subsoil” [emphasis added]

(for example, deep downhill ripping or giant discing), and where the permitted activity conditions cannot be met.

Mechanical land preparation comprises a range of operations that are often necessary for the successful establishment or re-establishment of production forests. Land preparation addresses issues such as poor drainage, the impact of frost, weeds, heavy slash deposits and compacted or dense soil. If the land is not prepared properly, it may limit tree growth or cause crops to die.

However, poorly executed mechanical land preparation can result in adverse environmental effects. The main risks relate to soil erosion and sediment run-off to waterbodies which can degrade water quality and adversely affect aquatic habitats. There is also the potential for adverse effects on downstream receiving environments (including the coastal environment).

4.5.1 Summary of Issues Raised

A range of comments were made in submissions in relation to the draft NES-PF rule set for mechanical land preparation. A number of these focused on whether it is appropriate to undertake mechanical land preparation as a permitted activity, particularly in the Orange and Red zones. Comments relating to the permitted activity status for mechanical land preparation include:

- The slope threshold of 25 degrees is too high, and this should be reduced to 20 degrees to trigger a resource consent and a more detailed assessment of effects (slope threshold is discussed in relation to earthworks in section 4);
- Suggestions that the activity status of mechanical land preparation in the Green and Yellow Zones should be controlled rather than permitted; and
- Suggestions that the permitted activity rule should include a maximum area threshold for mechanical land preparation activities.

Submitters also sought greater consideration of particular effects and values when a resource consent is required for mechanical land preparation. It was recommended that effects on the coastal environment and landscape values are specifically provided for within the matters of discretion, and that the matters of discretion refer to both aquatic and terrestrial ecology. Submitters also sought more explicit recognition of the effects of sediment runoff on downstream receiving environments (including infrastructure) in the mechanical land preparation rule set.

Consistent with the issues raised in relation to sediment management for harvesting, a number of submitters raised concerns about use of the word “prevent” in relation to sediment runoff. It was noted that “prevent” has a strong meaning under the RMA, and it will often be impossible to “prevent” all sediment delivery to waterbodies no matter how effective the erosion and control measures are. There was a concern that this would result in resource consents being required for all mechanical land preparation activities.

Several submitters raised safety concerns about the permitted activity condition which would require mechanical land preparation to be carried out parallel to the contour as a default position (except roller crushing and downhill ripping). It was noted that this can be dangerous on steeper slopes, particularly where a machinery operator needs to navigate around stumps. It was suggested that this rule should be more consistent with the other rules in the draft NES-PF which require work to be undertaken when it is “safe and practicable” to do so, not just “practicable”.

Some submitters also raised a specific issue about the reference to “and associated removal of vegetation” being within the scope of mechanical land preparation. There was a concern that

this would permit large scale indigenous vegetation clearance due to the absence of vegetation clearance conditions within the mechanical land preparation rules.

4.5.2 Analysis

The environmental effects associated with mechanical land preparation are generally minor if carried out in accordance with good practice. Overall, the permitted activity conditions in the draft NES-PF are considered to be suitably robust and appropriate means of managing the effects of mechanical land preparation. No general change to the activity status is required. However, it should be noted that the ESC changes discussed in section 3.1 and elsewhere in this document will apply to mechanical land preparation. Essentially, this will result in a higher consent threshold for mechanical land preparation in higher risk land that was in the ESC Orange Zone where the activity affects the subsoil.

An analysis of the other issues raised in submissions in relation to mechanical land preparation is provided below:

- *Matters of discretion:* in circumstances where mechanical land preparation is a restricted discretionary activity, the draft NES-PF rule set included ‘ecological and aquatic affects’ as a matter of discretion. Consistent with a number of other forestry activities, it is recommended that the matters of discretion in regional council functions refer to “effects on ecosystems, freshwater and the coastal environment”. This will address submitter concerns about the lack of consideration of the coastal environment when consent is required and ensure consistency across the regulations. The reference to “ecosystems” encompasses both terrestrial and aquatic ecosystems and so the submitters concerns about enabling a consideration of effects on terrestrial ecosystems will be addressed.

However, effects on landscapes are considered to be suitably addressed through the matters where councils can be more stringent than the NES-PF. This includes outstanding natural landscapes and features recognised under section 6(b) of the RMA. The afforestation rules will also allow the effects on visual amenity landscapes to be considered at the time of planting;

- *Sediment management:* as discussed in relation to earthworks, it is recognised that the reference to “prevent” in relation to sediment runoff is a high threshold that is often unachievable and will result in resource consents being unnecessarily required. Therefore, consistent with the recommendations to the earthwork conditions, it is recommended that the condition be adjusted to allow for minor effects from sediment runoff, and specify the level of effects on receiving waterbodies that must be avoided is consistent with section 70 of the Act;
- *Safety considerations:* it is recognised that the rule set in the NES-PF consultation document was inconsistent in referring to work needing to be undertaken when it is “safe and practicable” not just “practicable”, and that there are valid safety considerations and legal requirements that forestry operators need to adhere to when undertaking mechanical land preparation. It is therefore recommended that the rules generally refer to undertaking works unless it is “unsafe” to do so. This also applies to harvesting, and pruning and thinning to waste; and
- *Vegetation clearance:* the reference to “associated vegetation clearance” within the scope of mechanical land preparation was not intended to permit large scale indigenous vegetation clearance. The regulations are not intended to apply to indigenous vegetation clearance prior to afforestation. Indigenous vegetation clearance associated with a plantation forestry activity regulation is intended to be managed as an ancillary activity with specific conditions controlling the clearance of indigenous vegetation under different circumstances. To avoid doubt and potential inconsistencies, it is recommended that the

reference to “associated vegetation clearance” is deleted from the scope of mechanical land preparation and other forestry activities and that the regulations clearly state that the regulations do not apply to any vegetation clearance carried out before afforestation.

4.5.3 Recommendations

To respond to issues raised in the submissions in relation to the control of mechanical land preparation, the following changes are recommended:

- Rephrase the condition to require that sediment reaching waterbodies is minimised, rather than prevented, to retain the focus on good sediment control practices to mitigate effects on receiving environments. Include a reference to water quality standards for the discharge of sediment that are consistent with section 70 of the Act;
- Provide an exception to working parallel to the land contour, where it is unsafe; and
- Delete the words “including associated vegetation clearance” from the scope of mechanical land preparation and clarify that the regulations do not apply to vegetation clearance before afforestation.

4.6 FORESTRY QUARRYING

The NES-PF discussion document defined quarrying as “*the extraction of rock, sand or gravel for the formation of forest roads. ... Scope includes the extraction of alluvial gravel outside river beds*”. The draft NES-PF rule set provided for quarrying as a permitted, controlled or restricted discretionary activity as follows:

- **Permitted activity:** quarrying in all zones except in the ESC Red Zone where the ESC identifies the land as having the potential for severe or very severe earthflow or slump erosion, and where permitted activity conditions are met. Permitted activity conditions relate to notice of commencement, visibility, setbacks, fill and spoil, transportation of material, restoration, water table, preparation of a Quarry Erosion and Sediment Management Plan;
- **Controlled activity:** quarrying in all zones where any of the permitted activity conditions (except property setback) cannot be met, excluding quarrying in land in the Red Zone where the ESC identifies land as having the potential for severe or very severe earthflow or slump erosion;
- **Restricted discretionary activity:** quarrying in all zones where property setback conditions cannot be met, and in the Red Zone where the ESC identifies land as having the potential for severe or very severe earthflow or slump erosion.

Quarried material is used in any forestry related operation that requires the formation of a stable surface, such as roads. Many large forests have dedicated quarries within the forest that may have been in use over numerous rotations. In smaller first-rotation forests, material may be extracted from suitable sources encountered during road construction, resulting in numerous small extraction sites (referred to as borrow pits).

The NES-PF discussion document noted that quarrying has effects similar to earthworks activities in relation to soil/slope stability, water quality, landscape, and effects on cultural sites. There may be noise, vibration, dust and vehicle issues associated with quarrying but these matters were either addressed by general conditions or specifically kept out of scope from the NES-PF to allow council to retain their ability to manage these matters.

4.6.1 Summary of Issues Raised

A range of comments were made in submissions in relation to quarrying. Some submitters considered that the proposed provisions for quarrying were too restrictive, whereas others

considered they were not restrictive enough. The main issues raised in submissions are summarised below followed by a summary of more specific comments.

Quarry in Erosion-Prone Land

Some submitters stated that the activity status for quarrying was too permissive. It was considered that quarrying should not be permitted on the most erosion prone land and resource consent should be required for quarrying on land identified as being highly susceptible to erosion in accordance with the ESC. Some submitters also noted that the impacts of quarrying are similar to earthworks, and therefore the rule set and activity status for quarrying should be more consistent with the earthworks provisions in the NES-PF.

Quarry Erosion and Sediment Management Plan

A number of submitters commented on the conditions relating to the preparation and content of a Quarry Erosion and Sediment Management Plan. Some submitters considered that the inclusion of a Quarry Erosion and Sediment Management Plan would have little value unless the process is amended to allow council certification. Submitters commented that this provides limited incentive to prepare a good plan and is reliant on the goodwill of foresters.

Conversely, some submitters emphasised their support for the management plan approach in the NES-PF, stating that this is a positive step in managing the effects of forestry. Some submitters also noted their support for the development of management plan templates while stating that it is important that councils are involved in the development of these templates. However, submitters also stated that a Quarry Erosion and Sediment Management Plan would be unnecessary for small scale quarrying activities that typically have minor effects. It was recommended that a volumetric threshold should be introduced which would trigger the need to prepare a Quarry Erosion and Sediment Management Plan.

Submitters also noted a disconnect between the proposed Quarry Erosion and Sediment Management Plan requirements, which require forest operators to detail sediment control measures, and the permitted activity conditions for quarrying, where there were no conditions that explicitly required these measures to be installed.

Traffic Management

The proposed NES-PF rules for quarrying included a permitted activity condition that no material could be transported off the site on public roads. Submissions from the forestry sector considered that this would be overly restrictive and unrealistic in many cases, as forests are often intersected by public roads. It was noted that vehicles moving within a single forest may need to travel short distances along public roads and this should be provided for within the permitted activity conditions. Conversely, there were other submitters who agreed that transportation of quarried material on public roads should remain as a matter for council assessment.

Other comments made in submissions in relation to quarrying are summarised below:

- *Scope of quarrying* – some submitters raised concerns about the scope of quarrying under the NES-PF. For example, some submitters questioned whether borrow pits²³ are included within the scope of quarrying. There were other comments made that the NES-PF should not manage quarry operations as they are relevant to a number of activities, not just forestry;
- *Volume limits* - it was suggested that a maximum permitted activity volume limit should be included for quarrying. This was considered important to reduce the potential for inappropriate permitted activity baselines to be applied; and

²³ [define]

- *Visibility and amenity* - some submitters considered that the visibility conditions were uncertain and subjective and would be difficult to comply with and enforce. There was also a concern that the conditions related to visibility and setbacks were insufficient to manage the visual impacts of quarrying.

4.6.2 Analysis

Quarry of Erosion-Prone Land

Quarrying will generally occur on more stable ground, where areas of hard rock exist, as this is the material required for road surfaces. However, mass extraction of rock and the movement of associated spoil does have potential risks related to sediment generation and overall stability of the site.

For these reasons, it is considered appropriate to refine the permitted activity thresholds in the NES-PF rule. This should restrict quarrying as a permitted activity to locations that are less susceptible to erosion, with a resource consent required in locations that are more erosion prone. A suitable resource consent threshold is quarrying on earthflow terrain within the ESC Orange Zone and quarrying within the ESC Red zone. This would better manage the potential risk of sedimentation and erosion from quarrying at these locations through a consenting process that allows the operation and site specific risks to be considered. It would also better align the permitted activity thresholds with those for earthworks, which is appropriate given that the effects are similar.

Quarry Management Plan

Submitters highlighted a disconnect between the conditions for a Quarry Erosion and Sediment Management Plan which require forestry operators to detail sediment control measures, but the permitted activity conditions do not require these controls to be installed. The NES-PF rules and conditions are intended to provide a strong linkage between management plan requirements and permitted activity conditions to ensure management plans are targeted to the effects, and that these conditions are enforceable. It is therefore recommended that the permitted activity conditions include requirements for sediment, water run-off and stormwater control measures to be installed, consistent with the conditions for earthworks.

Consistent with the recommended changes to earthworks conditions, it is recommended that a lower level threshold is provided for the preparation of a Quarry Erosion and Sediment Management Plan. While most quarries are of a scale that warrants the preparation of a Quarry Erosion and Sediment Management Plan, there are also some very small scale quarrying activities where the preparation of a Quarry Erosion and Sediment Management Plan would be overly onerous. As such, it is recommended that quarrying involving less than 200m³ of extraction in any calendar year is excluded from the Quarry Erosion and Sediment Management Plan requirement.

Traffic Management Plan

The NES-PF proposed that transportation of quarry materials on public roads is not a permitted activity, recognising that this can have nuisance effects (dust, noise and vibration) and can also result in mud and debris being deposited on public roads. However, it is recognised that this may be overly restrictive to forestry operators, and there should be greater flexibility for public roads to be used when travelling short distances whilst ensuring that forestry quarrying rules are not used to set a permitted baseline for non-forestry quarrying operations. It is therefore recommended that the permitted activity conditions for the transportation of quarry materials be refined to allow for some use of public roads provided:

- The material is being transported to a property under the same ownership or management as the plantation forest;

- The material is being transported less than 2km;
- Debris and soil is removed from wheels; and
- Transportation of this material avoids urban areas and areas primarily for rural residential and country living.

Other recommendations to improve the rules in response to submissions include:

- *Scope* – it is recognised that there was a level of uncertainty in the scope of quarrying under the proposed NES-PF. As such, it is recommended that the definition of forestry quarrying be redefined to clarify what it includes and excludes, and make it clear that the rules would only apply to quarries within the boundaries of the plantation forest or required for the operation of a plantation forest on adjacent land owned or managed by the owner of the plantation forest. This will help to distinguish forestry quarries from other quarries. The scope of quarrying should also make it clear that quarry material can be for any infrastructure within a forest, not just forestry roads;
- *Volume limits* – it is not considered necessary to provide limits on the volume of extracted material from within a forestry operation, as these effects will generally be contained within the site. However, it is recognised that the scale of quarrying operations becomes more of an issue when these are located near an adjoining property under different ownership. As such, the permitted activity conditions restrict extraction volume where the operations are visible from dwellings and sites are under different ownership, and this approach is considered to be appropriate; and
- *Visibility and amenity* - the proposed NES-PF included conditions to manage the visual and amenity effects including setbacks from dwellings and urban areas and volumetric limits where the quarry is visible from dwellings. These measures are generally considered to be effective but it is recognised that the visibility conditions in the draft NES-PF rule set were uncertain. To improve the certainty and enforceability of the visibility conditions, a standard 2 km visibility distance is proposed and within this distance the volumetric limits would apply. A limit on the number of quarries than can occur within this area is also recommended.

4.6.3 Recommendations

To address concerns raised in submissions in relation to the control of quarrying, the following changes are recommended:

- Adjust the permitted activity threshold for quarrying to better manage sediment and erosion risk. This should allow quarrying as a permitted activity, subject to conditions, where it proposed on land that is less susceptible to erosion and manage quarrying as a restricted discretionary activity on land that is more susceptible to erosion (ESC Red Zone and earthflow terrain in the ESC Orange Zone);
- Refine the Quarry Management Plan requirements (and associated conditions) to:
 - Include permitted activity conditions for sediment, water run-off and stormwater controls to be installed which are linked with the requirements for the Quarry Erosion and Sediment Management Plan to provide details of these measures;
 - Provide a lower level limit where a Quarry Erosion and Sediment Management Plan does not need to be prepared where the volume of extraction is 200m³ or lower per calendar year.
- Amend the permitted activity conditions to allow the transport of quarry material on public roads, provided this is being transported to property under the same ownership or

management and for 2km or less, debris and soil is removed from wheels, and that the routes avoid urban areas;

- Redefine the definition of forestry quarrying under the NES-PF to make it clear that this relates to extraction of material within the plantation forest or required for the operation of a plantation forest on adjacent land owned or managed by the owner of the plantation forest, for the purpose of providing material for forestry roads and other associated infrastructure; and
- Refine the visibility condition so that the volumetric limits apply within a standard 2km visibility distance from any dwelling and provide limits on the number of quarries within this area.

4.7 HARVESTING

Harvesting was defined in the NES-PF consultation document as “*the act of felling and extracting trees and the associated soil disturbance*”. This includes:

- Discharge of slash and contaminants to land and water associated with harvesting;
- Production thinning;
- Soil disturbance associated with harvesting;
- Damage to indigenous vegetation adjacent to the plantation forest or within the plantation forest areas when necessary to remove a plantation crop; and
- Riparian vegetation disturbance.

The draft NES-PF rule set provided for harvesting as a permitted, controlled and restricted discretionary activity as follows:

- ***Permitted activity:*** harvesting in ESC Green, Yellow and Orange Zones where the permitted activity conditions are met. Permitted activity conditions relate to notice of commencement, preparation of a Harvest Management Plan, ground disturbance outside riparian areas, riparian disturbance, and slash and debris management.
- ***Controlled activity:*** harvesting in Green, Yellow and Orange Zones where the permitted activity conditions are not met, and harvesting in the Red Zone that is not land use capability class 8e.
- ***Restricted discretionary activity:*** Harvesting in Red Zone that is class 8e.

The NES-PF consultation document noted that the main risks associated with harvesting are sediment and slash delivery into waterbodies, and soil erosion. This can degrade water quality and adversely affect habitats, and also adversely affect downstream receiving environments and infrastructure.

4.7.1 Summary of Issues Raised

There were a number of general and specific comments made in relation to harvesting in submissions. A summary of the main issues raised in relation to harvesting is provided below, followed by a summary of specific comments.

Slash management

One of the concerns raised in submissions in relation to harvesting is the risk of slash delivery to downstream receiving environments during harvesting operations. This was a particular concern from some submitters in regions where a combination of topography and high rainfall events has resulted in large volumes of slash being transported to downstream freshwater and

coastal environments. A number of submissions made recommendations to better manage the effects of slash during harvesting through the NES-PF. These suggestions include:

- A requirement for the Harvest Plan to specifically identify the risks of slash delivery to receiving environments and suitable mitigation measures to manage these risks;
- Permitted activity rules should require the removal of slash from within, and adjacent to, waterbodies; and
- The slash management rules for the ESC Orange Zone should also apply to the Red Zone.

Sediment management

A number of forestry sector submitters highlighted a specific issue with the draft NES-PF conditions to manage sedimentation from harvesting, noting that it would be very difficult to achieve in practice. The draft conditions stated that any soil disturbance from harvesting activities outside the riparian zones must be established or contained to “prevent” the movement of sediment into any waterbody.

Submitters raised concerns that it is generally impossible to “prevent” all sediment entering a waterbody during harvesting operations, especially during high intensity rainfall periods. Submitters recommended that the rule be reframed to allow some flexibility for minor effects, while still encouraging good sediment control practices.

Harvest Plan

There were a number of comments in submissions about the permitted activity conditions in the NES-PF relating to the requirement for and content of the Harvest Plan. Some of the issues raised were related to management plans generally, and these general comments are discussed in section 3.4. However, submitters also provided some specific comments on the Harvest Plan. This includes:

- Harvest Plans should only be required for ESC Red and Orange Zones;
- Harvest Plans should have specific objectives, and operators should be required to show how these objectives will be achieved to enable auditing; and
- The need for Harvest Plans to consider site specific erosion and slash risks and the effects on downstream receiving environments.

Other comments

In addition to the above sub-themes, submitters made a number of specific comments in relation to harvesting. These comments include:

- Requests that harvesting should not be a permitted activity in the ESC Orange Zone or on steep erosion prone land generally (this is discussed in section 3.1 in relation to the changes to the ESC);
- Concern from some forestry sector submitters that the requirement for full suspension over all streams greater than 3 metres wide was overly onerous. There was a concern that this would increase the number of consents required for industry and therefore increase their operational costs. It was also noted that this may lead to an increase in the amount of earthworks and roads required for harvesting activities;
- Requests by forestry sector submitters for greater flexibility in the “notification of commencement requirements” so that the timeframes are reduced and there is a reduced timeframe for emergency work, wind throw and salvage;
- Requests that there needs to be greater consideration and ability to manage the effects of harvesting on sources of human drinking water; and

- Clarification of terms and definitions to provide greater certainty in the application of the rules (e.g. measurement of 75% canopy cover, definition of temporary tracking).

4.7.2 Analysis

An analysis of the main issues raised in relation to harvesting is provided below. However, the most significant change for harvesting is the recommended changes to the ESC outlined in section 3.1 to reclassify higher risk ESC Orange Zone to ESC Red Zone and apply more stringent controls on harvesting in that reclassified area. This will result in resource consent now being required for harvesting on that land, enabling councils and forestry operators to develop site specific controls and practices to manage adverse effects during harvesting.

Slash management

The proposed NES-PF included specific consideration of the need to plan for, and manage, the effects of slash during harvesting operations through a Harvest Plan. This stated that a Harvest Plan shall include “*a documented process for assessing and managing the effects and potential risks of slash entering waterbodies appropriate to the scale and level of risk*”. This requirement is generally considered to be sound to ensure slash management is adequately considered when planning and undertaking harvesting operations. However, it is recognised that it could benefit from more explicit consideration of the effects of slash on downstream receiving environments and infrastructure.

To respond to submissions about the containment and removal of slash from waterbodies, it is recommended that this is included as a specific matter of control or discretion when a consent is required for harvesting. The Harvest Plan guidance will also outline good slash management practices during harvesting, including the situations where slash removal is appropriate and methods to remove slash.

Sediment management

It is recognised that the requirement for forestry operators to prevent any soil entering waterbodies during harvesting could be overly onerous, and unachievable in many circumstances. However, active soil erosion management and mitigation practices are still required under the NES-PF to achieve good environmental outcomes. It is therefore recommended that the rule is adjusted to allow for minor effects from sediment runoff. The discharge standards in section 70 of the RMA are considered to provide a good basis to specify the level of effects on receiving waterbodies that must be avoided, coupled with a requirement to minimise sediment inputs to waterbodies.

Harvest Plan

It was suggested in submissions that Harvest Plans should only be required for harvesting activities within the Orange and Red ESC Zones. However, planning for harvesting activities and the associated environmental effects through a management plan is considered to be good practice regardless of its location, as these plans address matters other than sedimentation (e.g. identifying any SNA areas within the harvest activity area). It is therefore recommended that the requirement for a Harvest Plan to be prepared is retained within all ESC zones.

It is considered that other issues raised in submissions in relation to Harvest Plans can be addressed adequately through the development of effective guidance on harvesting planning and good management practices for harvesting in different environments. Specifically, it is recommended that the Harvest Plan guidance focus on:

- Ensuring management practices are clearly linked to the level of performance required in the permitted activity conditions;
- The detail in the management plan corresponds to the scale, significance and potential adverse effects of the operation;

- Incorporating site specific objectives into the management plan that relate to site specific risks as a means to show how permitted activity conditions will be met and the desired environmental outcomes will be achieved; and
- Ensuring the management plans are based on good industry standards and established best practice management practices.

Other comments

A number of small improvements to the wording of the harvesting rules in the NES-PF are also recommended. These are focused on addressing areas of uncertainty identified in submissions (e.g. determining canopy cover) and ensuring that the rules are clear, certain and enforceable.

It is also recommended that the requirement for full suspension is retained for streams greater than 3 metres wide. Further analysis and engagement with the forestry sector concluded that in areas where 3 metre wide streams exist, the valleys are generally wider and full suspension is achievable. Full suspension is problematic over incised gullies, and these are generally in headwaters where streams are less than 3 metres wide.

Comments relating the potential effect of harvesting activities on sources of human drinking water are addressed through the proposed changes in the ability to be more stringent under the NES-PF outlined in section 3. These changes will enable councils to have more stringent rules when necessary to protect certain sources of human drinking water.

4.7.3 Recommendations

To respond to issues raised in submissions in relation to harvesting, the following recommendations are made:

- Reclassify the highest risk ESC Orange Zone to ESC Red Zone and require resource consent for harvesting in that reclassified forestry land;
- Include slash management as a matter of control or discretion when consent is triggered, and provide specific guidance on slash management through the Harvest Plan guidance materials;
- Reword the ground disturbance conditions to require that sediment reaching streams is minimised, rather than prevented, to retain the focus on good sediment control practices to mitigate effects on receiving environments. Include a reference to water quality standards for the discharge of sediment that are consistent with section 70 of the Act;
- Include comprehensive guidance to promote best practice in harvesting planning and operations to minimise the adverse effects from sediment runoff and slash delivery; and
- Refine the wording of the rule set so that it is more consistent with established best practice management rules and conditions for harvesting.

4.8 PRUNING AND THINNING TO WASTE

The NES-PF consultation document defined pruning, thinning, and thinning to waste as follows:

- **Pruning** - “the removal of branches from a tree”;
- **Thinning** - “the selective removal of trees within a stand. Thinning operations must leave a minimum of 250 stems per hectare”; and
- **Thinning to waste** - is “operations [that] leave the felled trees in situ”.

The draft NES-PF rule set provided for pruning and thinning-to-waste as a permitted or controlled activity as follows:

- **Permitted activity:** In all ESC zones, subject to meeting regional conditions preventing deposition of slash in waterbodies; and
- **Controlled activity:** If the permitted activity conditions cannot be met.

Pruning and thinning-to-waste typically has minor environmental effects if carried out appropriately. The main issue relates to where the pruned or thinned material (i.e. slash) is located, and the potential for this material to be deposited in waterbodies. In large quantities, this can have adverse environmental effects on water flow, water quality, and aquatic life. Where slash is mobilised, particularly in high rainfall events, it may also cause damage to property and infrastructure. The proposed rule framework for pruning and thinning-to-waste was essentially aimed at ensuring that slash and other forestry debris was not placed in waterbodies, or where it may enter waterbodies, to avoid these potential adverse effects.

4.8.1 Summary of Issues Raised

The major issue raised by submitters related to the adverse effects from pruning and thinned material entering waterways. There were some concerns expressed about the robustness of the rules and conditions to manage the adverse effects of slash, with suggestions made that slash should be removed from waterways without exception. Some submitters also suggested that both the restriction on the deposition of slash and the requirement for removal of slash should also apply to land subject to floods. Concerns were also raised that the rule only applied to permanent waterways, which assumes temporary streams are of lower value and don't warrant the same level of protection. However, there were other submitters who noted that it is not practicable or appropriate to remove all pruning waste from waterbodies.

Other comments made in submissions on the draft pruning and thinning rule set are summarised below:

- Some submitters considered that a minimum stocking rate of 250 stems per hectare was not appropriate for all forestry regimes or species. It was considered that if the logs are not being removed, then the slash management provisions in the NES-PF should be sufficient to manage adverse environmental effects;
- Concern about the lack of certainty in the rules about exactly how the management of slash around waterbodies is to be undertaken. In particular, there was a concern that the wording of the rules leaves too much discretion to operators, and there is potential for divergent views on whether the various conditions have been satisfied or triggered (e.g. terms such as “potential”, “likely” and “significant”);
- Concerns about the requirement to remove slash from waterbodies when it is ‘safe and practicable’ to do so, and how this would be interpreted and complied with;
- Some submitters made comments that the permitted activity condition refers to mobilisation during flood flows but does not specify the severity of the flooding event, which creates some uncertainty for landowners and councils. It was recommended that the specific 10 year flood return period referred to in the explanation of the rule be included within the permitted activity condition; and
- Submitters suggested that the matters where control is reserved should correspond better with the issues listed. It was also felt that there was a degree of repetition in the matters of control listed, and that these matters could be rationalised.

4.8.2 Analysis

The proposed NES-PF rule set is intended to manage the potential adverse effects of pruning and thinning by allowing the deposition of slash as a permitted activity, provided the deposition is in a location where it will not enter a waterway. This is generally considered to be appropriate to manage the adverse effects of pruning and thinning-to-waste which are typically minor. However, some small amendments to the rule set are recommended in response to submissions as outlined below.

Minimum stock rate

The minimum stocking rate of 250 stems per hectare was intended to minimise the risk of slash mobilisation following thinning to waste. While pruning and thinning to waste operations generally have a low risk of slash mobilisation, the potential risk increases with higher rates of thinning. The potential risk also increases where the slash is located adjacent to waterbodies (which the NES-PF rule set seeks to discourage), and with steeper slopes and certain terrain conditions (e.g. gullies where slash can accumulate).

Submitters raised concerns that the minimum stocking rate of 250 stems per hectare is not appropriate for all forestry regimes or species. Analysis of this issue has identified that more flexibility in the stocking rate is desirable. It is therefore recommended that the minimum stocking rate be removed from the definition of thinning in the NES-PF.

Other recommended amendments to the pruning and thinning to waste rules and conditions include:

- Apply the rule to all waterbodies not just perennial waterbodies;
- Update the wording of the rules to reduce subjectivity and uncertainty in their interpretation and administration (e.g. remove terms such as “if it has the potential to”, “is likely to”, “practicable”). This will be supported by guidance on terms (e.g. unsafe, 5 % Annual Exceedance Probability), and best practice methods for slash and debris management during forestry operations to assist with interpretation and compliance of the rule;
- Replace the reference to the mobilisation of slash during flood flows from the permitted activity condition with a requirement to not deposit slash/remove slash on land covered by a 5% AEP flood event to provide more certainty; and
- Rationalise the matters of control so that they are more focused on the effects of concern. Consistent with the recommended amendments to the matters of discretion for mechanical land preparation, these matters should focus on effects on ecosystems, freshwater and the coastal environment. For pruning and thinning, matters of control should also be focused on hydrological flow, methods to minimise erosion and discharge of slash, and potential effects on downstream infrastructure, property or receiving environments.

In addition, it is recommended that the NES-PF rule set include more comprehensive conditions for slash traps as a means of mitigating the adverse effects of slash on downstream receiving environments and infrastructure. This is discussed more in general provisions - section 4.10.

4.8.3 Recommendations

To address concerns raised in submissions in relation to the adverse effects of pruning and thinning to waste, the following changes are recommended:

- Remove the minimum stocking rate from the definition of thinning in the NES-PF;
- Revise the wording for the rules and conditions for pruning and thinning to waste so that they are more certain and enforceable;

- Replace the reference to avoiding the mobilisation of slash during flood flows from the permitted activity condition with a requirement to not deposit/remove slash from land covered by the 5% AEP event; and
- Develop guidance on terms and best practice methods for slash management.

4.9 RIVER CROSSINGS

The NES-PF consultation document defined the scope of river crossing as involving “*the installation, construction, placement, use, maintenance, alteration, removal or extension of a crossing in, on, under or over the bed of a river, lake or wetland, and associated bed disturbance*”. The NES-PF draft rule set provided for river crossings as a permitted, controlled, restricted discretionary or discretionary activity as follows:

- **Permitted activity:** All types of river crossing, subject to meeting general conditions that apply to all river crossing and conditions specific to the type of crossing (i.e. conditions specific to temporary crossings, single culverts, battery culverts, drift deck, fords, and single-span bridges).
- **Controlled activity:** River crossings (excluding fords) that cannot meet one or more of the general permitted activity conditions, or that exceed the permitted activity thresholds for the specific river crossing, but can meet the controlled activity conditions.
- **Restricted discretionary:** River crossings that exceed the thresholds for controlled activities, subject to meeting conditions.
- **Discretionary activity:** River crossings that cannot meet the thresholds for restricted discretionary activity conditions.

River crossings are essential in providing access for several forestry operations, but principally for harvesting operations. They comprise both permanent and temporary structures and include bridges, culverts, fords, battery culverts, drift decks and log crossings. However, river crossings can cause the following effects:

- Sedimentation of the river during construction;
- Restriction or prevention of fish passages if not constructed properly;
- The activation or acceleration of bed erosion by concentrating flows or velocities;
- Accumulation of debris around culvert openings and bridge abutments, which can result in flooding; and
- Damage to downstream infrastructure and receiving environments, in the event of catastrophic structural failure.

4.9.1 Summary of Issues Raised

There was a range of general and specific comments made in submissions in relation to the draft river crossing rules in the NES-PF. The main themes in submissions are summarised below, followed by a summary of more specific comments.

The restrictiveness/permisiveness of the provisions

There was some general support from submitters on the river crossing rules in the NES-PF. However, there were also submitters that considered the rules were too permissive, while others believed that the provisions were too restrictive.

For example, NES-PF river crossing rules were considered to be more lenient than those currently imposed in Southland, but more restrictive than those in Northland. It was noted that the difference in stringency of river crossing rules for foresters compared to other land uses

may lead to inconsistencies and conflicts, whereby the river crossing rules for forestry are different to other resource uses. Submitters variously suggested that a higher activity status should be afforded to structures on the beds of rivers, and that other land-uses would be subject to less (or more) stringent river crossing rules than forestry operators.

There was also some concern expressed that the approach required under the NES-PF would be too restrictive and onerous on smaller foresters in this respect. Submitters also expressed some concern that the level of detail in the crossings rules (in order to cover each different type of crossing) created a complicated regime that was difficult to follow.

Temporary river crossings

Submitters raised concerns that the timeframe for having a temporary crossing in place, and its subsequent removal was too short. It was suggested that this should be changed to allow temporary river crossings to be in place for periods ranging from 20 working days to a maximum of 3 months. It was also suggested that the timeframe for removal be increased from 24 hours to one week.

Some submitters raised concerns that there was no requirement for fish passage for temporary river crossings, or any justification as to why this is not required (although the rules proposed that such crossing be in place for a maximum of two weeks, suggesting that the duration of any effect was quite constrained). Submitters also noted that the consultation document recognises that crossings may be temporary (which is typical during the harvesting period), but the draft rule set for river crossing did not differentiate temporary crossings. Submitters called for this to be refined.

Fish passage

A number of comments were on the fish passage provisions. Submitters considered that the reference to relevant statutory fisheries managers needed clarification. Submitters also considered that fish passage should be provided under all circumstances, and for all rivers, including intermittently flowing streams. Some submitters also raised concerns that the culvert size and location (depth below bed level) would not adequately provide for fish passage.

Technical design aspects

A number of submitters were concerned that the minimum culvert diameter (at 450mm) was excessively large, considerably greater than that proposed in the Forest Road Engineering manual (325mm) which would increase costs.

There were a number of submissions on very specific aspects of crossing design, for culverts, battery culverts, fords and drift decks, mainly to ensure that the design would adequately provide for fish passage.

Terminology and flow calculations

A number of comments sought clarification on terms used, both for the terminal extent of a river i.e. at what point was it no longer regarded as a River, and for the full extent of a crossing structure – seeking that it include any apron, flumes, and protection armouring up and downstream. Comments also sought clarification on which formula should be included for calculating flows, and whether these methods should all be specified in the standards, or whether there should be some scope to use alternatives.

There was also some concern raised in submissions that the NES-PF allowed river crossings to be permitted in wetlands, and this could lead to disturbance and damage to those wetlands and their ecological function.

4.9.2 Analysis

The environmental effects of stream crossings can be significant if the crossings are not well designed and constructed. If crossings perform poorly, effects can range from preventing fish passage and increased suspended sediment, to complete failure of the structure causing damage to off-site infrastructure.

The NES-PF rules and conditions for river crossings have therefore been designed to be comprehensive and risk-based. There are a number of different types of crossings, each of which have particular characteristics that require specific design to ensure they will be fit for purpose. This means that the stream crossing rules need to have a set of conditions that apply to all crossings, and further conditions that are specific to each crossing type. Because the risk increases with the size of the stream, each crossing type has size thresholds that progressively responds to the increase in risk, by increasing the resource consent status from permitted to discretionary.

No general change in the characterisation of crossings or of the thresholds is proposed as a result of submissions (i.e. the restrictiveness of the provisions remains as it was). An analysis of the other issues raised in submissions in relation to river crossings is provided below.

Temporary river crossings

No change is recommended to the period for which temporary crossings can be used. As this is only two weeks, the effect on fish passage is considered to be minimal.

Fish passage

Clarification of the reference to relevant statutory fisheries manager is not recommended as there are only two (Department of Conservation and Fish and Game), and the role of each is clear. Clarification is recommended to make it clear that 'river' refers to any flowing water body, including intermittently flowing streams, but not to ephemeral flow paths, which carry water only in high rainfall events. This will be addressed in guidance relating to fish passage for river crossings.

Technical design aspects

No change was made to the minimum culvert diameter as the sizes proposed in the consultation document are considered to be appropriate. A few minor changes to the specific aspects of crossing design are recommended mainly to improve the sequencing of conditions, to make it easier to understand the relationship between conditions.

Terminology and flow calculations

Clarification and consistency of terms in the river crossing rules are recommended to standardise the use of terms consistent with the RMA definition of river. It is also recommended that the number of formulae that can be used for calculating flows is reduced, to leave out modified Talbot. Further explanation on the use of flow calculation formulae will be covered in guidance that accompanies the NES-PF.

It is also recommended that the NES-PF rule set is amended to clarify that disturbance to wetlands should be minimised from river crossings. This should specify circumstances when:

- Crossings over wetlands are permitted because the risk is low; and
- Other circumstances where resource consent is required, including for any crossing over a wetland greater than 0.25 hectares (consistent with the wetland threshold size for setbacks).

Further discussion with foresters clarified that there is generally a strong preference to avoid putting crossings over wetlands, for cost and engineering as well as for environmental purposes. However, there are circumstances where there are long narrow fingers of wetlands

that are connected to larger broader wetlands, and putting in a crossing over such as wetland would avoid extensive tracking around them, which may have greater adverse effects. These circumstances are generally temporary during harvesting, and are the main situations when foresters could envisage crossing wetlands.

4.9.3 Recommendations

To respond to concerns raised in submissions in relation to river crossings, the following changes are recommended:

- Refine the methods for calculating flows;
- Standardise the use of terms for river, to be consistent with RMA definition of river;
- Revise and regroup conditions without changing content, to clarify and simplify the relationship between the conditions; and
- Amend the rule set to make clear that disturbance to wetlands should be minimised from any crossing, and require consent for the construction of any crossing over a wetland that requires works greater than 20 metres in length.

4.10 GENERAL PROVISIONS

The NES-PF consultation document proposed a set of general conditions that must be met in addition to the rules for specific activities. The conditions related to archaeological sites, fuel, vegetation clearance and disturbance, dust, noise, nesting times, spatial bundling, fish spawning, and slash traps. A summary of issues raised in relation to each issue is provided below, except the fish spawning general condition which is addressed separately in section 4.11.

4.10.1 Summary of Issues Raised

Archaeology and sites of heritage and cultural value

The general condition in the draft NES-PF rule set relating to archaeological sites (known and unknown) attracted a range of comments in submissions.

The main focus of submitter comments in relation to archaeology was whether it is appropriate for the NES-PF to include conditions relating to archaeological sites, and whether councils should be allowed to have more stringent rules in relation to archaeological sites. Some submitters stated that the NES-PF should allow councils to have more stringent rules to protect archaeological sites, as this was not provided for by the draft rules. Conversely, other submissions sought a national rather than a regional approach to the protection of archaeological sites. They also sought more specific provision in the NES-PF conditions to protect archaeological sites.

Some submitters highlighted the fact that the archaeological condition would create duplication with the archaeological authority processes under the New Zealand (Pouhere Taonga) Act 2014.

There was support in submissions for councils to have more stringent rules for places and sites of known heritage and cultural value. Some submitters, including iwi, were concerned that the ability to be more stringent was limited to sites that have been identified in plans, as there are many sites that are not identified in plans that still have high cultural and heritage significance. Some submissions also sought greater provision for early consultation and discovery processes to ensure that sites of heritage and cultural value are protected.

Vegetation clearance and disturbance

There were a range of comments made in submissions about the general condition related to vegetation clearance and disturbance in the draft NES-PF rule set. Submitters raised concerns that the condition would permit ‘incidental damage’ to indigenous vegetation. Concerns were also raised that this term was undefined, and this lack of clarity would require subjective assessments to determine what constitutes incidental damage.

Submitters also raised general concerns that the condition would permit damage to SNAs, which is inconsistent with section 6(c) of the RMA, and could potentially result in significant adverse environmental effects. There was also a concern that this condition does not consider the cumulative effects of allowing for incidental damage to indigenous vegetation.

Some submitters also raised concerns that the NES-PF rules do not provide adequate protection of indigenous vegetation that may not be recognised as SNA. It was noted that, in many cases, there is valuable indigenous vegetation that is not classified as ‘significant’ in plans, but still deserve appropriate recognition and protection from forestry activities.

Other comments in submissions relating to the general vegetation clearance and disturbance condition in the draft NES-PF rule set include:

- Concern that the permitted activity rule allows clearance and disturbance of indigenous vegetation overgrowing a ‘pre-existing access way’ with a lack of certainty about what types of tracks and paths this may cover
- Concern that there is no buffer zone or setback for forestry activities around any SNAs, which will put SNAs and indigenous vegetation at risk;
- Submitters raised concerns that the condition only referred to vegetation that will readily recover in 5 years. There was also concern that reference to ‘readily recover’ will require a judgement call about whether the damaged vegetation will recover within 5 years. It was considered that this test is subjective and uncertain and will lead to implementation and compliance issues.

Noise

A number of comments were made in submissions about the general noise conditions in the draft NES-PF rule set, which set out standard night and daytime noise limits for forestry activities with some exceptions. Some submitters considered that the NES-PF should not address noise, and council rules should continue to apply, particularly where their rules are more stringent. Submitters also sought that the application of the rule be extended beyond the nearest dwelling, to all dwellings or facilities attended by people.

Other comments in submissions in relation to the noise rule in the NES-PF include:

- Concern that the exception in the noise rule for machinery used in accordance with manufacturer’s instructions is uncertain and unworkable. Conversely, some foresters supported the exception as it recognises that forestry is part of the working rural environment;
- Concern that allowing lower noise limits to apply where neighbours approval has been obtained is uncertain and will create implementation and compliance issues; and
- Concern that the standards in the condition should be redrafted so that it is based on the New Zealand construction noise standard.

Indigenous bird nesting

Some submitters considered that the nesting time condition in the NES-PF should apply to additional birds and other species, not just those birds classified as Nationally Critical or Nationally Endangered. Some submitters also considered that management plan provisions should cover birds and other species. Some submitters also considered that councils should be

allowed to exercise greater stringency to protect threatened species within their region or district. Some submitters also considered that there needs to be better information on where birds are nesting, and that surveys should be undertaken to provide better information on these areas.

Some submitters sought more certain requirements in the rule to ensure that foresters protect nesting sites during their operations. Conversely, there were also concerns from foresters that the nesting time condition would be difficult to comply with, as it requires protection to be achieved in all circumstances.

Slash traps

There were a range of comments made in submissions about the slash trap rule and condition in the draft NES-PF rule set. Forestry sector submitters were largely supportive of the rule but sought some amendments, including a provision to allow slash traps to remain in the bed of a river for some years. There was also concerns from foresters about the responsibilities for slash traps where the land is sold, and ensuring the monitoring timeframes were workable.

Conversely, there was some opposition to the rule from environmental organisations as it was considered that a higher activity status (discretionary) is necessary to manage the adverse effects of slash traps. The concerns with slash traps were focused on ensuring the necessary maintenance is carried out over the forestry lifecycle, cumulative effects on fish passage, inadequate monitoring, and the uncertain wording of the rule leading to compliance issues. Some submitters also sought better alignment between slash trap rules and harvesting rules.

Spatial bundling

There were concerns in submissions from the forestry sector that the spatial bundling allowances in the general conditions (either 2 hectares or 10% of forestry area) were too small to be useful or measurable, particularly given the scale of ESC mapping. Conversely, some environmental organisations considered that the allowances were too permissive and expressed concern that even small areas of forestry activities in highly erosion prone areas can cause significant sedimentation effects.

Fuel

There were relatively few comments made in submissions about the fuel condition in the proposed NES-PF rule set. Comments in submissions include:

- The need to provide more certainty in the rule around fuel not entering water; and
- More detailed control for fuel storage and refuelling.

Dust

There were relatively few comments made in submissions about the dust condition in the proposed NES-PF rule set. The main comments related to a request for greater flexibility in the rule by requiring dust to be minimised rather than an absolute requirement for no dust beyond the boundary of the site.

Pest and weed transfer

There were comments in submissions that the NES-PF should include a general condition to control the spread of weeds and pests.

4.10.1 Analysis

Archaeology and sites of heritage and cultural values

Submitters raised a number of important and valid issues about the archaeological rules in the NES-PF, and how the NES-PF should best provide for the protection of cultural and heritage

sites from forestry activities. The main issue to consider is whether these issues are best addressed nationally or locally.

More specific provisions in permitted activity conditions for archaeological sites is not considered appropriate because the type and level of protection is often site specific and dependent on the requirements of the local iwi. These matters are best provided for by local council rules rather than through the NES-PF. The provisions of the Heritage New Zealand Pouhere Taonga Act 2014 will continue to apply to protect archaeological sites whether known or unknown.

Some submissions expressed concern about stringency for council rules only applying to identified heritage and cultural sites. It is recognised that often heritage and cultural sites will not be identified in council plans. This may be due to a range of reasons, including situations where iwi do not want to disclose the location of sites that are culturally significant to them. The existing stringency provision in the NES-PF in relation to cultural and heritage sites is dependent on the effectiveness of the rules of the relevant plan to protect such sites, and this varies throughout the country. However, these are wider issues that cannot be resolved through the NES-PF.

Guidance is recommended to promote better awareness of this issue among foresters, and to promote early engagement with iwi where they may be affected by forestry activities. For archaeological sites that are unknown or unidentified the Heritage New Zealand (Pouhere Taonga) Act 2014 will apply to protect these sites, and the Heritage New Zealand accidental discovery protocol will also continue to apply.

On balance, it is considered that local rules provide the most appropriate level and type of protection for cultural and heritage sites, and that these matters should be out of scope of the NES-PF. Therefore it is recommended that the protection of cultural and heritage sites is removed from the matters of stringency under the NES-PF and the archaeological condition is removed from the general conditions. This will allow councils to continue to manage the effects of forestry activities on heritage and cultural sites through their plan provisions. It will also help to address submitter concerns about the potential for duplication between the NES-PF and the archaeological authority processes under the New Zealand (Pouhere Taonga) 2014.

Vegetation clearance and disturbance

It is recognised that the reference to “incidental damage” in the conditions was uncertain and could create implementation and compliance issues in practice. To provide more certainty, it is recommended that the general vegetation clearance and disturbance condition in the NES-PF more clearly defines incidental damage. Defining incidental damage also helps to address submitter concerns in relation to cumulative effects of vegetation clearance and disturbance to SNAs. This definition will ensure that incidental damage to SNAs is permitted under tightly defined and limited circumstances to ensure the potential for adverse cumulative effects are appropriately managed.

Submitters raised concerns with the lack of protection and ability to be more stringent for areas of indigenous vegetation that are not recognised as SNAs under section 6 of the RMA. The general condition for indigenous vegetation clearance and disturbance will apply to all indigenous vegetation and only permit clearance and disturbance in clearly defined situations. As such, it is considered that the NES-PF conditions provide adequate and appropriate protection for indigenous vegetation outside SNAs.

In relation to other comments made in submissions regarding the general vegetation clearance and disturbance condition, the following changes are recommended:

- Greater clarity is provided on what types of tracks and paths qualify as “pre-existing tracks” for the purposes of this condition, and this should be limited to those tracks and paths that have been used relatively recently (e.g. within the last 50 years); and
- It is recognised that the references in the conditions to vegetation “readily recover” within 5 years is subjective and will be difficult to accurately assess in practice, and this may create implementation and compliance issues. As such, it is recommended that the reference to indigenous vegetation needing to “readily recover” is clarified and the timeframe reduced.

Noise

It is not considered appropriate to allow council noise rules to apply and be more stringent than the NES-PF; noise is an issue that is well suited to a NES as there is little need for variation. There are also nationally accepted standards which the revised noise conditions in the NES-PF have been designed to be in accordance with. Established New Zealand noise standards state that noise limits shall apply at any noise sensitive activity, not just the nearest dwelling, and it is recommended that the NES-PF rule is amended accordingly. It is also recommended that the noise standards are adjusted to provide a more permissive daytime noise limit, but a more stringent night time and Sunday limit, and include an Lmax limit for night time, in accordance with NZS noise standards.

In relation to other comments made in submissions in relation to the NES-PF noise rule, the following changes are recommended:

- It is recognised that the exemption which related to machinery carried out in accordance with manufactures instructions is not practical to apply. An alternative is to set a noise limit that accounts for the temporary nature of the activity. This would mean that forestry activities remote from noise sensitive activities could comply with no constraints, but forestry activities adjacent to noise sensitive activities may require noise mitigation. This would mean that resource consent would not be triggered for the majority of activities, only where the potential noise effects are significant. This alternative approach is recommended;
- The provision for neighbours approval as a permitted activity condition is not practical, or workable or sufficiently certain. It is recommended that the condition is also removed from the noise rule; and
- It is agreed that NZS 6803:1999 provides an appropriate basis to set noise limits for temporary forestry activities but it is recommended that these standards are simplified in the noise conditions in the NES-PF. The noise rule should also refer to sound measurements being in accordance with NZS 6801:2008, and noise being assessed in accordance with NZS 6802:2008.

Indigenous bird nesting

It is recognised that there are other indigenous bird species that are located in plantation forests which are vulnerable to disruptive forestry activities and would benefit from additional protection through the indigenous bird nesting condition.

Extending the regulations to cover all ‘nationally threatened bird species’ in the New Zealand Threat Classification System²⁴, (i.e. extending the list to Nationally Vulnerable bird

²⁴ The Department of Conservation uses the New Zealand Threat Classification System (NZTCS) to assess the conservation status of species according to the risk of extinction they face within New Zealand. There are three categories of threatened species (Nationally Critical – most severely threatened, facing an immediate high risk of extinction, Nationally Endangered – facing high risk of extinction in the short term, Nationally Vulnerable – facing a risk of extinction in the medium term) and four categories of at risk species (declining, relict, naturally uncommon, recovering).

species)²⁵) would provide an added level of protection where the level of risk is greatest and this is recommended. However, this category does not include North Island brown kiwi, the North Island weka and the New Zealand falcon as these are not considered nationally threatened²⁶. These birds are particularly at risk from plantation forestry activities because they are either ground dwelling (kiwi, weka) or nest on the ground (falcon). While many forestry operators implement voluntary practices to protect these species, adding them to the list of species in the NESPF will provide an added level of protection for these species and this is recommended.

It is important to note that the NES-PF will also allow councils to have the flexibility to apply more stringent rules to protect SNAs – which includes significant habitats of indigenous fauna. This will enable councils to protect the habitats of other indigenous species within their region or district as necessary.

It is recognised that better information on bird nesting areas would help improve the certainty and compliance of this rule. However, the costs to develop surveys tools or undertake baseline surveys would be significant. A more practicable approach is to provide guidance on bird species in forests and the nesting times, which will help make the rule more certain and workable. This approach is recommended.

It is also recommended that the rule is amended to:

- Be more specific on the procedures that must be used to minimise adverse effects on listed bird species. This will provide added certainty to foresters and councils.
- Require adverse effects on nest sites and bird species to be minimised rather than require nesting sites to be protected. This is considered to be a more workable and certain approach and reflects the reality that good practice can minimise effects but absolute protection cannot be guaranteed and that both the birds themselves when nesting and the nest sites should be addressed. Guidance should also be developed on appropriate procedures building on existing procedures developed by industry and DOC.

Slash traps

Slash traps can be useful tools to prevent slash being transported downstream, causing damage to aquatic receiving environments and infrastructure. However, slash traps also potentially carry a risk of damage to property and life if they fail, and can also adversely affect fish passage if not properly constructed or maintained.

Various designs of slash traps are still being trialled and it is recognised that there is a lack of knowledge both on their appropriate location and design to avoid risks, and their effectiveness. However, it is possible to redraft the permitted activity slash traps rule so that it only applies where slash traps and catchment size is limited. This will ensure that if a slash trap is overwhelmed it does not increase the risk of damage downstream. It is also recommended that the regulations include permitted activity conditions to manage the effectiveness, condition and performance of the slash trap in order to manage environmental effects such as river flow, fish passage and sediment discharge during construction.

²⁵ The Department of Conservation uses the New Zealand Threat Classification System (NZTCS) to assess the conservation status of species according to the risk of extinction they face within New Zealand. There are three categories of threatened species (Nationally Critical – most severely threatened, facing an immediate high risk of extinction, Nationally Endangered – facing high risk of extinction in the short term, Nationally Vulnerable – facing a risk of extinction in the medium term) and four categories of at risk species (declining, relict, naturally uncommon, recovering).

²⁶ The North island kiwi is categorised as at risk (declining) and the bush and eastern falcon are categorised as At Risk (recovering) as is the North Island weka.

A restricted discretionary activity status is recommended for any slash trap above the permitted activity threshold to enable councils to exercise control over their location and design.

The NES-PF can authorise the construction of slash trap but cannot require a slash trap to be constructed. Therefore it is not appropriate to include a requirement for a slash trap to be in place for any specified period of time. The appropriate timeframe will vary and it is not appropriate for these to be specified in the NES-PF. Guidance can help to clarify an appropriate period of time for a slash trap to remain in a river after harvesting and also clarify landowner responsibilities for slash traps when the property is transferred to different ownership/management.

Spatial bundling

The spatial bundling rule was intended to recognise that many forestry operations are carried out across a number of ESC Zones, and allow for an activity to be treated as permitted when there is only a minor overlap into an ESC Zone that would require consent.

Further analysis of the spatial bundling issue suggests that a better approach is to permit a small extent of an activity within a high risk zone where consent would normally be required. This recognises that there is a risk threshold below at which requiring a resource consent for very small operations would impose costs with very limited environmental benefit. For small scale activities under this threshold, the applicable permitted activity conditions are considered to be sufficient to manage potential adverse environmental effects. This alternative approach is recommended.

In addition, it is recommended that the permitted activity condition for earthworks is redrafted to specify maximum volumes of cut and soil deposition, and a time period for the activity, rather than just the length of road extending into a high risk zone. This is considered to be a more effects based approach to manage the effects of sedimentation from forestry activities, and address concerns raised in submissions about sedimentation from activities in high risk zones. It is not considered that such an allowance is appropriate or required for forest quarrying as this is a more confined activity unlikely to span ESC zones and where even a small allowance could have significant effects. Forestry quarrying is also unlikely to take place on earthflow terrain.

Fuel

It is important that fuel is not discharged into water and that the condition is certain to avoid significant adverse effects. Amendments to the rules are recommended to make it clear that fuel cannot be discharged to water or onto land where it may enter water. It is also recommended that the fuel storage and refuelling permitted activity conditions include setback requirements of 10m to waterbodies and 30m to the CMA. .

Other requirements requested in the submission for bunding, fuel spillage clean-up and notification to councils are more appropriately addressed through HSNO regulations.

The level of detail in the general fuel rule and conditions is appropriate for a national instrument. More specific details can be addressed in site specific environmental risk site management plans, or emergency response plans under the HSNO regulations.

Dust

The draft dust condition requiring the dust to be kept on site applied to nuisance dust. To provide greater clarity and assist with implementation, it is recommended that the permitted activity condition is clarified so that dust beyond the boundary of a property must not be noxious, dangerous, offensive or objectionable. This will make the rule more flexible and practical. Setback requirements in the NES-PF will also help to avoid offensive and objectionable dust beyond the boundary of the site in most cases.

Pest and weed transfer

It is not considered necessary or appropriate for the NES-PF to include rules and conditions to control the spread of weeds and pests. Biosecurity is a regional council function under the Biosecurity Act, and regional council Biosecurity Strategies and Regional Pest Management Plans address these matters. In addition, the Department of Conservation and MPI have functions in relation to weed and pest control. Pest and weed control is best addressed through these existing functions, rather than through the NES-PF. The NES-PF will allow flexibility for plan rules to apply for this.

4.10.2 Recommendations

To respond to concerns raised in submissions in relation to the general conditions, the following changes are recommended:

Archaeology:

- Remove the condition for archaeological sites from the NES-PF;
- Remove the protection of heritage and cultural sites (including archaeological sites) from within the scope of the NES-PF, so that councils have the flexibility to continue to manage the effects of forestry activities on heritage and cultural sites through their plan provisions, whether through mapping or otherwise;

Vegetation clearance and disturbance

- Replace reference to vegetation needing to ‘readily recover’ within 5 years with a requirement to recover to a state where it will be predominately indigenous vegetation species within 36 months;
- Ensure the rules only apply to tracks that are or have been recently actively used (50 years);
- Define “incidental damage”;

Noise:

- Revise the noise rules to be more in accordance with NZS noise standards, including:
 - Applying noise limits at the notional boundary of all buildings containing noise sensitive activities;
 - Provide a more permissive daytime noise limit, but a more stringent night time and Sunday limit, and include an Lmax limit for night time; and
 - Refer to NZS standards for measuring and assessing noise.
- Remove the exemption from the noise limits and adjust the noise limits to allow for the temporary nature of forestry activities;
- Remove the conditions relating to neighbour approval of more lenient noise standards

Indigenous bird nesting

- Extend the list of bird species to include Nationally Vulnerable species as well as the following specific species: North Island brown kiwi, Eastern falcon, Bush falcon, and North Island weka;
- Allow flexibility for councils to have more stringent rules to protect SNAs;;
- Amend the condition to require adverse effects on the bird species to be minimised rather than solely protect nests;
- Improve certainty of wording to ensure compliance;

- Provide information on bird nesting times and species location in guidance material;

Slash traps:

- Revise the slash trap conditions to provide more certainty and reduce the potential risk of downstream damage. Amendments should focus on:
 - Specifying more certain monitoring and maintenance requirements;
 - Specifying that slash traps must allow fish passage and must not dam the river;
 - Limiting the height of permitted structures to two metres or less, and the catchment size to 20 hectares to ensure that the provision is workable but also manages risk at the appropriate level;;
 - Changing the activity status of slash traps that do not comply with conditions to be a restricted discretionary activity;

Spatial bundling

- Revise the spatial bundling approach so that, rather than treat an activity as permitted when there is overlap into ESC Red Zone, the rules permit small scale activities within the zones where consent is otherwise required, apart from severely erosion prone land, earthflow land, or forest quarrying;
- Revise the conditions to specify maximum volumes of cut and soil disturbance and time period associated with earthworks rather than the length of road;

Fuel

- Amend the rules to make it clear that fuel cannot be discharged into waterbodies, or onto land where it may enter water;
- Specify a setback from water bodies and the coastal marine area for fuel storage and refuelling; and

Dust

- Amend rule so that it requires no noxious, dangerous, objectionable or offensive dust to be deposited beyond boundary of a property.

4.11 FISH SPAWNING

Forests provide valuable habitats to indigenous and salmonid fish species. However, during harvesting and earthwork operations, and construction of river crossings, forestry activities can adversely affect the spawning habitats of freshwater fish. Currently, this risk is managed only partially through existing regional and district planning processes, and there is considerable variation across the country.

The fish spawning indicator and associated rule in the NES-PF has been developed to provide a more consistent approach to manage the effects of forestry activities on important fish habitats, by assessing the degree of risk from forestry activities and applying standard rules where risks are present. As fish spawning is seasonal, it is also intended that the rules are targeted at periods of higher risk so that restrictions on forestry activities only occur when they are absolutely needed.

To identify the species at risk, NIWA developed a report outlining fish spawning periods and sensitivity to forestry disturbance. This was then supplemented with additional data (the New Zealand Freshwater Fish Database and River Environmental Classification) to develop the Fish Spawning Indicator. The fish spawning rule in the NES-PF applies greater control to forestry activities when there is a higher risk of habitat disturbance of 21 species (i.e. during peak spawning periods when there is a high likelihood of species being present). This

generally restricts forestry activities during two periods (May-June and September-October) in the identified fish spawning areas.

To assist in compliance with, and the understanding of the fish spawning rule, MPI has developed an on-line mapping tool that displays the fish spawning indicator. This enables foresters to identify what species are present within streams and rivers within their property, and the time period where forestry activities may require consent because fish are spawning.

4.11.1 Summary of Issues Raised

The main comments in submissions in relation to fish spawning related to:

- The fish species covered by the rule;
- General bed disturbance and the need protect a wider range of habitats;
- Time period covered by the rule;
- Reference to ‘suitably qualified person’;
- The accuracy of the data used to identify the fish species; and
- Rule clarity.

These issues are summarised below.

Species covered by the rule

Some submitters suggested that a range of other freshwater species should be included in the fish spawning rule. The reasons submitters sought the inclusion of additional species in the rule includes the threat classification of the species, and their sensitivity to sediment or turbidity which forestry activities can generate.

There were also requests in submissions for the list of species to include:

- Marine species that spawn in freshwater environments; and
- Freshwater invertebrates, in particular Koura and freshwater mussels, noting that these species are sensitive to the effects of sediment.

Bed disturbance and the protection of wider habitats

Submitters identified a lack of conditions in the draft NES-PF rule to manage river bed disturbance outside of the fish spawning period (excluding the NES-PF rules relating to river crossings). It was noted that forestry activities in the bed of a river, such as cable logging and machinery operating, have potential to adversely affect aquatic ecosystems at any time of the year, not just during fish spawning periods. It was recommended that the NES-PF include general river bed disturbance to address this issue.

Submitters also raised concerns that the crown of a tree being hauled through a river is likely to result in significant disturbance to the bed and vegetation at the margins of rivers, especially when a high number of passes are made each day. It was suggested the rules need to be amended to better manage these effects. Submitters also recommended that additional rules are put in place to protect riparian vegetation, noting that this can provide valuable spawning habitats.

Other comments made in submissions in relation to the fish spawning rule include:

- *Time period covered by the rule* - submitters raised some concern about the use of peak periods and truncated periods in the calculator for species that do not have an identified peak period. Submitters also questioned whether the peak periods are appropriate to apply nationally;

- *Suitably qualified person* - submitters identified a need to define a ‘suitably qualified person’ through the regulation, as there was a concern this could cause some uncertainty in practice; and
- *Clarity of rule* - concern was expressed that the rules only apply to permanently flowing rivers. It was noted that perennial rivers provide valuable habitats to some species, even though they do not flow continuously.

4.11.2 Analysis

Species covered by the rule

As noted above, the species covered by the fish spawning rule were determined based on analysis provided by NIWA on the sensitivity of freshwater fish species to disturbance (Smith, 2014)²⁷ and species threat classification. The species covered by the rule are those species that:

- Have a threat classification of- At Risk, Nationally Endangered, or Nationally Critical; and
- Are sensitive to turbidity and sedimentation during spawning times.

The draft rule, covering 21 species, was considered to be reasonably comprehensive and generally offered protection to a greater number of species than rules in regional plans. However, further analysis has identified that some species that meet the above criteria were omitted and are now recommend for inclusion. These are:

- Banded kokopu;
- Shortjaw kokopu;
- Lower Clutha Galaxias
- Clutha Flathead Galaxias;
- Teviot Flathead Galaxias;
- Pomahaka Galaxias;
- Northern Flathead Galaxias;
- Dune Lakes Galaxias; and
- Southern Flathead Galaxias.

A number of other indeterminate species in the pencil galaxid group are covered by the rules by default as their parent taxa are included in the rule. Including these additional species in the fish spawning rule is not considered necessary at this stage as the Department of Conservation will need to undertake further work before the species can be formally described.

The inclusion of further species, as suggested by some submitters, is not considered necessary as they did not meet both of the two criteria above. For some species, the sensitivity of species to sediment or turbidity appears to have been overstated. For other species, the species may be sensitive to sediment or turbidity but the threat classification of the species was overstated.

It is not considered necessary to include the marine species in fish spawning rule as:

²⁷ NIWA Smith J (2014). *Freshwater Fish Spawning and Migration Periods* Prepared for Ministry for Primary Industries November 2014

- There is a lack of clear evidence showing that the marine species do actually spawn in freshwater; and
- All of the marine species suggested by submitters have a threat classification of ‘Not Threatened’ and therefore do not meet the criteria for inclusion.

It is recognised that Koura and freshwater mussels are sensitive to sediment as identified in submissions. However, there does not seem to be clear evidence suggesting a marked increase in sensitivity during spawning periods. Rather than include these species in the fish spawning rule, it is considered that the NES-PF conditions for earthworks and harvesting will be adequate to manage the effects of forestry on these species year round. Macro invertebrates are also not recommended for inclusion due to the lack of spatial data available on these species, and their relatively high spatial distribution (despite low abundance in some areas).

Overall, the recommended expanded list of species in the fish spawning rule is considered to provide a comprehensive, and nationally consistent approach to manage the effects of forestry activities on these habitats, without imposing unnecessary controls on forestry operations. Councils will have the ability to impose more stringent rules to protect freshwater habitats where this is necessary to meet freshwater objectives and limits under the NPSFM.

Bed disturbance and the protection of wider habitats

It is recognised that river bed disturbance can adversely affect aquatic ecosystems at any time of year, not just during fish spawning periods. If such activities are to be permitted by the NES-PF, there is a need to ensure there are appropriate controls and conditions to ensure that bed disturbance does not result in significant adverse environmental effects. This will be achieved through the setbacks that apply to waterbodies as discussed in section 4.4 above and the requirement for butt suspension over the bed of rivers less than 3m wide and full suspension tree harvesting across rivers with a width of 3m or more.

Submitters raised concerns about the bed disturbance conditions during fish spawning periods. The proposed NES-PF fish spawning rules were intended to permit bed disturbance during spawning times if there will be minimal impact on habitat. The conditions allowed:

- 20 axle movements across a ford each day; and
- Cable hauling of partially suspended logs across streams less than 3m wide.

The 20 axle movement provision would allow one log truck and one utility vehicle to go in and out of the forest each day. This level of impact is unlikely to be significant on most aquatic habitat, and no amendments to this condition are recommended. However, it is recognised that there is potential for a high level of disturbance and damage from allowing partial suspension of logs through certain rivers and streams. It is therefore recommended that full suspension of logs is required where there are critical species with limited habitat available. For other species, requiring consent where full suspension cannot be achieved would be onerous and unnecessary for forestry operators. Partial suspension should continue to be permitted where critical species are not present, subject to conditions.

With respect to submitter concerns regarding the disturbance of riparian vegetation, the RMA definition of bed means the rule applies to ‘annual fullest flow without overtopping its banks’ and therefore includes margins outside of the channel where riparian vegetation grows..

Other comments

An analysis of the other comments made in submissions in relation to the fish spawning rule is provided below:

- *Fish spawning times* - the fish spawning rule is intended to apply additional habitat protection during peak periods. There was a concern whether restrictions during the peak

spawning times would adequately account for divergence in spawning time across New Zealand. In response to these concerns, MPI commissioned Allibone (2016)²⁸ to examine spawning times. Allibone's report (2016) proposes revised time periods, which will allow for larval development where appropriate, and split regional spawning times for certain species. These revised time periods and split time periods have been incorporated into a revised fish spawning indicator tool which makes it clear to foresters and councils which time period to use.

- *Suitably qualified person* - the intention of the 'suitably qualified person' provision in the fish spawning rule is to allow a site specific fish survey to be carried out where there are concerns about the accuracy of the data used in the fish spawning indicator. It is important that it is clear who would be considered a suitably qualified person. It is recommended that this is defined in the regulations as "***suitably competent person*** means a person who has at least 2 years' experience in use of the New Zealand Freshwater Fish Sampling Protocols (in item 11 in Schedule 2) and has completed a specialist course in the identification of New Zealand freshwater fish". This definition focuses on the expertise required to do fish sampling and the ability to distinguish between different fish species. This is considered to be more appropriate than limiting it to someone with tertiary qualifications in fish science as they may not have practical experience in the field.
- *Clarification of rule* – it is recommended that the rule is amended to apply to 'perennial rivers and intermittent' to cover those rivers that provide habitats for aquatic species but do not flow continuously. However, expanding the rule to also cover ephemeral water courses is not considered necessary as these are unlikely to harbour permanent fish populations.

4.11.3 Recommendations

To respond to concerns raised in submissions in relation to fish spawning, the following changes are recommended:

- Amend the table of species and spawning periods to include Banded kōkopu, Shortjaw kōkopu, Lower Clutha Galaxias, Clutha Flathead Galaxias, Teviot Flathead Galaxias, Pomahaka Galaxias, Northern Flathead Galaxias, Dune Lakes Galaxias, and Southern Flathead Galaxias;
- Include a general bed disturbance rule, and conditions which allows some normal forestry operations to continue in low risk environments, subject to conditions;
- Require full suspension of logs where cable hauling is proposed across the habitat of the subset list of non-migratory galaxid during spawning periods;
- Amend the table of species and spawning periods to provide revised spawning times that where appropriate, allow for: larval development; and provide split spawning times or locations;
- Amend the rule to apply to areas where the species does spawn;
- Amend the rule to apply to all perennial waterbodies, rather than just permanently flowing; and
- Define suitably qualified person as follows "***suitably competent person*** means a person who has at least 2 years' experience in use of the New Zealand Freshwater Fish Sampling Protocols (in item 11 in Schedule 2) and has completed a specialist course in the identification of New Zealand freshwater fish".).

²⁸ Allibone (2016), 'National Environmental Standards for Plantation Forestry - Additional Fisheries Advice'.

4.12 WILDING CONIFERS

4.12.1 Summary of Issues Raised

The risk of spread of conifers into neighbouring properties and catchments can have adverse effects on landscapes, biodiversity, existing land uses and catchment hydrology. Avoiding and managing the risk of wilding conifer spread was therefore a key focus when developing the NES-PF. To manage this risk, the draft NES-PS rules uses the Wilding Spread Risk Calculator to identify the risk of wilding spread and determine when consent is required for afforestation.

Submitters raised a number of issues about the wilding conifer rules in the NES-PF and the Wilding Spread Risk Calculator. The main issues raised are summarised below followed by a summary of more specific comments.

Certainty on who can assess the Wilding Spread Risk Calculator scores

Submitters raised concerns that the wilding conifer conditions place a high level of responsibility on the forester to complete the risk calculation which requires a detailed knowledge of environmental and biological science. Submitters considered that this presents a risk that an assessment may be overlooked and that the calculations may not be completed in a robust and impartial manner. There was also a concern that the assessment is subjective and open to interpretation, which could raise implementation and compliance issues. It was suggested that there should be greater certainty to councils and landowners as to who determines the assessment score for wilding risk to ensure implementation issues do not occur.

Longer term management of wilding spread across all properties

Some submitters considered that the draft NES-PF rules and conditions for wilding conifer spread do not adequately address the longer term management of wilding spread across all properties, irrespective of the calculator scores. Submitters were concerned that the absence of longer term management conditions for properties that score 11 or less on the Wilding Spread Risk Calculator would not manage the long-term risk of conifer spread on those properties.

Ability to set more stringent controls

Some submitters considered that there are circumstances where councils should be able to set more stringent controls than the NES-PF to manage the risk of wilding conifer spread. Without this ability for local control, there was a concern that areas of higher wilding spread risk would not receive an adequate level of protection.

Wilding conifer spread is a geographic issue

Some submitters raised concerns that the risk of wilding conifer spread is highly variable across New Zealand and the areas of highest risk relates to specific geographical areas and locations. It was considered that a nationally standard approach to this issue through the NES-PF and the mandatory assessment through the Wilding Spread Risk Calculator may not provide the best solution to manage this issue.

Other comments in submissions in relation to the wilding conifer rules and the Wilding Spread Risk Calculator in the NES-PF include:

- The NES-PF should better align with the New Zealand Wilding Conifer Management Strategy to support the work being undertaken by councils and other stakeholders; and
- Concerns that Wilding Spread Risk Calculator is complex requiring assessment against technical standards and online calculators to determine if an activity is permitted in or not. Submitters raised concerns that it will be too difficult to administer this tool in practice

and may require particular expertise not available to many councils, which could add significant compliance costs.

4.12.2 Analysis

Certainty on who can assess the Calculator scores

It is recognised that a consistent approach to the assessment of wilding spread is critical to the introduction of the Wilding Spread Risk Calculator as a tool to determine risk and appropriate consent status under the NES-PF. The rule will be updated to require the assessment to be undertaken by a suitably qualified person. The definition of suitably qualified person should be as follows “*suitably competent person means a person with: (a) tertiary qualifications in silviculture and forest ecology and at least 2 years’ experience in the field of silviculture; or (b) at least 5 years’ experience in silviculture that includes forest establishment*”. Guidance will also be provided on who is a suitably competent person for the purposes of applying the Wilding Spread Risk Calculator under the NESPF.

In addition, training on the Wilding Spread Risk Calculator is recommended to support the successful implementation of NES-PF. This will ensure the calculator is applied in a consistent manner by a suitably qualified person and that there is confidence in how the wilding conifer assessments are being carried out in practice.

To improve certainty over the longer term, MPI will investigate the feasibility of a tool that geographically maps areas of high wilding pine spread risk. If feasible, this tool could be incorporated into a later iteration of the NES-PF, and replace the wilding calculator.

Longer term management of wilding spread across all properties

It is recognised there is a need to ensure the NES-PF provides appropriate controls to ensure that the risk of wilding spread is managed in the short and long term. The challenge is to ensure that the NES-PF provides appropriate controls for areas that require longer term management, while ensuring that these do not add a layer of unnecessary control for areas with a low level of risk. Guidance will be provided to councils on suitable consent conditions to manage wilding spread where a score of 12 or greater is given when using the wilding calculator. This may include a requirement to prepare a ‘Wilding Management Plan’. This plan should be required to describe the nature of the wilding spread risk, and specify the management practices that will be undertaken to avoid, remedy or mitigate wilding spread over the longer term.

It is also recommended that the NES-PF include requirements for removing wildings that have established in wetlands and significant natural areas for afforestation and replanting. This removal should be required every five years and be limited to the property or properties the forestry operation is undertaken in or adjacent properties under the same ownership or management. This is considered to be a reasonable requirement to manage wilding spread in areas of high natural and ecological value without imposing undue costs on foresters.

Ability to set more stringent controls

Submitters raised concerns that the NES-PF does not provide the ability for councils to be more stringent, to manage the risk of wilding spread. The wilding spread provisions in the NES-PF are intended to provide greater consistency in the management of wilding spread. It is also intended to align with other related work programmes. It is focused on providing greater controls on new plantings while the New Zealand Wilding Conifer Management Strategy and Regional Pest Management Strategies concentrate on the effects of existing plantings and the legacy of historical stands.

Given this context, and the continuing increase in affected areas from wilding spread, it is considered appropriate to manage the spread of wilding conifers in a nationally consistent

manner through the NES-PF. Allowing for greater stringency in regards to wilding management from afforestation would likely result in variable approaches, which would undermine the collaborative work that stakeholders have done to develop this national rule set for managing wilding spread risk.

Wilding conifer spread is a geographic issue

It is recognised that wilding conifer spread is a geographically specific issue, with the risk varying between locations as identified in submissions. However, the area affected by wilding spread has grown progressively over the past fifty years, and is now estimated at approximately 1.7 million hectares. The magnitude of this issue and the benefits of national consistency suggest that it is appropriate for national guidance to ensure best management practices are applied across affected regions and districts, to limit further wilding spread.

While a nationally consistent approach to assess wilding risk should be retained, it is recognised that there is potential to better define geographical areas of higher spread risk (i.e. the area where a score of 12 or greater is likely to occur) within the NES-PF. We recommend investigating the feasibility of developing a tool or map which defines areas of high wilding spread risk nationally, that is sufficiently robust as a basis for regulation. It may be appropriate to include this in the next iteration of the NES-PF at time of review.

Other comments

An analysis of the other comments made in submissions in relation to wilding conifer spread is provided below:

- *Aligning NES-PF provisions with New Zealand Wilding Conifer Management Strategy* - it is recognised that stakeholders have worked collaboratively to reach an agreed vision for addressing wilding conifer management through the Strategy. It is important that a consistent approach to the management of wilding conifers is applied nationally, and that the NES-PF provisions do not override work underway through the New Zealand Wilding Conifer Management Strategy. As such, it is recommended that guidance on the implementation of the NES-PF references the non-regulatory actions under the management strategy as best practice guidance for landowners; and
- *Complicated assessment tools*- while some consider that the Wilding Spread Risk Calculator may be difficult to use, it is an important and useful tool to assess risk and provide appropriate management of wilding conifer spread. To promote better understanding of the calculator and its application, it is recommended that guidelines and training be provided to ensure suitably competent experts undertaking the assessment do so in a consistent manner.

4.12.3 Recommendations

To respond to concerns raised in submissions in relation to wilding conifer, the following changes are recommended:

- Provide support for a feasibility study to define the geographical area of high spread risk. This may result in a tool which could be incorporated into the NES-PF at a later stage;
- Include requirements in the afforestation and replanting regulations for wilding conifer species that have established from afforestation in wetlands and significant natural areas to be removed at least every 5 years;
- Require the Wilding Spread Risk Calculator to be used by a suitably competent person for the purposes of complying with the NES-PF conditions for afforestation and replanting. Define suitably competent person as follows “*suitably competent person means a person with: (a) tertiary qualifications in silviculture and forest ecology and at least 2 years’*

experience in the field of silviculture; or(b) at least 5 years' experience in silviculture that includes forest establishment";

- Provide guidance and training on the Wilding Spread Risk Calculator and its application under the NES-PF; and
- Develop guidance for councils to include consent conditions for Wilding Management Plans.

5 CONCLUSION

The policy objective of the NES-PF is to:

- a) Maintain or improve the environmental outcomes associated with plantation forestry activities nationally; and
- b) Increase efficiency and certainty in the management of plantation forestry activities under the RMA.

The NES-PF has been developed over a number of years with considerable input from a range of stakeholders and technical experts. Consultation on an initial NES-PF was undertaken in 2010 followed by further consultation on a revised version in 2011. Further analysis and engagement led by MPI since 2013 has confirmed an NES as the preferred option to address the problem of unwarranted variation in the management of plantation forestry under the RMA. Plantation forestry is a nationally important industry in New Zealand that warrants a more certain and nationally consistent resource management regime.

In accordance with section 44 of the RMA, formal consultation on the subject matter of the NES-PF was undertaken from 17 June 2015 until 11 August 2015. A total of 18,732 submissions were received on the proposal, of which 356 were unique submissions. During consultation, MPI held 18 public meetings and hui on the proposed NES-PF, and this feedback has been considered alongside the formal submissions.

A range of issues were raised in submissions with the main comments summarised throughout this report. Six general themes have been identified in submissions along with specific comments and recommendations in relation to the eight forestry activities proposed under the NES-PF. Following consultation, MPI has engaged extensively with stakeholders and technical experts to develop issues to respond to the issues raised through consultation. This technical analysis and engagement has informed the analysis of submissions.

This report has outlined a range of recommended amendments to respond to issues raised in submissions and ensure the NES-PF is robust and achieves its policy objective. The main changes recommended to the NES-PF in this report include:

- Revisions to the ESC to reclassify the highest risk Orange Zone with more stringent consent requirements for afforestation, earthworks, mechanical land preparation and harvesting within that land;
- Providing greater flexibility to councils to have more stringent rules to protect locally sensitive and unique environments; and
- Amendments to the rules and conditions for each of the eight forestry activities in the NES-PF to ensure these are more environmentally robust, certain and enforceable.

Overall, it is considered that the recommended amendments to the NES-PF outlined in this report will ensure it delivers good environmental outcomes and achieve greater efficiencies and consistency in the management of forestry activities. This has been confirmed in the revised AEE and cost-benefit-analyse of the revised NES-PF which concluded it will deliver environmental and economic benefits compared to the status quo. The recommended changes to the permitted activity conditions in the NES-PF, combined with the ability to be more stringent to protect locally unique and sensitive environments, will also ensure that the NES-PF will not permit forestry activities with significant adverse environmental effects. This is a critical test for an NES under the RMA and was a key concern in submissions.

However, it is recognised that the NES-PF will need to be supported by a comprehensive implementation plan and a targeted monitoring and evaluation framework to ensure it achieves its objectives. Submissions highlighted the importance of guidance to support the

implementation of the NES-PF until it becomes fully embedded in standard practice. Recommendations for guidance and training are provided throughout this report and a more detailed implementation plan will be developed for the NES-PF following policy decisions.

A monitoring and evaluation plan will also be developed by MPI in collaboration with councils and the forestry sector. This will focus on assessing:

- The effectiveness of the implementation of the NES-PF by councils and the forestry sector during the transition period to full implementation and ongoing delivery; and
- The effectiveness of the NES-PF to achieve its objectives to improve environmental outcomes, and provide greater efficiencies and certainty for the forestry sector.

Results from this monitoring will allow improvements to be made as required both in terms of the support provided to help implement the NES-PF and the provisions of the NES-PF. An initial review of the NES-PF is proposed for three years after it comes into force with subsequent reviews every five years.