A National Environmental Standard for Plantation Forestry

Consultation document
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Ministerial foreword

Hon Dr Nick Smith
Minister for the Environment

Hon Jo Goodhew
Associate Minister for Primary Industries

New Zealanders are practical environmentalists. They want rules that will protect the land, water, plants and animals, and the great lifestyle we in New Zealand enjoy. But they also want the people who work in industries like forestry to be able to get on with their jobs without being consumed by unnecessary bureaucracy.

The proposed National Environmental Standard for Plantation Forestry is about a better way to deliver on those kiwi values. It is part of National's broader agenda of Resource Management Reforms where we believe we can get better environmental outcomes at less cost to industries and ratepayers by standardising rules across New Zealand.

Plantation forestry is New Zealand's third biggest export industry after dairy and meat. It earns over $4.6 billion per year in foreign exchange and employs approximately 18 000 people. It is particularly significant for regional economies in the central North Island, Gisborne, Hawke's Bay, Northland, Nelson, Marlborough and Southland. The costs of managing environmental effects impacts on the international competitiveness of the industry. Uncertainty over environmental rules undermines confidence in an industry that requires investments spanning over 25 years.

The activities of preparing land, planting, thinning, pruning and harvesting forest over 1.7 million hectares of often challenging terrain has environmental effects that have to be managed. There are risks of erosion and sedimentation, particularly from earthworks required for access. These can impact on water quality and fish life. There are also risks to manage from wilding pine spread, flood damage, slash management, erosion of riparian margins and disturbance of cultural sites.

The frustration we hear from the foresters is over the complexity and inconsistency of the current system, as each of our regional and district councils set their own rules. Foresters can appreciate tougher rules in more sensitive environments but often the differences have no clear rationale. There is also concern at the costs and delays in the thousands of consents that are required each year for foresters to go about their business.

We have set our joint officials the 'Bluegreen' goal with this National Environmental Standard of achieving both environmental and economic gains. It is inevitable that in some areas the new rules will be tighter and in others more relaxed but this is not a 'one size fits all' approach. The new sophisticated tools of the Erosion Susceptibility Classification, the Fish Spawning Indicator and the Wilding Tree Risk Calculator ensure that the controls are proportionate to the risks. We are also proposing that councils can set tighter rules in special circumstances where local conditions

require it to achieve important environmental goals like the new standards for freshwater.

This standard is consistent with the purpose of the RMA that requires natural and physical resources to be managed sustainably by achieving a balance between the economic, social and cultural wellbeing of communities while preserving our environment so that future generations of New Zealanders are able to enjoy it in the same way that we have. This standard will streamline resource management processes and ensure that forestry is economically viable while putting appropriate controls in place to manage the effects of forestry activities on the environment.

We want to acknowledge the collaborative work of the forest industry, environmental groups, local government, the science community and our own MPI and MfE officials in putting this new proposal out for consultation. We now seek your comments to review and refine it so New Zealand can take this important step in improving our environmental management in one of our most important industries.

Hon Dr Nick Smith
Minister for the Environment

Hon Jo Goodhew
Associate Minister for Primary Industries

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Executive summary

What's the purpose of this document – we're seeking your views

We're seeking your views on the proposed subject matter of a National Environmental Standard for Plantation Forestry ("the proposal"). This is a proposal to change how plantation forestry activities are managed under the Resource Management Act 1991 (RMA).

We invite you to make a submission by 5 pm, Tuesday, 11 August 2015 (our contact details are at the end of this Executive Summary on page 10). For guidance on how to make a submission, see section 8.

What's being proposed – National Environmental Standard for Plantation Forestry

A National Environmental Standard for Plantation Forestry (NES-PF) would set out the way local authorities must manage activities and resources for forestry activities. If implemented, an NES-PF would replace most existing plantation forestry activity rules in local authority plans. However, councils would retain local decision making in some cases (for example, for matters beyond the scope of an NES-PF or where greater stringency is allowed).

The proposed NES-PF covers the whole plantation forest cycle and includes draft activity-specific rules that provide certainty for local authorities, forest owners and communities nationally. The forestry activities covered are:

- afforestation;
- pruning and thinning-to-waste;
- earthworks;
- river crossing;
- forestry quarrying;
- harvesting;
- mechanical land preparation;
- replanting.

The proposed NES-PF has been developed in the form of a set of draft rules, which are based on established good industry and environmental practice in the forestry sector. The draft rules are also underpinned by a set of environmental risk assessment tools that take account of local environmental conditions. For more information about the proposal and these tools, see sections 1 and 3, and Appendix 3. For a visual overview of the proposed NES-PF see page 10.

National Environmental Standards

A National Environmental Standard (NES) (as provided for under sections 43–44A of the RMA) would establish a technical standard for forestry activities and set out when an activity is permitted and when consent is required. An NES would override rules for plantation forestry in planning documents, except in relation to matters where local authorities are allowed to be more stringent than the NES.

How plantation forests are managed today – region by region, district by district

Plantation forestry delivers significant economic and social benefits to New Zealand. It provides environmental benefits such as supporting water quality, controlling erosion and preserving biodiversity by providing habitats for indigenous plants and animals. The RMA is the main legislation used to manage the effects of plantation forestry. Local government is primarily responsible for giving effect to the requirements of the RMA.

Councils currently set rules to manage the environmental effects of land use activities such as plantation forestry. These rules are developed through community planning processes and establish the conditions under which activities are

permitted or whether consents are required in a region or district. As a result:

- plantation forestry is regulated differently in different regions and districts;
- conditions placed on forestry activities change over the life of a forest as plans change.

Why change is proposed – less variation, more certainty, better outcomes

Councils should take into account local environmental conditions (such as high erosion susceptibility) and community priorities (such as heritage and cultural values) when setting planning rules. Therefore, some variation in regional and district plans across the country is expected and desirable. However, sometimes the reasons for the difference between council approaches is unclear and hard to justify. This "unwarranted variation" creates unnecessary costs and complexity for all forestry sector participants (not just forestry operators) and leads to uncertain environmental outcomes.

The objectives of the change are to:

- **remove unwarranted variation** between councils' planning controls for plantation forestry;
- **improve certainty of RMA processes** and outcomes for plantation forestry stakeholders, while maintaining consistency with the purpose of the RMA;
- **improve certainty about environmental outcomes** from plantation forestry activities for forestry stakeholders, including communities, nationally;
- **contribute to the cost-effectiveness of the resource management system** by providing appropriate and fit-for-purpose planning rules to manage the effects of plantation forestry.

For more information about why change is being proposed, see section 2.

Principles underpinning the draft rules

The draft rules in the NES-PF are based on four principles.

- Where appropriate, activities should be "permitted" (that is, not need a consent), provided conditions are met.
- The level of control associated with each activity should be directly associated with the level of risk of adverse effects on the environment at the location the activity takes place. As the level of risk of adverse effects increases, a requirement for consent is introduced.
- Understanding the risk of adverse effects on the environment around the country should be informed by up-to-date science.
- The NES-PF should provide a nationally consistent approach, but should also be responsive to local environments.

What change will mean – for councils, forest owners, iwi, local communities and environmental non-governmental organisations

District and regional councils will no longer need to develop forestry-specific rules in plans, except for matters where they are able to apply greater stringency. This will reduce the cost of plan development and litigation. Local authorities will need to monitor permitted activity conditions. Initially, councils will also need to remove any duplication or conflict between an NES-PF and existing or proposed plans.

Forest owners' decisions will be better informed, with greater certainty about planning controls over the lifetime of a forest. Large forest owners will benefit from reduced variation across regional boundaries and will not need to be as involved in plan advocacy. Working under a nationally consistent rule set will mean it is easier to provide targeted guidance, support and training to all foresters. All forest owners will need to keep good records and make sure certain information (such as harvest plans) is made available to the council within set timeframes.

Iwi will continue to be involved in planning processes for managing unique local environments and protecting cultural and heritage values. Wāhi tapu that meet the definition of archaeological sites will be treated in a manner similar to that under existing plans.

Local communities will be able to continue to participate in local planning processes for managing unique local environments and protecting cultural and heritage values.

Environmental non-governmental organisations can expect to spend less time and fewer resources on plan advocacy and be assured of consistent environmental outcomes. They may need to spend

more time examining consent processes in areas where consents increase.

Everyone will gain from greater certainty about environmental outcomes.

For more information on what the change will mean for different groups, see section 5.

Why an NES-PF is preferred – NES-PF meets all criteria

We considered 18 possible solutions. Those that would not achieve national consistency or increase certainty, and could not be enforced or monitored effectively, were discounted. Four viable options were identified. Some options were likely to provide some certainty and consistency, but faced greater barriers to effective and efficient implementation. An NES-PF was the option that best met all the assessment criteria. For more information about why the NES-PF is preferred, see section 4.

How this proposal was developed – collaborative effort and evidence based

We worked with the Ministry for the Environment as well as extensively with forest owners, councils, environmental non-governmental organisations and resource management experts to develop this proposal. We also discussed the proposal with iwi and other groups. Feedback received has been incorporated in the proposal wherever practicable. This means the proposed NES-PF reflects good industry and environmental practice and up-to-date science, and takes local environments into account.

How an NES-PF would be implemented – guidance, support and training

If the proposed NES-PF is approved, the regulations will come into force 6 to 12 months after they are publically notified in the New Zealand Gazette. This would allow time for those responsible for the implementation of the rules and conditions, along with forest owners and other stakeholders, to familiarise themselves with the changes.

The Ministry for Primary Industries will be responsible for the implementation phase. We have received a strong message that all affected parties will require access to information, training and practical tools in the run up to implementation (whether of this proposal or a variation of it). Therefore, we will prepare targeted guidance material and information to support councils' transition to any new plan framework and will develop templates for the new plans required by forest owners. This will support the consistent application of the rules and a high level of compliance.

The Ministry for Primary Industries will also have responsibility for the ongoing administration and monitoring of an NES-PF at a national level. We propose reviewing it after five years. Under the RMA, territorial and regional authorities will be responsible for giving effect to an NES-PF and enforcing its requirements.

What happens next – analysis, recommendations and decision-making

We will analyse all submissions before reporting on them to the responsible Ministers with recommendations for the proposed subject matter of an NES-PF.

We will then prepare an evaluation under section 32 of the RMA. The section 32 evaluation must examine the extent to which the objectives of the proposed NES-PF are the most appropriate way to achieve the purpose of the RMA.

The responsible Ministers are likely to receive the report and evaluation by late 2015. If the Ministers' decision is to proceed with an NES-PF, the necessary regulations will be drafted. The regulations would likely be publically notified in the New Zealand Gazette during the first quarter of 2016 and come into effect later that year. For more information about the steps that must be followed to put an NES into place, see section 8.4.

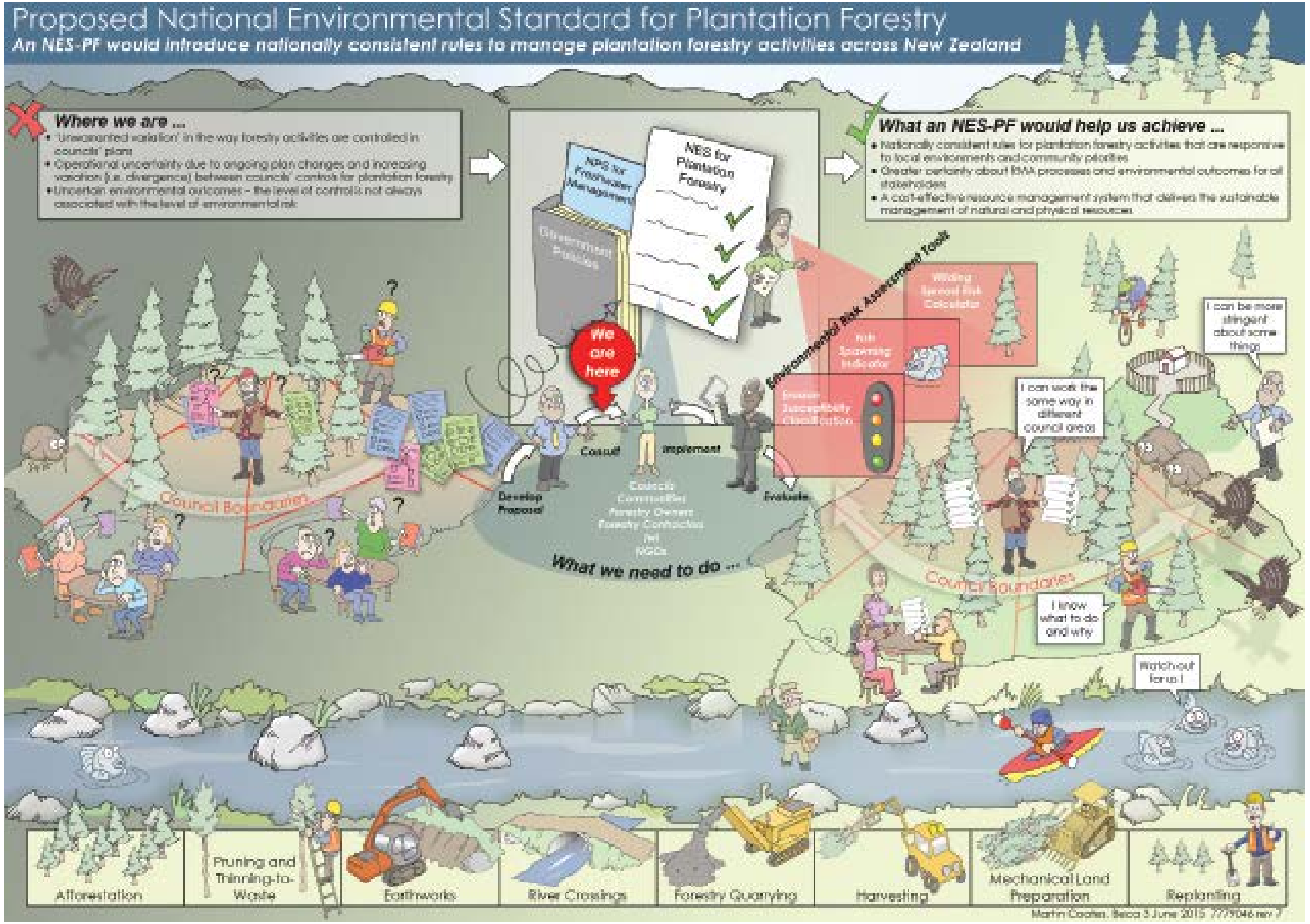
How to submit

Submissions can be made using an online survey at www.mpi.govt.nz/nes-pf. Alternatively, a submission template can be downloaded from the same weblink. Your submission can be emailed to NES-PFConsultation@mpi.govt.nz or posted to:

NES-PF Consultation
Attn: Stuart Miller
Spatial, Forestry and Land Management
Ministry for Primary Industries
PO Box 2526
Wellington 6140

Proposed National Environmental Standard for Plantation Forestry

An NES-PF would introduce nationally consistent rules to manage plantation forestry activities across New Zealand



Martin Cocker, Beca 5 June 2015 7775046-rev 7

1 The proposal

The Government is consulting on the proposed subject matter of a National Environmental Standard for Plantation Forestry ("the proposal"). This is a proposal to change how plantation forestry activities are managed under the Resource Management Act 1991 (RMA).

Questions about aspects of the proposal that we would like submitters to consider are provided throughout the document. These questions are compiled in appendix 1. More information about how to comment on the proposal is in section 8.

The RMA is the primary legislation that controls land use activities. Its purpose is "to promote the sustainable management of [New Zealand's] natural and physical resources".[1]

The implementation of the RMA is primarily the responsibility of local government. However, the RMA also allows central government to provide direction on specific issues through national environmental standards (NESs) and national policy statements (NPSs) under sections 43 and 45 respectively.

Box 1: National environmental standards

A National Environmental Standard (NES) is put in place by regulations made under section 43 of the Resource Management Act 1991.

An NES sets out technical standards, methods, or requirements for activities or outcomes under that Act. It may include conditions for when an activity is permitted and when consent is required.

An NES applies across the whole country but is implemented locally. Local authorities must remove any duplication or conflict with an NES from their planning documents.

An NES replaces existing council plan rules, unless the NES says otherwise (for example, where greater stringency is allowed for a particular matter).

The Government is proposing to introduce an NES for plantation forestry (NES-PF). An NES-PF would provide a higher level of certainty about requirements for managing plantation forestry activities across the country, by setting out nationally consistent rules and establishing when a plantation forestry activity is permitted and when a consent is required. Councils will continue to manage day-to-day issues such as monitoring compliance and processing resource consent applications. An NES-PF would also include provision for councils to retain local decision-making in some cases.

Generally, the draft rules that form the basis of the proposal are variations of those found in existing regional and district plans. In many cases, the draft rules have been based on best practice examples from existing plans. Therefore, the proposed NES-PF is not about introducing rules where none exist, rather it focuses on replacing individual councils' existing plan rules for plantation forestry with a single set of rules that will apply across New Zealand. Equally, the proposed NES-PF is not intended to significantly increase or decrease the level of control across the country, although in some individual cases land owners or councils may see an increase or a decrease in control compared with the current situation.

How these rules apply in any one part of New Zealand is influenced by the level of risk of adverse effects on the environment that needs to be managed. This is determined by a set of environmental risk assessment tools[2] that take account of local environmental conditions.

The proposal for an NES-PF presented in this consultation document has been developed collaboratively by the Ministry for Primary Industries (MPI) with forest owners, councils, environmental non-governmental organisations,

1 Section 5(1) of the RMA.
2 For information on the environmental risk assessment tools, see section 3.5.

RMA experts and other government agencies. MPI has also engaged with several other groups, including iwi, in the development of the proposed rules and, where possible, has included feedback received in the proposal.

This consultation document answers the following questions:

- What is being proposed? (Section 1)
- Why are these changes being proposed? (Section 2)
- What will the proposed NES-PF look like? (Section 3)
- Why is an NES-PF the preferred option? (Section 4)
- What do the proposed changes mean for me? (Section 5)
- How will an NES-PF align with other national policies? (Section 6)
- How will an NES-PF be implemented? (Section 7)
- How can you comment on this proposal? (Section 8)

For definition of terms see the Glossary.

Box 2: Background to the proposal

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 (NES-PF). The proposals were consulted on in 2010 and 2011 (MfE, 2010; MfE 2011). At that time, a cost-benefit analysis was unable to show a positive benefit from an NES. A range of issues identified during analysis and consultation indicated further work was required on the proposed NES.

In February 2013, a consultation document outlining a package of proposals to amend the Resource Management Act 1991 was released. Cabinet deferred work on the proposed NES-PF, in part because of the potential overlap with the wider programme of resource management reform, particularly the work programme relating to fresh water management. At the same time, Cabinet directed the Ministry for Primary Industries to continue to work with industry and stakeholders to explore complementary measures to address forestry issues, building on the work done to date.

MPI has been leading this work since 2013. This consultation document sets out the proposed subject matter of an NES-PF to deliver increased planning certainty and consistency. The main changes that have been made to the proposal since the 2011 consultation document are summarised in section 4.1. The 2010 and 2011 discussion documents are available on the MfE website at the following link - http://www.mfe.govt.nz/land/proposed-nes-plantation-forestry-0

1.1 Plantation forestry in New Zealand

Plantation forestry is an important land use activity and industry in New Zealand and produces significant economic, social and environmental benefits. Production forests cover an estimated 1.75 million hectares (about 7 percent) of New Zealand's land area and contribute about 3 percent of gross domestic product.

Plantation forestry is New Zealand's third largest merchandise export industry after dairy and meat, earning over $4.6 billion in export revenue (MPI, 2015). The forestry sector also contributes at several levels to the economic and social wellbeing of towns and communities throughout New Zealand with around 18 000 people directly employed in forestry, logging and first-stage processing. Forestry creates downstream economic benefits in regional areas as a result of employment in transportation, retailing and public administration. Around the country, plantation forests are also increasingly managed for recreation values, such as mountain biking, hunting and fishing.

For most of the plantation forestry life cycle (26–32 years for *Pinus radiata)* a forest will provide a variety of environmental and ecosystem services, including improvement in water quality, carbon storage, habitat for indigenous species (Yao et al, 2013) and stabilisation of erosion-prone land (Basher, 2013).

Plantation forestry blocks and adjacent areas of indigenous vegetation can provide valuable habitat to rare and endangered indigenous flora and fauna. A variety of indigenous species is present in plantation forests throughout New Zealand that would generally not be present on other types of productive land. This includes kiwi, the New Zealand falcon, native frogs, native bats and giant land snails (Seaton et al, 2009; Pawson, 2005; Brockerhoff et al, 2008).

During the forest growth phase, forests contribute to water quality and aquatic ecosystem values by providing shade and riparian cover. They will also have lower nutrient regimes and deliver less sediment to water than other productive land uses (Fahey & Marden, 2000).

These ecosystem services and habitats will be disrupted during the harvesting phase until a replanted crop establishes a new canopy, which can be up to eight years from the time of replanting. As an illustration, the soil-stabilising capacity of a harvested forest declines as the stumps decay, until the newly planted trees establish root reinforcement in 8–10 years (O'Loughlin, 2005). However, this disruption is often mitigated, for example, by maintaining riparian planting to provide shade over waterbodies and sowing a ground cover crop after harvest to avoid sediment runoff. Where good management practices are observed impacts can be minimised during the "risk window" and benefits to the environment over the length of the forest's life will outweigh the costs of disruption. However, as with all land use activities forestry activities can have negative environmental impacts where they are not managed appropriately.

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

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

1.2 Activities affected by the proposal

The proposed NES-PF will introduce rules to manage the environmental effects of eight core forestry activities. The main adverse environmental effects caused by each activity are summarised in table 1. A more detailed description of the activities and their impacts is in appendix 2.

1.3 How plantation forestry is currently managed under the Resource Management Act 1991

Councils set objectives, policies and rules to manage the environmental effects of land use activities, including plantation forestry. These are developed through community planning processes. Council rules establish the conditions under which forestry activities are permitted or consents are required in a region or district; generally, council rules are not specifically developed for forestry activities. Councils also use non-regulatory approaches to meet their district or region's environmental objectives.[3] For example, farm planning and funding for erosion control through the Hill Country Erosion Fund and Erosion Control Funding Programme and technical advice from councils on a range of resource management issues.

Box 3: Local authorities in New Zealand

Around New Zealand, there are 11 regional councils, 61 territorial authorities (11 city councils and 50 district councils) and six unitary authorities (territorial authorities with regional council responsibilities).

Regional councils are responsible for making decisions to manage the effects of activities on freshwater, land, air and coastal waters. They also manage land use to mitigate soil erosion and avoid natural hazards. They are required to prepare regional policy statements and may prepare regional plans.

Territorial authorities have responsibilities to control the effects of land use and activities on the surface of rivers and lakes, noise and subdivisions. They prepare district plans and issue resource consents for land use activities. District policies and rules are required to be consistent with regional provision.

Because rules are made locally, there are differences in the way plantation forestry is regulated across the country. The RMA was designed to allow decision making to be close to the affected community so local environmental conditions and community priorities could be reflected in plans. Therefore, some degree of variation in regional and district plan provisions across the country is expected and desirable. Examples of why variation occurs, in relation to forestry, include provisions to:

- deal with local biophysical conditions (for example, Overlay 3A in the Gisborne Combined Regional Land and District Plan, which acknowledges high erosion susceptibility in that region);
- account for sensitive receiving environments (for example, the Waikato Regional Council's provisions for forestry in the Coromandel);
- reflect important community values (for example, landscape, historic heritage or cultural values).

In some cases though, the reasons for the difference between council approaches are unclear and difficult to justify. In many cases, the differences are not justified by biophysical conditions. For instance, Pendly and others (2015) found large differences between regional councils for rules applied to activities for earthworks and culverts, but these differences could not be linked to local geomorphology or the views of the local community.

3 This reflects sections 67(2)(b) and 75(2)(b) of the RMA, which state that a regional or district plan may state "the methods, other than rules, for implementing the policies for the [region or district, respectively]".

2 The problem an NES-PF would address

The RMA allows councils to manage the effects of different land uses by setting objectives, policies and rules in regional and district plans. While some variability between council controls is to be expected and is desirable, unwarranted variation in the way forestry activities are controlled has developed over time.

As a result, forestry sector participants face operational uncertainty and uncertain environmental outcomes. This leads to higher than necessary costs for councils, forest owners and operators, local communities and environmental non-governmental organisations.

Box 4: Definition of "unwarranted variation"

For the purposes of this document we have defined unwarranted variation as a level of variation between plans that is not justified by environmental, economic, social or cultural benefits and imposes an unnecessary cost.

2.1 Operational uncertainty

Operational uncertainty occurs because of:

- ongoing changes to planning controls through regular plan reviews;
- increasing variation (that is, divergence) between local authority planning controls over time.

2.1.1 Rule changes and increasing variation lead to uncertainty

During a typical forest life cycle there will be up to three regional or district plan reviews. As a result, the rules that apply to forestry activities are likely to change over the rotation. Ongoing changes introduce uncertainty about future costs and return on investment for forest owners. In practice, forest owners (both corporate forest owners and small-scale growers) cannot be certain of the planning controls and compliance costs that will apply to their forest during its life cycle. This uncertainty is a particular problem for the plantation forestry industry (compared with other sectors) because of its long-term horizons for investment and management.

During the plan review or change process, plan advocacy[4] and relitigation of similar issues occurs across the country for different planning documents. Time spent submitting and responding to submissions on plans, appealing decisions and contracting legal advice leads to significant costs for forest owners and managers, councils and other stakeholders (for example, environmental non-governmental organisations) (NZIER, 2014). This is of particular concern to forest owners because forest land often crosses multiple regional and district boundaries; as a result, forest owners are required to frequently engage in multiple council processes.

2.1.2 Variation between plan rules increases costs

Research for this project and industry feedback show a trend towards increasing variation (that is, divergence) between planning controls for forestry activities since the RMA came into force. These trends suggest the level of variation between plans may continue to increase over time. Although some variation is warranted, there are many examples of inconsistent planning conditions for similar activities in similar environments (see Brown and Pemberton Planning Group, 2010a and 2010b; Pendly et al, 2015). This variation provides little environmental benefit and increases the operational costs incurred by the industry. Feedback from forest owners and some councils suggests that consenting requirements for forestry activities in some regions or districts have increased over time, and a slow but gradual increase in these requirements may continue to lead to further variation (NZIER, 2014).

4 Plan advocacy includes submitting on plan changes, presenting evidence at plan change or review hearings, and lodging appeals with the Environment Court.

Variation between planning rules is particularly felt by owners whose forests span two or more council boundaries. Around the country, there is a high level of cross-district and cross-regional forest ownership. More than 300 forest owners (whose land accounts for more than 80 percent of planted forests) operate forests that span two or more districts, and around 200 of these owners operate forests that span two or more regions. As a result, these owners must operate their forests according to multiple varying plans.

Many forest owners employ or contract ground crews who work in multiple areas. In these cases, variation adds additional complexity, time and expense because ground crews need to understand and comply with different planning provisions. The time taken to understand and comply with different council requirements and to adapt operating practices to comply with these different requirements causes delays, incurs costs and creates a high level of uncertainty.

2.2 Uncertain environmental outcomes

Plantation forests provide a variety of environmental benefits, including erosion control and improved water quality, throughout much of the forestry life cycle. However, activities at particular stages of this life cycle (such as harvesting and earthworks) can have adverse environmental effects. Catchments across New Zealand contain a variety of terrains with different erosion potential and waterways with different values and vulnerabilities to the environmental effects of plantation forestry.

Generally, adverse environmental effects are well managed as a result of good practice within the industry and existing plan rules. For instance, environmental practices among commercial forest owners are generally good because of the voluntary adoption of industry environmental codes of practice (NZIER, 2014).

However, under the existing resource management system, there is variable control of the adverse environmental effects associated with plantation forestry activities. This variability occurs because the control of the risk of adverse environmental effects is not always in proportion to these risks (for example, because of political, operator or professional, and community influences).

As a result, plantation forestry can lead to uncertain environmental outcomes. This is an issue where there is an increased risk of adverse environmental effects (for example, on hill slopes and in waterway systems) that is not acceptable because of the value of the affected area.

The case studies in Boxes 5 and 6 (protecting fish spawning habitats and managing erosion and sedimentation risk) are examples of how rules that are poorly targeted to the risk of adverse local environmental effects can lead to uncertain environmental outcomes.

Box 5: Case study – protecting fish spawning habitats

Councils' techniques to manage in-stream activities when fish are spawning vary considerably around the country. The best environmental outcome will result if fish are not disturbed while they are spawning. This requires avoiding work that disturbs streambeds when fish are spawning. However, only some councils have requirements or information that mean a forester can readily find out which streams to avoid and when. Some councils have no rules directly related to fish spawning, whereas others have rules that constrain activities, but not always at the right time.

For example, the Ministry for Primary Industries is aware of one regional council that has rules for managing trout and inanga spawning habitat. One particular rule requires that if a stream is known to have trout spawning in it, all in-stream forestry activity (including the operation of machinery in the bed of a river or cable logging across the bed of a river) may not occur between 1 May and 30 September without a resource consent. In comparison, another council places controls on forestry activities to protect the spawning of trout and other fish species only in wetland habitats.

Box 6: Case study – managing erosion and sedimentation risk

Forestry as a land use generally has a positive effect on land; it reduces and controls erosion, it moderates flood flows and it provides habitat for a wide variety of species. However, harvesting and the associated earthworks do disturb the ground, which can have an adverse environmental impact; specifically, ground disturbance can cause soil erosion that affects soil productivity and adverse effects on water quality when sediment reaches streams.

Councils use a range of methods to manage erosion and its impacts. Some of these are focused on outcomes only (such as maximum suspended sediment levels) and give little indication of how best to avoid effects. In those instances, the emphasis is on penalising non-compliance once an adverse environmental effect has already occurred. Other rules are prescriptive and allow little room for innovation. This can result in a good forestry operator being unable to use a technique that is best suited to their land and would minimise erosion and any subsequent sedimentation.

One technique that invariably leads to better environmental outcomes is for the forest harvester to develop and follow a harvest plan. All the large companies do this, but small woodlot owners do not always realise the value of having thought through all the environmental risks before starting work. Only a few councils currently require a harvest plan to be prepared.

2.3 Objectives of the proposal

The objectives of the proposal are to:

- remove unwarranted variation between councils' planning controls for plantation forestry;
- improve certainty of RMA processes and outcomes for plantation forestry stakeholders, while maintaining consistency with the purpose of the RMA;
- improve certainty about environmental outcomes from plantation forestry activities for forestry stakeholders, including communities, nationally;
- contribute to the cost-effectiveness of the resource management system by providing appropriate and fit-for-purpose planning rules to manage the effects of plantation forestry.

Q

1. **Do you think section 2.1 and 2.2 accurately describe the problem facing plantation forestry?**

Please provide comments to support your views.

3 National Environmental Standard for Plantation Forestry

The proposed NES-PF would introduce technical standards for plantation forestry activities across New Zealand. If implemented, an NES-PF would apply to plantation forestry as defined in Box 7. It is being consulted on in the form of nationally consistent draft rules for each of the eight core plantation forestry activities (see Box 8).

Box 7: Proposed definition of "plantation forestry"

We are proposing the following definition of plantation forestry:

(a) at least 1 hectare of forest cover of forest species that has been planted and has been, or will be, harvested;

(b) including all associated internal infrastructure; but

(c) not including:

- (i) a shelter belt of forest species, where the tree crown cover has, or is likely to have, an average width of less than 30 metres;
- (ii) forest species in urban areas;
- (iii) nurseries and seed orchards;
- (iv) fruit and nut crops;
- (v) long-term ecological restoration planting of forest species;
- (vi) willows and poplars space planted for soil conservation purposes.

Box 8: Core forestry activities

Core forestry activities are:

- mechanical land preparation;
- earthworks;
- afforestation;
- pruning and thinning-to-waste
- harvesting;
- forestry quarrying;
- river crossings;
- replanting.

An NES-PF will replace existing provisions in council plans across New Zealand for the activities listed in Box 8 (and explained in Table 1 on p 14), although in certain circumstances councils will be able to retain some flexibility to apply more stringent rules (see section 3.4). An NES-PF would also contain a set of general conditions[5] that all plantation forestry activities must also meet.

Generally, the rules in the proposed NES-PF are variations of those found in existing regional and district plans. This means the NES-PF is not increasing regulation, but it is replacing existing regulation to create economic and environmental benefits through greater certainty and consistency.

In addition, some matters are out of scope for the proposed NES-PF, which means that, where these matters arise, existing rules remain in effect and local authorities retain the ability to manage them as they consider appropriate. These matters are summarised in Table 2. A more detailed explanation of these matters and the rationale behind them is in appendix 3.

5 Relating to archaeological sites, fuel, vegetation clearance and disturbance, dust, noise, nesting times, spatial bundling and fish spawning.

Table 2: Matters out of scope for the NES-PF

Activities associated with or undertaken in plantation forests
Agrichemical use
Burning
Gravel extraction from the beds of rivers
Milling activities and processing of timber
Use and development of land that has the potential to be affected by contaminants in soil (which is covered by the NES for Contaminated Land)
Effects that may arise from forestry activities
Water yield
Nuisance issues
Infrastructure
Risks that the presence of forests may exacerbate
Fire risk
Hazard zones

MPI has taken a considered and collaborative approach to develop the proposal in the form of draft rules that are consistent across the country and reflect good practice and up-to-date science, which takes account of local environmental factors. In doing so, MPI has worked with MfE and a stakeholder working group (see Box 9) to develop the draft rules to ensure they are fit for purpose.

For a visual overview of the proposed NES-PF see page 10.

Box 9: Stakeholder working group

The Ministry for Primary Industries worked with the Ministry for the Environment and a stakeholder working group to develop the draft rules. Members of the stakeholder working group were selected because of their technical expertise and experience in forestry operations, RMA processes and environmental management. The group was made up of members from:

- Bay of Plenty Regional Council;
- Ernslaw One Limited;
- Fish and Game New Zealand;
- Gisborne District Council;
- Hancock Timber Resource Group;
- New Zealand Forest Owners Association;
- PF Olsen Limited;
- Royal Forest and Bird Protection Society of New Zealand;
- Tasman District Council;
- Timberlands Limited.

3.1 Developing draft rules for each activity

The working group approached the task of developing the draft rules that form the basis of the proposed NES-PF with four underlying principles in mind:

- Where possible, activities should be permitted (that is, not need a resource consent) provided robust permitted activity conditions are met.

Table 3: Factors the working group considered and agreed for each activity

Outcome	What are we seeking to achieve (for example, to develop nationally consistent harvesting controls that manage the environmental risks in a manner that is in line with good forestry management practice)?
Rationale	A clear description of why the specific rules and conditions are proposed. A clear rationale is important because it illustrates why the control is needed and how it will address the identified risks.
Effects	What are the adverse environmental effects associated with the activity? For example, the primary adverse environmental effect associated with earthworks is sediment reaching waterways.
Jurisdiction	Does the activity sit within district or regional council jurisdiction? For instance, regional councils are responsible for the control of discharges of contaminants, such as sediment, into water, and district councils are responsible for controlling the use and development of land.
Activity status	Whether an activity or part of an activity is permitted or a consent is required. (See section 3.3)
Conditions	The specific rules that apply to each activity. The approach is to specify activities as permitted, where possible, but with conditions to mitigate the environmental risks. For example, permitted activity conditions for harvesting require a harvest management plan to be prepared, along with other performance conditions.
Stringency	The areas where national consistency is not appropriate and where councils have flexibility to set more stringent rules than in draft rules. (See page 23.)
Implementation	Specific guidance on how the rules can be implemented in terms of both operator compliance and how councils can monitor and determine compliance with the rules.

- As the risk of adverse environmental effects at the location of the activity increases, the requirement for consent becomes more likely and conditions become more stringent.
- The proposed rules and the threshold at which consent is required should be based on up-to-date science.
- The rules should provide a consistent approach nationally, but should be responsive to local environmental conditions.

The working group considered each of the eight forestry activities separately. In doing so, the following factors were considered and agreed for each of the eight activities. Where appropriate, experts outside the working group were consulted to ensure the draft rules are consistent with best practice principles.

The draft rules in appendix 3 are indicative and intended to provide necessary detail to inform stakeholders of the policy intention. They are not draft regulations.

3.2 Robust permitted activity conditions

The focus on permitted activities means the working group has proposed robust permitted activity conditions to ensure effective controls are in place. This includes some controls that have not previously been commonplace, including:

- conditions to manage "slash" resulting from pruning and thinning-to-waste of trees to avoid woody debris from creating an erosion risk or damaging the bed of rivers;
- earthworks conditions that allow minor roading modifications to improve the safety of forestry ground crews;
- conditions to protect the nesting sites of endangered birds during peak breeding periods;
- targeted conditions to reduce the spread of wilding trees[6] onto surrounding land.

Foresters will also be required to prepare planning documents as part of the permitted activity conditions for harvesting, earthworks and forestry

6 Wilding trees are self-sown trees usually from wind-blown seed.

Q

2. **Do you consider that the conditions for permitted activities will manage the adverse environmental effects of plantation forestry?**

Please provide comments to support your views.

3. **Are the conditions for permitted activities clear and enforceable (see appendix 3)? Can you suggest ways of making the rules clearer and more enforceable?**

Please provide comments to support your views.

quarrying. These plans will need to identify environmental risks and outline how operations will be undertaken to avoid or mitigate these risks. This approach will prompt forest owners to think about the impacts of their activities before they start operations.

The permitted activity conditions for each activity are included in the detailed draft rules (see appendix 3).

3.3 Increasing consent requirements as risk increases

As the risk of adverse environmental effects associated with an activity increases, or if permitted activity conditions cannot be met, the requirement for consent and the activity status change under the proposed NES-PF. The different activity statuses are referred to in the draft rules and are described in Box 10. Section 43A(3) of the RMA states that where an activity has a significant adverse effect on the environment an NES may not allow this activity to occur without resource consent.

Box 10: Different activity statuses under the proposed NES-PF as the level of risk increases

Permitted – the activity does not require a resource consent, provided standards, terms or conditions specified in the proposed National Environmental Standard for Plantation Forestry are complied with. Activities classified as lower risk of adverse environmental effects will be permitted and owners will not require consent if they can meet specific conditions.

The following "activity statuses" will apply to activities classed as posing a higher risk of adverse environmental effects, including where forest owners cannot meet permitted activity conditions.

Controlled – a resource consent is required. The consenting authority must grant the consent, unless it has insufficient information, and can impose conditions on the consent only on matters over which a National Environmental Standard has reserved control.

Restricted discretionary – a resource consent is required. The consent authority may decline the consent, or grant it subject to conditions, but only on matters to which the National Environmental Standard has restricted its discretion.

Discretionary – a resource consent is required. The consent authority may decline the consent, or grant it with or without conditions.

3.4 Applying greater stringency

While one of the objectives of an NES-PF is to achieve greater national consistency, it is acknowledged that, in some circumstances, local authorities should retain their ability to manage activities because of unique environmental, social or cultural factors. Table 4 summarises the matters where the NES-PF would give councils the ability to apply more stringent rules than those in the proposed NES-PF. A more detailed version of this table is in appendix 3. Where these matters apply and the matter has been identified through a regional or district plan (or the New Zealand Coastal Policy Statement), local authorities would be able to either:

- impose more stringent rules in plans or more stringent conditions on resource consents;

Table 4: Summary of matters where councils may apply more stringent rules

Matter in relation to which councils may set more stringent rules	Rationale for allowing councils to be more stringent
Coastal marine area	In many locations, the coastal marine area has important values, such as landscape and habitat values, that are considered more appropriately managed at a local or regional level. Having this issue in the "ability to be more stringent" list also provides for alignment with the New Zealand Coastal Policy Statement.
Geothermal and karst protection areas	Some regions (for example, Waikato) have delicate geothermal areas that need careful land management to prevent these areas from being damaged or destroyed. Because these areas need to be carefully managed, local councils are best placed to set rules that cover the local situation. Forestry operations may also affect or be affected by karst land forms, and local councils need to manage these issues.
Places and areas of known cultural or heritage value	Cultural or historic heritage matters often reflect local values, so are not suited to be managed nationally.
Significant natural areas and outstanding natural features and landscapes	Areas of mapped significant indigenous vegetation, significant habitats of indigenous fauna, and outstanding natural features and landscapes are more appropriately managed at a local or regional level.
Shallow aquifers	Some councils have rules to manage the risks to the groundwater systems, in particular shallow aquifers, in their region from quarrying activities. Given the complexity of groundwater systems, it is most appropriate for councils to continue to manage this issue.
Where required to meet the objectives of the National Policy Statement for Freshwater Management	Councils may apply more stringency where an NES-PF is not sufficient to meet the objectives and corresponding limits set under the National Policy Statement for Freshwater Management (see section 6.1).

- specify (in relation to permitted activities) conditions in their plans that relate to effects not dealt with in the proposed standard.

Some existing legislation also allows for rules that are more stringent than an NES to be included in a regional or district plan. This legislation includes the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010, Ngati Tuwharetoa, Raukawa, and Te Arawa River Iwi Waikato River Act 2010 and Nga Wai o Maniapoto (Waipa River) Act 2012, which require that any rules included in a regional or district plan for the purpose of giving effect to the vision and strategy of the Waikato River prevail over an NES.

Q

4. Are the matters where local authorities can retain local decision-making appropriate (summarised in Table 2 and Table 4 and provided in detail in appendix 3)?

Please provide comments to support your views.

3.5 Applying the rules

Important to the proposed NES-PF are three environmental risk assessment tools:

- Erosion Susceptibility Classification (ESC);
- Fish Spawning Indicator;
- Wilding Spread Risk Calculator.

These tools, based on local environmental and biophysical information, determine the level of risk that needs to be managed and, in turn, the level of control (activity status) over an activity. Using this information means an NES-PF, although national in scope, is responsive to local environmental factors. Additionally, the tools will be updated as new information becomes available. This will improve the accuracy of the tools over time.

3.5.1 Environmental risk assessment tool 1 – Erosion Susceptibility Classification

The ESC is used to classify the risk of erosion on land, based on factors such as rock and soil type and slope. Using "potential erosion severity" data, as published in the regional land use capability (LUC) surveys, the ESC classifies land into four categories of erosion susceptibility. The categories are colour coded according to the level of risk, low (green), moderate (yellow), high (orange) and very high (red), as shown in Table 5.

Typically, green and yellow classified land is considered low risk and in all cases a forestry activity will be permitted, provided the accompanying conditions are fully met. In contrast, forestry activities will be more tightly controlled in red zone land, and activities in this zone are more likely to require consent. For instance, harvesting is permitted in green, yellow and orange zones, but requires a consent in the red zone. While there is a relatively high risk of erosion in the orange zone, this risk can be addressed with comprehensive permitted activity conditions, so resource consent is not necessary for harvesting, but remains a requirement for earthworks.

Landowners need to understand the ESC that applies to their land, as it will determine whether resource consent is required to undertake a specific activity. Figure 1 shows how the ESC is applied to land across New Zealand and provides an overview of the activity status for each plantation forestry activity by ESC zone.

An interactive map that allows landowners to easily identify the ESC applied to their land and a full report detailing how the ESC works is available on MPI's website at www.mpi.govt.nz/nes-pf.

Box 11: Erosion Susceptibility Classification and assumptions of pastoral cover

The Erosion Susceptibility Classification (ESC) is based on the erosion risk of land under pastoral cover, so may not accurately reflect the risk of erosion for land covered by plantation forestry, which is generally lower than that of pasture over the life cycle of the forest. However, the ESC needs to account for the full plantation forestry life cycle, and analysis shows that the post-harvest period, where plantation forestry erosion risk is highest, has a similar erosion risk as pasture. For that reason, the Ministry for Primary Industries has continued to use the existing ESC under pastoral cover.

Table 5: Erosion Susceptibility Classification of plantation forestry land in New Zealand

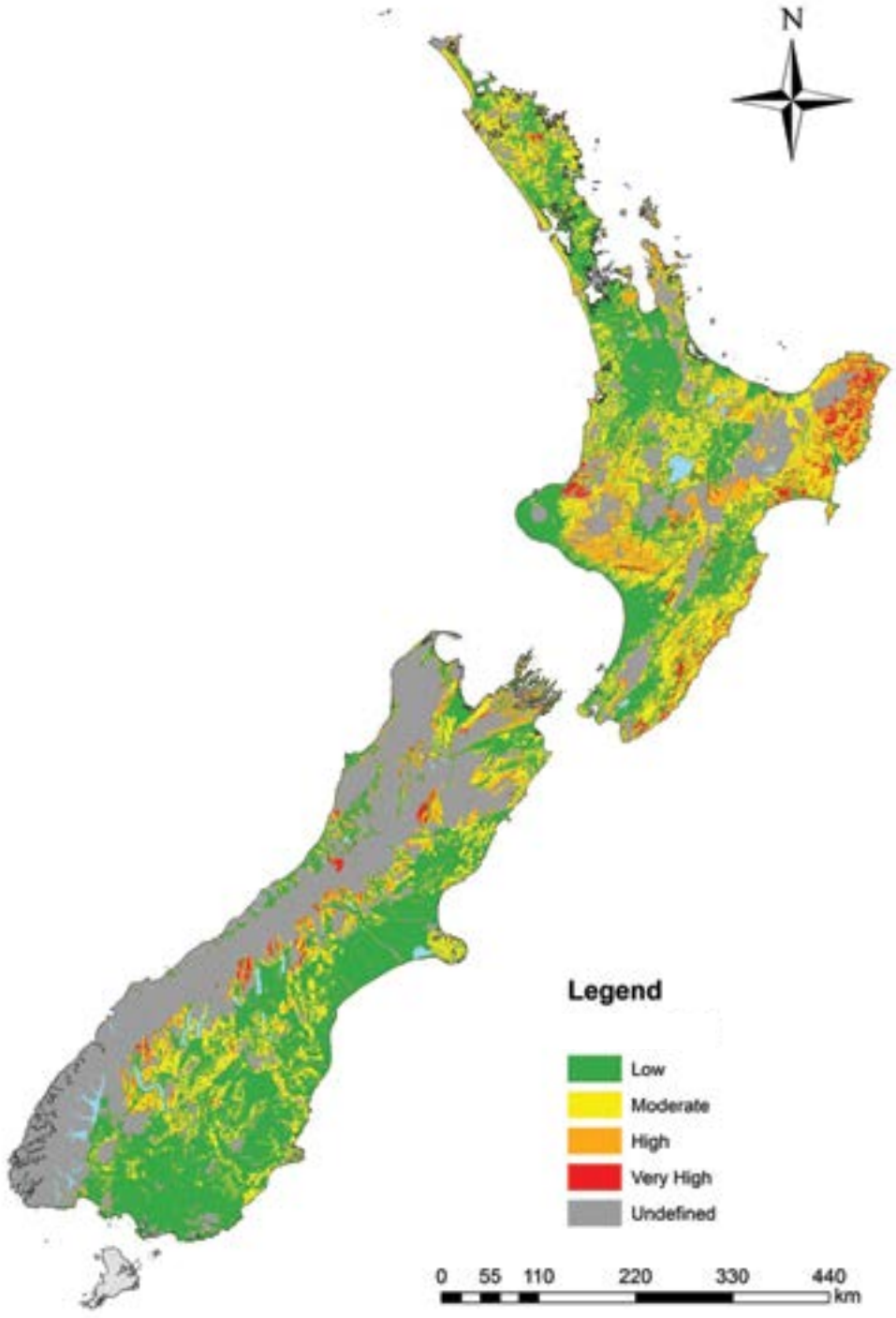
	Low	Moderate	High	Very high	Total exotic forest (gross area)
Area (ha)	782 000	738 000	365 000	108 000	2 020 000*
Percentage of total plantation forest land	39%	37%	18%	6%	100%

* Landcare Research used the Land Cover Database version 4 to inform this ESC analysis. This looks at gross forest area, so the figure for total forest area differs from the net stocked area of 1.74 million hectares calculated in the National Exotic Forest Directory and used through this document.

Figure 1: Application of the Erosion Susceptibility Classification

	Green	Yellow	Orange	Red
Mechanical Land Preparation	P	P	P	P
Afforestation	P	P	P	RD
Earthworks	P	P	P (<25°), RD (>25°)	RD
Forestry Quarrying	P	P	P	P, RD (earthflow country)
River Crossings	P	P	P	P
Pruning and Thinning to Waste	P	P	P	P
Harvesting	P	P	P	C (not 8e), RD (8e)
Replanting	P	P	P	P

Key: P= Permitted, C = Controlled, RD = Restricted Discretionary



Note: Undefined areas are conservation land and urban areas.
Source: Landcare Research, 2015

Box 12: Erosion Susceptibility Classification revised and updated

Previous NES-PF consultation raised concerns about the accuracy and flexibility of the Erosion Susceptibility Classification (ESC). Given its important role in determining the level of erosion risk that needs to be managed, it is vital the ESC is accurate and reliable. The issues raised with the ESC previously were as follows:

- **Scale:** The maps on which the land use capability (LUC) units were based are at a 1 : 63 600 or 1 : 50 000 scale, which provides broad-scale mapping. This results in land being classified with a broad potential erosion risk, when in practice the land may comprise discrete LUC units with differing attributes and potential erosion risk.
- **Misclassification:** Several LUC units have been identified as misclassified. This has arisen where potential erosion has been wrongly assessed for individual LUC units (i.e. they are classified conservatively), where only a single erosion severity was recorded for multiple erosion types (especially where mass movement was a sub-dominant erosion type), and where dual LUC units were recorded on a polygon and the ESC class was derived from the sub-dominant LUC unit. This could lead to overly stringent rules on some parcels of land with little commensurate environmental benefit.
- **No process to update or refine ESC:** The ESC lacks an agreed process for reassessing, refining or creating new LUC units and assigning potential erosion classifications to these.

To address these outstanding issues and ensure the ESC is fit for purpose, MPI contracted Landcare Research to update the ESC. This has resulted in some changes:

- All land classifications were reviewed. Where there was a clear misclassification, land was correctly reclassified. This led to:
  a. 3.6% of land in the Green Zone being re-classified;
  b. 22.6% of Yellow Zone land has been reclassified as Green Zone land;
  c. 40.8% of land in the Orange Zone being reclassified as Yellow Zone land;
  d. 15.6% of land in the Red Zone being reclassified as either Orange or Yellow Zone land.
- A formal process will be implemented to enable landowners, forest companies or councils to have an existing ESC classification reassessed, if there are concerns about its accuracy. This process will allow land that is reclassified to be mapped at a finer scale to more accurately reflect individual erosion features on the land. Further information about the process and the data and information requirements that must be satisfied to have an ESC unit reclassified can be found on MPI's website at http://www.mpi.govt.nz/nes-pf.

3.5.2 Environmental risk assessment tool 2 – Fish Spawning Indicator

If not carefully managed, some forestry activities can 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 NES-PF process has provided an opportunity to introduce a more consistent approach to managing the effects of forestry activities on these important habitats, by assessing the degree of risk from forestry activities and applying standard rules where risks are present. Because fish spawning is seasonal, it has also provided an opportunity to implement targeted risk controls to ensure any restrictions on activities occur only when they are absolutely needed.

MPI contracted the National Institute of Water and Atmospheric Research (NIWA) to produce a report outlining fish spawning periods and sensitivity to forestry disturbance (the fish spawning calendar). MPI supplemented this with additional data sources that had previously been prepared by NIWA (the New Zealand Freshwater Fish Database and the River Environment Classification) to develop the Fish Spawning Indicator.

The Fish Spawning Indicator will inform the proposed NES-PF rules and enable councils and landowners to manage the risk of habitat disturbance during peak fish spawning periods. The NES-PF fish spawning rules applies to 21 fish species and uses a risk based approach. When there is a high risk of habitat disturbance (during peak spawning periods where species have a high likelihood of being present) greater control will be required for activities which are likely to disturb the bed of a river, and resource consent may be required. Peak spawning periods for the 21 species to which this rule applies are generally restricted to two periods (May-June and September- October).

MPI has developed an online mapping tool that display the fish spawning indicator. The online tool will enable landowners to easily identify what species of fish are present in the streams or rivers on their property, and the specific period where in-stream activities will require a resource consent because fish are spawning. Individual forest owners and managers can decide whether it is easier to schedule work outside this window or apply for a resource consent.

The Fish Spawning Indicator is available on MPI's website at http://www.mpi.govt.nz/nes-pf.

3.5.3 Environmental risk assessment tool 3 – Wilding Spread Risk Calculator

In the right place, conifers provide a range of environmental benefits and are a valuable economic resource for communities. However, where there has been naturally occurring or unintended spread to neighbouring properties and catchments, there is potential for conifers to affect:

- landscape values;
- conservation and biodiversity values;
- existing land uses;
- future land use options;
- catchment hydrology.

Natural spread is most likely to occur in higher altitude conditions and on exposed sites with low (or no) grazing on surrounding and downwind land. Wilding conifer spread is currently managed through a combination of district council plans (for example, rules to manage species selection, the siting of forests and the mitigation of spread) and regional council pest management strategies.

When developing the proposed rules for afforestation, avoiding and/or mitigating seed-spread from new plantings was a priority. The draft rules use an existing management tool, the Wilding Spread Risk Calculator (DSS 1), to identify the risks of wilding spread and inform when consent is required.

The Wilding Spread Risk Calculator is available on MPI's website at http://www.mpi.govt.nz/nes-pf.

The draft rules require councils and land owners to apply the calculator to a site when considering afforestation. This will require the landowner to consider:

- the type of species being planted – some species can spread vigorously, so the risk of wilding spread is greater with these species;
- how palatable the species is to grazing animals – if animals are likely to graze on the seedlings, then the risk of spread is lower;
- where the new trees are located – sites that are sheltered from the prevailing wind are less likely to have their seeds blown long distances and their risk of spread would be low;
- downwind land use – if the species is planted on sites exposed to strong prevailing winds, but it is a species that is palatable to grazing animals and such animals are grazing downwind, then the risk can be mitigated;
- whether there is existing forests downwind from the location of the proposed new trees – if so, it is likely any wilding seedlings would have strong competition to survive and the risk of spread would be mitigated.

To assist landowners and councils to apply the calculator, best practice guidelines are being developed. When complete, these will be available on MPI's website at www.mpi.govt.nz/nes-pf.

The calculator is an evolving tool, and updated versions would be incorporated into an NES-PF as new research becomes available.

Q

5. **Will the environmental risk assessment tools (the Erosion Susceptibility Classification, the Wilding Spread Risk Calculator, and the Fish Spawning Indicator) appropriately manage environmental effects as intended?**

Please provide comments to support your views.

6. **Do you have any comments about any particular activity or draft rule (see appendix 3)?**

Please include reference to the rule you are referring to and provide a comment to support your views.

4 Why an NES-PF is the preferred option

4.1 Evaluating options

MPI explored a number of options to address the problem of unwarranted variation leading to operational uncertainty and uncertain environmental outcomes. To do this, MPI gathered feedback from various sources, including submissions from previous consultations and advice from forestry stakeholders, the stakeholder working group and RMA experts. From this feedback, 18 potential solutions (12 of which were non-regulatory) were identified to address the policy problem.

4.1.1 Assessment criteria

To assess options to address the policy problem, "first order" assessment criteria were developed to reflect the policy objectives in section 2.3. "Second order" assessment criteria were developed to assess critical aspects of implementation and efficiency. (See Box 13)

Box 13: First and second order assessment criteria

First order assessment criteria

- Delivers consistency:
  - Does the option remove unwarranted variation between council planning controls for plantation forestry?
- Improves certainty:
  - Does the option improve the certainty of Resource Management Act 1991 (RMA) processes and outcomes for plantation forestry stakeholders, while maintaining the underlying purpose of the RMA?
  - Does the option improve certainty for forestry stakeholders and communities nationally about environmental outcomes from plantation forestry activities?

Second order assessment criteria

- Ease and effectiveness of implementation:
  - Are there no significant barriers or complexities to implementation?
  - Is it possible to monitor compliance with the option, and can the option be enforced?
- Efficiency:
  - Are the benefits of the option expected to exceed the costs?
- Ability to monitor the effects:
  - Is it easy to monitor the impact of the policy?

4.1.2 Assessment of possible solutions

The status quo (that is, the option of "doing nothing") and the 18 potential solutions were individually assessed against the assessment criteria. This revealed that:

- four viable policy options met or partially met the first order criteria, so were analysed in more detail against the first and second order assessment criteria;
- the remaining 14 possible solutions were each identified as unable to be a standalone solution to the policy problem, because they did not meet the first order criteria.

Appendix 5 summarises this assessment of the potential solutions.

4.1.3 Detailed assessment of four options

A summary of the detailed analysis of the four options that met or partially met the first order criteria is below and in Table 6.

National policy statement

National policy statements (NPSs) state objectives and policies for matters of national significance that councils are required to give effect to in their planning documents and have particular regard to in their consent decision-making (see sections 45–55 of the RMA). An NPS for plantation forestry would state policies and objectives that councils would use to guide development of local rules or other provisions to manage the effects of plantation forestry.

As a regulatory tool, an NPS would establish objectives and policies. However, local interpretation and implementation would lead to different approaches across councils. In this regard an NPS would be only partially effective at achieving consistency and certainty. Changes would be made to plans to give effect to an NPS over an extended period through the plan review process, thus implementation would be lengthy and costly. Some inconsistency and uncertainty would likely persist as a result of ongoing plan reviews.

National environmental standard

An NES (as provided for under sections 43–44A of the RMA) would establish a technical standard for forestry activities and set out when an activity is permitted and when consent is required. An NES would override planning documents, except in relation to matters where greater stringency is allowed.

An NES is the only option that meets all the assessment criteria. As a relatively prescriptive instrument, it can ensure consistent planning rules across district and regional boundaries and certainty about the planning environment for forestry stakeholders over time. However, some uncertainty may still exist in relation to matters that are out of scope or where councils can be more stringent than the proposed NES. An NES would come into force on the date of commencement stipulated in the regulation, and every council must ensure its plans include reference to, and do not conflict with, an NES. Reviews of an NES would be nationally co-ordinated and consulted on.

While an NES would still need to be revised periodically to take account of new information and changes in pressure on natural resources, the issues associated with plan divergence under the status quo would not occur.

National planning template

A national planning template was proposed as part of the Government's resource management reform proposal in 2013. However, no decisions have been made about the development of such a template. Considerable work would still be required to develop, approve and implement this as a policy tool. This presents a barrier to timely implementation of this tool to address the defined policy problem. These considerations make it more expedient to rule out this option in the short term.

Ministerially directed plan changes

The Minister for the Environment may direct a regional council or territorial authority to prepare a plan change (under section 25A of the RMA). The plan change needs to relate to council functions under sections 30 and 31 of the RMA. If the intention were to use this power to bring consistency to forestry operations, the Minister would need to direct all district and regional plans to be amended.

This option would address consistency and certainty issues, if sufficiently comprehensive guidance were given to all relevant authorities, but the implementation process could cause problems. The amendment would happen plan by plan at the local authority level through the plan review

process in Schedule 1 of the RMA. Differing drafting and interpretation between councils might result in inconsistencies. Subsequent consultation, hearings and appeals might result in conditions that vary significantly from the original ministerial direction. Furthermore, as a tool for blanket change across multiple jurisdictions, it lacks efficiency and cost-effectiveness to address the problem.

Ministerially directed plan changes are better suited to the purpose of making small corrections to individual plans.

4.2 Preferred option – NES-PF with complementary measures

Based on this assessment, an NES for plantation forestry was identified as the preferred option to address the problem of unwarranted variation leading to operational uncertainty and uncertain environmental outcomes.

Several non-regulatory potential solutions were also identified to support the implementation and enhance the outcomes of an NES-PF. In particular, planning guidance and additional staff training for councils and forestry operators would also be provided to support the proposed standard to achieve its objectives.

Q

7. Is the NES–PF the best option to meet the assessment criteria (in Box 13)?

Please provide comments to support your views.

4.3 Cost-benefit analysis – NES-PF compared with the status quo

The New Zealand Institute for Economic Research (NZIER) previously prepared two reports for MfE on the costs and benefits of an NES-PF (NZIER 2011, 2012).[7] Both of these showed the costs outweighed the benefits. At the time, several issues and uncertainties were raised with the analysis, including about:

- some of the assumptions used (for example, the calculation of environmental benefits arising from increased setback provisions);
- what the status quo was assumed to look like (for example, there was little expectation of ongoing plan changes and advocacy costs for a range of stakeholders).

Since 2011, there have been changes that would alter the findings of the previous cost-benefit analysis reports:

- New information has been used to assess the impact of the requirements to set back planting from streams and rivers on the loss of productive land. This has shown that the impact is lower than previously estimated.
- The Climate Change Response Act 2002 has been amended. This change allows forest owners to meet the planting setback requirements without incurring a deforestation liability under the New Zealand Emissions Trading Scheme.
- The proposed rules, including changes to the consenting requirements for different forestry activities and the use of environmental risk assessment tools to better target the level of control have been further developed (as discussed in section 3.5).

As a result, NZIER was contracted to prepare an updated cost-benefit analysis in 2014 (NZIER, 2014). Environmental impacts were explicitly left out of scope of NZIER's report because of problems accessing data and the measurement of environmental impacts. Therefore, MPI also commissioned Scion Ltd to carry out supplementary analysis of the expected environmental effects (Scion Ltd, 2015). These two reports provide a picture of the expected costs and benefits of the proposal, relative to the status quo, over a 30-year period.

7 MfE also contracted Covec to prepare a preliminary cost-benefit assessment in 2010 (Covec Ltd and Catalyst R&D, 2010).

Table 6: Comparison of options analysed against first and second order criteria

Option	First order criteria		Second order criteria		
	Delivers consistency	Improves certainty	Implementation	Efficiency	Monitor impact
Ministerially directed plan change	**Yes**	**Yes**	**No**	**No**	**Yes**
	Would achieve some consistency across councils, but differing council interpretations and drafting might lead to some variation between plans	Has potential to improve operational certainty and certainty of environmental outcomes, depending on how direct plan changes are implemented.	Implementation via Schedule 1 process of the RMA with each individual council might be onerous.	Not likely to be an efficient option to direct and implement the plan changes required to address the problem.	Monitoring how plan changes are implemented is possible.
National policy statement (NPS)	**Partial**	**Partial**	**Partial**	**No**	**Partial**
	National objectives and policies likely to create a more consistent approach. Cannot exclude ongoing unwarranted variation.	Certainty might increase. Different local interpretations would mean ongoing uncertainty about planning and environmental outcomes. Ongoing plan reviews would maintain uncertainty and relitigation of issues.	NPSs have long lead times to allow councils to incorporate policies into plans through review process. Would require separate implementation approach in each council.	Development of policy statement by central government plus development of plan rules within each council likely to result in significant implementation costs.	Monitoring the impacts of an NPS against the status quo in each council area would be onerous.

Option	First order criteria		Second order criteria		
	Delivers consistency	Improves certainty	Implementation	Efficiency	Monitor impact
National environmental standard (NES)	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
	Would remove unwarranted variation through introduction of prescriptive national planning rules for forestry activities.	Would improve certainty about controls applied to forestry activities. Would avoid relitigation of issues, and achieve more certain environmental impacts. Nationally co-ordinated review is more consistent.	Councils would need to change plans to recognise the proposed standard, but provision of rules eases implementation process. Government can monitor whether an NES is put into effect and it can be enforced.	Benefits of proposed standard are expected to outweigh costs according to economic analysis commissioned by NZIER (see section 4.2).	Impacts of proposed standard compared with the status quo can be monitored in several ways. Councils might need to gather data to facilitate this.
National planning template	**Yes**	**Yes**	**No**	**Yes**	**Yes**
	A national planning template that allowed mandatory content to be prescribed within its structure would remove unwarranted variation and introduce consistent national planning rules.	Would improve certainty about the controls applied to forestry activities. Controls reflecting best practice would increase certainty of environmental outcomes. Nationally co-ordinated review is more consistent.	Barriers to timely implementation. The tool is not currently available and the timeframes to develop, pass and implement it are uncertain. If implemented, compliance could be monitored.	Costs and benefits might be similar to the NES, as it is also a mechanism to prescribe national planning rules. There is less certainty around these costs and benefits, given the stage of development of the proposal.	Impact of a national planning template for forestry activities could potentially be monitored in several ways. Councils might need to gather data to facilitate this.

4.3.1 Status quo – do nothing

NZIER's research shows that, under the status quo, council planning provisions are likely to continue to change through plan reviews and other processes, which will demand ongoing plan advocacy, particularly from industry. It is expected that, over time, a degree of unwarranted variation between councils' approaches will persist and consenting requirements will continue to increase. While an NES-PF would result in a slight increase in stringency across the board, there would not be the scope for constant change as there is under the status quo. The overall approach under the status quo is likely to remain ad hoc and lacking in consistency in terms of timing and stringency, and may be less effectively targeted to environmental risk than would be achieved under an NES-PF. Under this scenario, stakeholders will experience ongoing uncertainty about the regulatory environment and environmental outcomes.

4.3.2 Economic impacts

NZIER (2014) concluded that the proposed NES-PF would result in a range of costs and benefits compared with the status quo resulting in overall net benefits of between 1.10 and 2.98, excluding environmental effects, over a 30-year period. This means that, for every cost that forestry stakeholders (for example, councils, foresters and environmental non-governmental organisations) incur with an NES-PF, there will be between 1.10 and 2.98 times as many benefits (relative to the expected future costs and benefits if an NES-PF were not introduced).

The lower end of this range is based on a version of the ESC that has since been updated (see Box 12). MPI expected that the revision to the ESC (which was not complete when the cost-benefit analysis was carried out) would result in a lower risk rating for some areas of land.[8] In turn, MPI expected that this would result in fewer consents than otherwise expected under an NES-PF being required. As a result, forest owners and councils would avoid some of the predicted costs associated with the consent application process and compliance with consent conditions. NZIER was asked to calculate how the costs and benefits might change as a result of the changes to the ESC using different assumptions. At this stage, MPI cannot be certain of the reduction in the number of consents that would otherwise be expected under an NES-PF. However, it is reasonable to assume, based on NZIER and Landcare Research's analysis, that there will be at least a 10 percent reduction and the ratio of benefits to costs will be at least 1.41 and may be up to 2.98.

Overall, the benefits of an NES-PF outweigh the costs. Costs would mainly fall on the both small and large forest owners and managers and local government because of a slight increase in consents[9] and associated in-house compliance, as well as increased requirements for permitted activity monitoring and auditing. Some costs reduce over time as knowledge increases and processes are standardised. Some costs are only transitional, for example, initial staff training and alignment of plans. On the other hand, all stakeholders are expected to experience considerable certainty benefits from the increased clarity about the level of control of forestry activities over time. There are also expected benefits to multiple stakeholders from a reduction in plan advocacy costs and a reduction in plan development costs for councils.

4.3.3 Environmental impacts

Scion's (2015) assessment of environmental impacts aimed to establish how inclusion of these impacts in the cost-benefit analysis would influence the outcome of NZIER's analysis. Where possible, effects were quantified and monetary values were assigned.

Scion concluded that there would be environmental benefits from the proposed NES-PF that would certainly increase NZIER's cost-benefit ratio. The main benefits would arise from:

- avoided future costs of wilding management in small forests as a result of higher afforestation controls introduced in the proposed NES-PF;
- avoided erosion as a result of greater control of harvesting practices in forests on land with high or very high erosion risk – the economic value of avoiding costs (such as agricultural losses, infrastructure damage, increased flood severity and water quality impacts) was valued between $466 000 and $10.6 million per year;[10]

8 This assumption was based on feedback from the 2010 consultation that identified ESC misclassification of some land.
9 The expected increase in the number of consents will be reduced because of changes to the ESC.
10 The range reflects different assumptions about the amount and value of avoided erosion that is likely to occur under the NES-PF.

- improvements to areas such as freshwater quality and biodiversity as a result of increased setbacks and the use of the Fish Spawning Indicator.

Scion's (2015) report is available on MPI's website at www.mpi.govt.nz/nes-pf.

Q

8. Have the expected costs and benefits of the NES-PF been adequately identified?

Please provide comments to support your views.

4.4 Building on previous work

MPI sought to build on earlier work to investigate an NES-PF (see Box 2) by considering previous submissions and reviewing earlier analysis.

In September 2010, MfE released a consultation document seeking comments on the proposed subject matter for an NES-PF. At that time, six consultation workshops were held around the country. One hundred and seventeen submissions were received. A summary of comments made during this consultation activity is on MfE's website at http://www.mfe.govt.nz/land/proposed-NES-plantation-forestry-0.

MfE also convened four specialist working groups to address the main issues raised during consultation: water, Climate Change Response Act interface, ESC and biosecurity.

A revised consultation document was released in 2011, and original submitters were invited to comment further on the proposal. A further 62 submissions were received.

The comments showed agreement on many aspects of the proposal and raised concerns in certain areas, in particular, the scope and objectives of the proposal, specific conditions found in the draft rules, iwi concerns, practical effects on forestry and wider environmental issues. MPI has tried to address most of the concerns raised by submitters during the two MfE-led rounds of consultation so the current consultation builds on earlier work. Table 7 summarises these issues and how they have been addressed. A complete table of this analysis is in appendix 4.

As a result of the working group process and further analysis of the risk of adverse environmental effects, the draft rules have been updated. Key changes to the draft rules since the MfE-led process are shown in Table 8. They are also reflected in the full set of draft rules in appendix 3.

Table 7: Summary of main changes to proposed standard as a result of previous consultation

Issue	How issue has been addressed
Whether an National Environmental Standard for Plantation Forestry NES-PF is the most appropriate solution to the problem	Eighteen regulatory and non-regulatory solutions (many of which were suggested by submitters) to address the policy problem have been analysed. Through this process, an NES-PF has been confirmed as the best option to achieve the stated policy objectives.
Some of the rules (for example, setback requirements) might lead to unacceptable liabilities under the New Zealand Emissions Trading Scheme	The Climate Change Response Act 2002 was amended in 2012 so liabilities would no longer be incurred if land were required to remain cleared to implement best practice forest management (such as setbacks).
Whether the problem statement is accurate Some submitters felt the statement was too narrow or that the problem did not exist. Many submitted that a greater environmental outcome focus is needed to meet the sustainable management purpose under the Resource Management Act 1991.	The proposal addresses the problems associated with unwarranted variation in the way forestry activities are controlled through regional and district plans. In particular, it seeks to address the operational uncertainty and the uncertain environmental outcomes that exist under the status quo.
Councils should have the ability to be more stringent in managing coastal areas and freshwater quality. Concerns were raised about overlap with the National Policy Statement for Freshwater Management (NPS-FM).	Councils, under the proposed NES-PF, will retain the ability to apply more stringent rules to setbacks from coastal marine areas and, in certain cases, where freshwater quality objectives cannot be met.
Erosion Susceptibility Classification (ESC) inputs and methodology need to be updated and a mechanism for review needs to be developed to ensure data is correct and reliable	MPI engaged Landcare Research to refine the ESC classifications and to establish a process by which changes to the classification could be managed in the future.
Comments were raised about the interpretation and implementation of the proposed NES-PF, including plan changes and monitoring and compliance of the standards	MPI recognises that implementation is critical to policy goals being achieved. Therefore, MPI is planning a comprehensive implementation programme, including providing training and guidance about the NES-PF to a variety of groups.
The NES-PF will increase costs for councils and industry. Concerns were raised about increased environmental costs increased compliance costs for smaller players.	The cost-benefit analysis was updated based on changes to the proposed rules and changes in the status quo. The results show a net benefit excluding quantification of environmental effects.
The NES-PF will establish permitted baselines, particularly for activities that sectors other than forestry commonly undertake (such as earthworks and river crossings)	The current proposal contains draft rules for new permitted activities, which may result in an increased ability for decision makers to apply a permitted baseline test[11] when considering proposed activities. MPI has concluded that this does not present a significant risk. This is because the appropriate classification of the scope of the NES, and conditions on permitted activities limit the applicability of the test. Furthermore, sections 95D(b) and 95E(2)(a) of the RMA, as well as case law, provide discretion and limitations around whether and how a decision maker applies a permitted baseline test.

11 The "permitted baseline" is a discretionary test applied by decision makers when determining whether certain effects are relevant for a proposed activity. The test can be applied where an activity that requires resource consent under a district or regional plan is truly comparable in nature and effect to another activity that is permitted under that plan or an NES. This could mean that a decision maker, when considering a consenting decision, may disregard adverse effects of a proposed activity that are the same or similar in nature to those effects which are derived from a permitted activity under the NES.

Table 8: Changes to the draft rules since the consultation process led by the Ministry for the Environment

Risk of adverse environmental effect	Change made to the rules in response
MPI analysis identified that the impact of forestry activities on sensitive fish spawning habitats needed to be managed consistently across New Zealand	A freshwater fish spawning indicator, drawing on the best scientific evidence, has been developed to enable foresters to plan key activities around sensitive spawning periods (the Fish Spawning Indicator). This was not a feature of the previous NES-PF, but has been developed in response to issues raised about managing biodiversity risks.
Analysis of the risks associated with forestry activities resulted in changes to the proposed rules. In some instances, the requirement for resource consent has been removed and comprehensive permitted activity conditions have been introduced to achieve the same outcome	Changes that introduce permitted activity conditions include: • afforestation (in orange zone) – trees must not be planted within specified setbacks from water bodies or neighbouring properties; • earthworks (in orange zone with slope less than 25 degrees) – storm water and sediment control measures must be installed and maintained; • forestry quarrying (in red zone that is not susceptible to earthflow) – quarrying must not be undertaken within 20 metres of a surface water body; • harvesting (in orange zone susceptible to earthflow) – Harvest Plan must be prepared that assesses and addresses risks to the environment; • mechanical land preparation (in red zone where subsoil not disturbed) – control measures must be provided to prevent sediment run-off to waterways; • replanting (in red zone) – replanting must not encroach closer to significant natural areas than the previous crop did.

Q

9. Are there any issues that may affect the successful implementation of the NES-PF (such as decision-makers applying the permitted baseline test more frequently)?

Please provide comments to support your views.

4.5 Engagement on the current proposal

As the proposal developed, MPI tested the draft rules with a variety of other organisations and iwi. MPI got feedback from these groups to understand areas of concern, especially in relation to implementation. Where the proposed change would improve the balance between environmental protection and economic efficiency, the draft rules were adjusted. The following groups provided feedback on the draft rules:

- the New Zealand Forest Owners Association;
- the New Zealand Farm Forestry Association;
- iwi representatives;
- environmental non-governmental organisations;
- district and regional councils.

5 What the proposed changes would mean

An NES-PF would introduce a consistent set of national rules for forestry activities that would replace existing district and regional plan rules for these activities.

This section outlines what would change for different people or groups if an NES-PF were introduced. Because these are operational rules, their primary impact is on those affected by the rules in their day-to-day activities – councils and foresters. However, impacts on others are also highlighted below.

5.1 What the changes will mean for you

This section summarises the changes for councils, corporate and small-scale forest owners, iwi, environmental non-governmental organisations, and the wider public.

5.1.1 Impact on councils

Councils will no longer need to develop forestry-specific rules in plans because an NES-PF will prescribe these rules. This will reduce the costs of plan development and litigation. In the short term, councils may need to make some minor plan changes to accommodate NES-PF rules in district or regional plans.

Councils will need to be aware of and understand the rules that apply to forestry activities under the proposed NES-PF. Some forestry activities may be treated differently than they are in current plans. In some areas, the proposed NES-PF rules may be more stringent than current rules; in other areas, they may be more lenient. However, across the board, there will not be a significant increase or decrease in the level of stringency of rules. There will also be areas where councils have the flexibility to apply more stringent rules than those in an NES-PF. It will be important for councils to understand when and how this flexibility can be applied.

Guidance and training will be available to assist with understanding and implementing an NES-PF. Councils will also have access to the environmental risk assessment tools, including the ESC, the Fish Spawning Indicator and the Wilding Spread Risk Calculator. These will be available online alongside quality guidance that will support councils to make informed decisions to manage the environmental effects of forestry activities.

Under the NES-PF, forestry activities that have minor adverse environmental effects will be permitted (as long as associated conditions are complied with). As a result, councils will be required to monitor permitted activity conditions. The number of consents required for forestry activities may slightly increase, mostly in regions where forestry activities in high risk (orange and red) zones of the ESC do not currently require consents. The cost per consent is expected to decrease over time as consents become more standardised.

Forest owners will need to prepare a Harvest Plan, a Forestry Quarry Management Plan and an Erosion and Sediment Control Plan. These must be made available to councils at least 20 working days before the relevant activity is conducted (harvesting in the orange zone will require a Harvest Plan and an Erosion and Sediment Control Plan). This information will allow councils to plan for and monitor these operations.

5.1.2 Impact on corporate and small-scale forest owners

There will be nationally consistent rules for forestry activities across all district and regional councils around the country. This means the same rules for forestry activities will apply regardless of where a forestry activity is located. There will be some clearly defined matters where councils will have the ability to apply more stringent rules than an NES-PF to protect local environments, such as

significant natural areas or areas of known cultural or historic heritage value.

Having consistent national rules for forestry activities will reduce the need for forest owners to be involved in plan advocacy throughout the plan development process. Forest owners who operate across district or regional boundaries will no longer need to comply with two or more planning systems. An NES-PF should also provide greater certainty about the rules over the lifetime of a forest.

Under an NES-PF, planning rules will target the environmental risk of a forestry activity at a particular site. This means that, in practice, an NES-PF will permit forestry activities that occur in an area where a low environmental risk is present. Generally, consent will be required only when there is a greater environmental risk with an activity. The cost of consents is expected to decrease over time as processes are standardised under an NES-PF.

Forest owners will need to keep good records of plans, and prepare a Harvest Plan, a Forestry Quarry Management Plan and an Erosion and Sediment Control Plan. These must be made available to councils at least 20 working days before the relevant activity is conducted (harvesting in the orange zone will require a Harvest Plan and an Erosion and Sediment Control Plan). Standardised templates will be available to assist forest owners to prepare these plans.

Guidance will also be provided to make it easy to follow the rules under an NES-PF. Working under a nationally consistent rule set will mean it is easier to provide targeted guidance, support and training to foresters.

5.1.3 Impact on iwi

Previous consultation and engagement on an NES-PF with Māori highlighted diverse interests. For Māori who are forest owners, the operational costs and benefits of an NES-PF are likely to be similar as for other forest owners. Further to this, benefits are likely as a result of greater certainty of good environmental outcomes (see section 4.2.3).

In terms of managing unique local environments, including significant waterbodies, and cultural and historic heritage values, there may be little change because local communities retain some flexibility to establish more stringent rules to manage many of these areas (see section 3.4). In relation to wāhi tapu that meet the definition of archaeological sites, there is little change because the proposed rules are very similar to those in place under most existing plans (see the archaeological rules in general conditions in the draft rules in appendix 3).

5.1.4 Impact on environmental non-governmental organisations

Environmental non-governmental organisations often participate in plan advocacy and make submissions on consent applications for forestry activities. Under an NES-PF, these organisations may spend less time and resources on plan advocacy, although they may experience a small increase in costs associated with submissions on consents, hearings and mediation where necessary (for example, in areas where consent numbers increase).

Environmental non-governmental organisations will also experience indirect benefits from the greater certainty about environmental outcomes.

5.1.5 Impact on the wider public

The wider public will experience indirect benefits from the greater certainty about environmental effects.

5.2 What the changes will mean for existing plans

An NES-PF would replace existing district and regional plan rules for plantation forestry activities on the date of commencement of the NES-PF.[12] Where inconsistencies between existing plans and the NES-PF rules exist, NES-PF rules would supersede relevant existing plan rules. Councils would be required to adjust their plans to reflect NES-PF rules as soon as practical, which may be at the time of an expected plan change.

In some circumstances, a council could retain rules for plantation forestry. These are where an NES-PF:

- specifies, a territorial or regional authority can increase the level of stringency of an NES-PF rule through plan provisions (as discussed in section 3.4);
- is silent on an issue, this issue would be controlled by district or regional plan rules (for example, agrichemical application).

If a council chooses to exercise greater stringency (where an NES-PF allows this to occur), it would

12 The date of commencement is the date on which regulations come into force

be required to go through the plan change or preparation process set out in Schedule 1 of the RMA. This process involves community and iwi consultation and submission processes. An evaluation report also needs to be prepared, outlining why the NES-PF provisions would be insufficient to meet the requirements of the RMA and how additional stringency through plan rules would achieve this.

5.3 What the changes will mean for existing consents

The proposed NES-PF would apply to new applications for resource consent lodged after an NES-PF comes into effect. Where a resource consent application has been lodged or consent has already been issued before an NES-PF comes into force, the intention is that the consent will not be directly affected by an NES-PF. However, if a consenting authority chooses to review the consent conditions under section 128 of the RMA, depending on the context, it may be relevant to consider an NES-PF.

In relation to matters where local authorities can be more stringent than the proposed NES-PF, this may apply to existing consents if they are reviewed under section 128 of the RMA.

Where the conditions of an existing consent are more stringent than the NES-PF conditions, consent holders should discuss the status of their consent with the consenting authority.

Q

10. Please describe any risks or opportunities that you consider have not been identified or addressed in the proposal.

6 NES-PF and other relevant legislation

The proposed NES-PF has been developed in the context of several other government resource management priorities, particularly the implementation of the National Policy Statement for Freshwater Management (NPS-FM). This is a strategic priority for the Government and may have implications for the implementation of the proposed NES-PF. The proposed NES-PF has been developed with this in mind, and MPI has been working closely with MfE to ensure the instruments are aligned.

6.1 National Policy Statement for Freshwater Management

The NPS-FM directs how regional councils must manage fresh water and the activities that affect freshwater quality in their regional plans. Specifically, regional plans must include limits on the quantity of contaminants arriving in freshwater bodies. This must take account of the relative sources and contributors of contaminants. The process is typically done on a catchment scale, with catchments having multiple activities vying for resources.

Regional councils are required to fully implement the NPS-FM by 2025. Given the impact of some activities in the forestry life cycle (particularly earthworks and harvest activities) on the health of waterways, it is critical that any additional policy to manage the environmental effects of plantation forestry aligns with the NPS-FM.

6.1.1 How an NES-PF will support the objectives of the NPS-FM

By implementing regulations that will address land use effects on water quality, particularly sedimentation effects from harvesting and earthworks, the proposed NES-PF is expected to contribute to improved water quality outcomes. It is likely that in many cases the rules under the NES-PF would be sufficient to meet water quality objectives once objectives and the corresponding limits have been set. As most of the quality objectives have yet to be set, however, this is not certain.

However, there may be times when the rules of the proposed NES-PF are not sufficient to achieve forestry's share of the freshwater objectives, and other activities in a catchment would be required to compensate for any shortfall. To address this risk, the proposed NES-PF will explicitly provide for regional councils to have the flexibility to implement more stringent rules. Greater stringency will be allowed where:

- a limit has been set for a freshwater management unit that is not being met and forestry activities are a source of the contaminant within that freshwater management unit;
- significant values of an outstanding water body that have been specified (for example, in a Water Conservation Order or a regional plan) and forestry activities would have an adverse effect on those values.

Greater stringency will also be allowed in relation to activities that impact on the significant values of wetlands. The NPS-FM requires the protection of the significant values of wetlands; it does not require councils to protect wetlands from all impacts. The circumstances under which greater stringency will be allowed will, therefore, be relatively specific. Significant values must be identified and agreed through the value-identification process stipulated in policy CA1 of the NPS-FM and will then need to be specified in a regional plan or other relevant document.

In exercising this flexibility to set alternative rules, councils will still be bound by:

- section 44A(7) of the RMA, which requires them to observe an NES-PF;
- section 32(3A) of the RMA, which requires an evaluation of a more stringent rule to examine whether the prohibition or restriction it imposes is justified in the circumstances of the region or district.

This will mean, that in setting alternate rules, councils will have to provide a clear reason for why the provisions of the NES-PF are not sufficient and alternative rules will be more efficient and effective. As part of the NES-PF process, guidance will be developed to assist councils to evaluate whether greater stringency is required and the form it should take.

Q

11. Will the proposed NES-PF support regional councils to implement the NPS-FM?

Please provide comments to support your views.

6.2 National Policy Statement on Electricity Transmission

The purpose of the National Policy Statement on Electricity Transmission (NPS-ET) is to recognise the national significance of the electricity transmission network. It aims to facilitate the network's operation, maintenance and upgrade while managing its adverse environmental effects and the adverse effects of other activities on the network. Local authorities are to give effect, as appropriate, to the provisions of the NPS-ET in their plans.

While it is not common for forestry activities to affect the operation of the electricity transmission network, there is the potential for this to occur if operations are not managed appropriately. For instance, there is a risk that earthworks near support structures could undermine those structures or that the build-up of dust generated from earthworks could affect the performance of the network.

The proposed NES-PF provides for the effects of forestry activities on network utility infrastructure to be out of scope. This will ensure council provisions to implement the NPS-ET remain in force, and foresters will have to adhere to these rules in addition to the requirements of an NES-PF.

6.3 New Zealand Coastal Policy Statement

The New Zealand Coastal Policy Statement (NZCPS) guides local authorities in their day to day management of the coastal environment. Local authorities must give effect to relevant provisions of the NZCPS in planning documents and must have regard to relevant provisions when considering consent applications.

The proposed NES-PF provides for local authorities to be more stringent in relation to setbacks from the Coastal Marine Area. This will ensure that communities have the flexibility to continue to manage the effects of forestry activities on the coastal environment such as effects on natural character and landscape values. Communities will also be able to manage the effects on the water quality of freshwater entering the Coastal Marine Area through NPS-FM processes.

6.4 Hazardous Substances and New Organisms Act 1996

Genetically modified organisms are regulated under the Hazardous Substances and New Organisms Act 1996. To avoid duplication, the proposed NES-PF includes a provision permitting afforestation using genetically modified tree stock where it has been approved by the Environmental Protection Authority under the Hazardous Substances and New Organisms Act 1996.

Image by Ian Platt

7 How an NES-PF would be implemented

Effective implementation of an NES-PF will require consistent application of the rules by local authorities and a high level of compliance from the forestry sector. This section describes who is responsible for implementing the proposed NES-PF, what implementation activities will occur and the approximate timeframes for these activities.

7.1 Responsibility for implementing an NES-PF

The responsibility for developing, implementing and monitoring NESs usually rests with the Ministry for the Environment. However, the Minister for the Environment may delegate responsibility to another agency to be responsible for these tasks.

MPI has been the lead agency in developing the NES-PF since April 2013. MPI will also be responsible for the implementation, ongoing administration and monitoring of an NES-PF at a national level.

Local authorities will be responsible for giving effect to and enforcing the requirements of an NES-PF through their planning documents.

7.2 Implementation activities that will occur

If the proposal is progressed, after public notification of an NES-PF and before it comes into force, MPI will ensure that affected parties have access to relevant information, training and tools to adapt to the new regulations. This will include:

- providing guidance material to a variety of groups, including the New Zealand Farm Forestry Association, the Forestry Industry Contractors Association, corporate foresters and councils;
- providing training and other support to councils to help them transition from their current plan framework to an NES-PF;
- developing templates for Harvest Plans, Erosion and Sediment Control Plans, and Forestry Quarry Management Plans to help forest owners develop their plans;
- developing a framework to evaluate how effectively an NES-PF is meeting its objectives.

A high-level implementation plan and an extensive list of guidance topics are being developed. MPI will call on the advice and support of an implementation working group to help develop the detailed implementation approach. It will also seek further input from forest owners and councils to ensure the guidance material and training are in a format that is useful and relevant to the target audiences. Feedback on the type of guidance and training that would be helpful is welcome through the submission process.

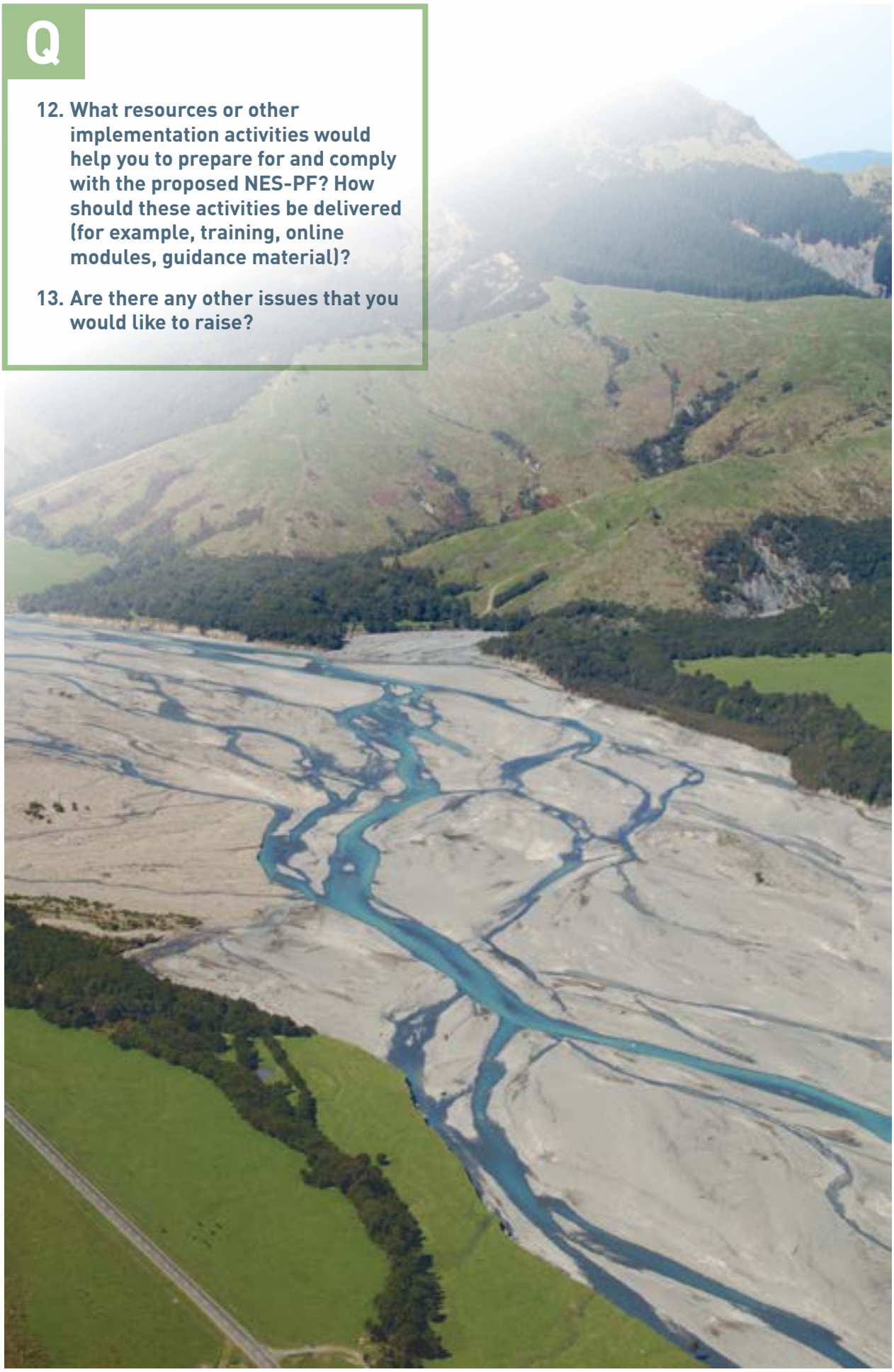
7.3 Timeframes for implementation

If an NES-PF is progressed, it is intended that the regulation would come into force 6–12 months after being publicly notified in the New Zealand Gazette. This delay will allow local authorities and forestry sector participants time to adapt their practices to accommodate the changes established by an NES-PF. Subject to the outcome of this consultation and final Cabinet approval, MPI expects that the regulations would be notified during the first quarter of 2016 and come into force later that year.

If an NES-PF were implemented, MPI would undertake ongoing monitoring to assess the effectiveness of an NES-PF at meeting its objectives. There is an expectation that councils would assist in this process by gathering data and providing this data to MPI. MPI expects to review the regulation five years after it comes into force. The data gathered through monitoring will be used to identify whether changes are necessary.

Q

12. **What resources or other implementation activities would help you to prepare for and comply with the proposed NES-PF? How should these activities be delivered (for example, training, online modules, guidance material)?**
13. **Are there any other issues that you would like to raise?**



8 How to comment or participate

MPI is consulting the public and iwi authorities on the proposed NES-PF from 17 June until 11 August 2015.

This section contains all the information you need to make a submission on this proposal.

8.1 Public meetings and hui

During the nine-week consultation period, MPI will hold public meetings and hui to provide information, answer questions and seek feedback on the proposal. These meetings and hui are advertised on the MPI website at www.mpi.govt.nz/nes-pf.

8.2 Making a submission

Anyone may make a submission on the subject matter of the proposed standard.

Any submission must include at least the following information:

- your name, postal address, phone number and, if you have one, email address;
- the title of the proposed standard you are making the submission about;
- whether you support or oppose the standard;
- your submission, with reasons for your views;
- any changes you would like made to the standard;
- the decision you wish the Ministers to make.

Questions for submitters to consider are included throughout the document.

Submissions can be made using an online survey, which is available at www.mpi.govt.nz/nes-pf. Alternatively, a submission template can be downloaded from the same webpage. Your submission can be emailed to NES-PFConsultation@mpi.govt.nz or posted to:

NES-PF Consultation
Attn: Stuart Miller
Spatial, Forestry and Land Management
Ministry for Primary Industries
PO Box 2526
Wellington 6140

Submissions must be received by MPI before 5 pm, Tuesday, 11 August 2015.

8.3 Legislative Requirements

All submissions are subject to the Official Information Act 1982 and may be released (along with the personal details of the submitter) under that Act.

If you have specific reasons for wanting to have your submission or personal details withheld, please set out your reasons in your submission. MPI will consider those reasons when making any assessment for the release of submissions, if requested under the Official Information Act.

Where you provide personal information in this consultation MPI will collect the information and will only use it for the purposes of the consultation. Under the Privacy Act 1993 you have the right to request access and correction of any personal information you have provided or that MPI holds on you.

8.4 Next steps

MPI will analyse all submissions that are received. Comments received during public meetings and hui will also be treated as submissions and included in that analysis. MPI will then prepare a summary of submissions, which will contribute to a report and recommendations on the proposed subject matter of an NES-PF to the Minister for the Environment. This report and recommendations will be publicly notified as required by section 44(2)(c) of the RMA.

An evaluation under section 32 of the RMA will then be prepared. The section 32 evaluation must

examine the extent to which the objectives of the proposed NES-PF are the most appropriate way to achieve the purpose of the RMA.

The report and recommendations and section 32 evaluation are expected to be provided to the Minister for the Environment by the fourth quarter of 2015. If the decision is to proceed with an NES-PF, the Parliamentary Counsel Office will be instructed to draft the necessary regulations. The office will draft the regulations having regard to the various information inputs and in accordance with regulatory drafting practice.

Once the drafting stage is complete, the Minister for the Environment will recommend to the Governor-General that the NES be made by order in council.

8.5 More information

The following additional information is available for submitters to consider at http://www.mpi.govt.nz/nes-pf:

- National Environmental Standard for Plantation Forestry: Regulatory Impact Statement. Prepared by the Ministry for Primary Industries (2015);
- Plantation forestry economic analysis: a further revised assessment of proposed National Environmental Standards. NZIER HG report to the Ministry for Primary Industries (2014);
- Environmental Impact Assessment of the Proposed National Environmental Standard for Plantation Forestry. Scion report to the Ministry for Primary Industries (2015);
- The Erosion Susceptibility Classification:
  a. Online mapping of the Erosion Susceptibility Classification;
  b. Update of the *Erosion Susceptibility Classification (ESC) for the Proposed National Environmental Standard for Plantation Forestry: Revision of the ESC.* Prepared by Landcare Research (2015);
  c. *Update of the Erosion Susceptibility Classification (ESC) for the Proposed National Environmental Standard for Plantation Forestry: Managing changes to the ESC and incorporating detailed mapping.* Prepared by Landcare Research (2015);
  d. *Erosion Susceptibility Classification and Analysis of Erosion Risks for Plantation Forestry.* Prepared by University of Canterbury (2011).
- Report about the Wilding Spread Risk Calculator, Calculating Wilding Spread Risk from New Plantings (DSS1 – Version_07011). Prepared by Scion (2012).
- The Fish Spawning Indicator:
  a. The online Fish Spawning Indicator;
  b. *Freshwater Fish Spawning and Migration Periods.* Prepared by NIWA (2014).
- Summary of feedback on the Ministry for the Environment's 2010 and 2011 proposals for a National Environmental Standard for Plantation Forestry;
- *National Policy Statement for Freshwater Management 2014.*

Glossary

Term	Description
activity area	Any particular area of land on which an activity is being or is to be undertaken. There may be more than one activity area on a site.
activity status	Under the Resource Management Act 1991, the activity status of a land use determines the level of control that a council has over how the activity is conducted, including whether or when consent is required. The four activity statuses under the Resource Management Act are permitted, controlled, restricted discretionary and discretionary. Under the proposed National Environmental Standard for Plantation Forestry, the activity status of a forestry activity reflects characteristics of the activity (in particular, the environmental risk it presents).
AEP	See annual exceedance probability.
afforestation	The act of planting a production forestry crop on land that is not currently in forest and has not been under plantation forestry cover within the past five years.
agrichemical	Any chemical substance, whether organic or inorganic, manufactured or naturally occurring, modified or in its natural state, that is used to eradicate, modify or control flora or fauna.
annual exceedance probability (AEP)	The chance of a flood of a given size (or larger) occurring in any one year, usually expressed as a percentage. Note: The National Institute of Water and Atmospheric Research's flood discharge model (available at http://stream-explorer.niwa.co.nz/) gives an estimate of a range of percent AEP floods (in cubic metres per second) for designated rivers and streams in New Zealand.
archaeological site	Has the same meaning as in section 6 of the Heritage New Zealand Pouhere Taonga Act 2014.
armouring	The placement of riprap, composed of large pieces of quarried angular rock material of sufficient mass, or the use of other methods to resist scour in flood flows and/or to contain a stream in defined channels.
battery culverts	A river-crossing structure using multiple culvert or box pipes to handle low flows through the pipes and designed to allow major flows and debris to overtop the entire structure (also known as a vented ford).
Bed	Has the same meaning as in section 2 of the Resource Management Act 1991.
cable hauling	The most common method for extracting felled trees on steep terrain in New Zealand. It involves hauling felled trees up to the work site with cables.
catchment	The total area from which a single water body collects surface and subsurface run-off.
clearfelling	The removal of all trees in a harvesting coupe in a single operation.
coastal marine area	Has the same meaning as in section 2 of the Resource Management Act 1991.

Term	Description
consent authority	Has the same meaning as in section 2 of the Resource Management Act 1991.
contaminant	Has the same meaning as in section 2 of the Resource Management Act 1991.
controlled activity	Has the same meaning as in section 2 of the Resource Management Act 1991.
corduroy	The laying of whole trees or logs close together to provide a stable base for machinery passing to or from a road subgrade. A corduroy is typically used to cross a poorly drained area (swampy ground) with low load-bearing capacity.
cost-benefit analysis	Assessment of the costs and benefits expected to result over time from the introduction of a new policy. They are often compared with the costs and benefits expected to result over time under the status quo. Cost-benefit analyses commonly attempt to quantify costs and benefits, although may also use qualitative assessment. Cost-benefit analysis is often used to inform policy decisions.
culvert	A round pipe or box structure that conveys a water flow under a road, track or other stream or river crossing.
cutover	Forested land that has been completely harvested.
debris	Coarse or large fragments of disturbed rock or soil and may include plant material
discretionary activity	Has the same meaning as in section 2 of the Resource Management Act 1991.
drift decks	A stream-crossing structure composed of a series of inverted u-shaped precast concrete elements, bearing a concrete slab that passes low flows through the structure and designed to allow major flows and debris to overtop the entire structure.
dwelling	Any permanent structure that is occupied or intended to be occupied in whole or in part as a residence and includes (but is not limited to) travellers' accommodation.
earthflow	A natural moving deposite of soil or debris.
earthworks	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.
Emissions Trading Scheme	A way for New Zealand to meet its international obligations around climate change. It puts a price on greenhouse gases to provide an incentive to reduce emissions and encourage tree planting.
erosion	The processes of the wearing away of the land surface (including soil, regolith or bedrock) by natural agents and the transport of the derived material. Erosion includes erosion from natural causes and erosion induced or accelerated by human activity.

Term	Description
Erosion Susceptibility Classification (ESC)	Determines the risk of erosion on land across New Zealand based on environmental characteristics including rock type and slope. Land is classified into four categories of erosion susceptibility according to level of risk: low (green), moderate (yellow), high (orange) and very high (red). This classification is based on potential erosion severity data from regional Land Use Capability assessments, which have been derived from the New Zealand Land Resource Inventory.
ESC	See Erosion Susceptibility Classification.
fill material	Soil or rock placed to raise the land surface for the purpose of constructing a forestry road, track, landing or stream crossing approach. Excludes spoil.
fish passage	The natural movement of fish between the sea and any river, including upstream or downstream in that river or stream.
fish spawning	When a fish species deposit eggs or bears live spawn. Each species typically has peak spawning periods. These periods may be associated with downstream migration to spawn at sea or upstream migration to spawn in freshwater.
ford	A structure within the bed of a river (that is permanently or frequently overtopped by water) that provides a hard surface designed to facilitate the crossing of a water body.
forestry / plantation forestry	A forest (native or exotic) deliberately established for commercial purposes. Under the proposed National Environmental Standard for Plantation Forestry, this is specifically defined as: (a) at least 1 hectare of forest cover of forest species that has been planted and has been, or will be, harvested; (b) including all associated internal infrastructure; but (c) not including: (i) a shelter belt of forest species, where the tree crown cover has, or is likely to have, an average width of less than 30 metres; (ii) forest species in urban areas; (iii) nurseries and seed orchards; (iv) fruit and nut crops; (v) long-term ecological restoration planting of forest species; (vi) willows and poplars space planted for soil conservation purposes.
forestry quarrying	The extraction and processing of rock, sand or gravel for the formation and maintenance of forest roads.
geothermal area	An area containing geysers (naturally occurring geothermal springs that occasionally or frequently erupt); springs vigorously depositing sinter; mud pools or geysers; superheated fumaroles; geothermal wetland, lake, pool or stream; or hydrothermal eruption craters.
green zone	An area at low risk of erosion under the Erosion Susceptibility Classification.

Term	Description
harvesting	One of the final steps in the forestry rotation. Harvesting (or logging) usually involves felling trees, extracting them, processing them into logs and loading the logs onto trucks for delivery to processing plants. Harvesting includes production thinning.
hazards (natural)	Has the same meaning as in section 2 of the Resource Management Act 1991.
historic heritage	Has the same meaning as in section 2 of the Resource Management Act 1991.
indigenous vegetation	Vegetation that occurs naturally in New Zealand or that arrived in New Zealand without human assistance.
infrastructure	Has the same meaning as in section 2 of the Resource Management Act 1991.
karst	Any region underlain by limestone and characterised by a set of landforms resulting largely from the action of carbonation.
karst protection area	An area of limestone geology with underground streams and many cavities.
lake	Has the same meaning as in section 2 of the Resource Management Act 1991.
land use capability (LUC)	A classification of potential limitations or hazards to productive use of land that is derived from the New Zealand Land Resource Inventory. Limitations or hazards in LUC classes 1 to 5 are negligible to slight, in LUC class 6 moderate, in LUC class 7 severe, and in LUC class 8 very severe depending ¬on the dominant hazard or limitation to productive use: erosion (e), wetness (w), climate (c) or soil (s).
landing	A log production and assembly area within a forest.
local authority	Has the same meaning as in section 2 of the Resource Management Act 1991.
LUC	See Land use capability.
maintenance and upgrade of existing earthworks	Includes activities to maintain and upgrade existing landings, minor reshaping of existing forest roads, clearing of water tables and installation of water controls and road metalling. Upgrade does not include road widening or realignment.
mechanical land preparation	Discing, mounding and spot mounding, contour and downhill ripping and roller crushing (without tracking), and other cultivation of land and associated removal of vegetation. V-blading involving disturbance of subsoil will be considered under earthwork rules. Note: mechanical land preparation is not included in the definition of earthworks.
mechanical raking	The process of making a windrow of slash. It generally involves a rake on an excavator boom or a root rake on a bulldozer but not lowered into the subsoil.
mounding	Encompasses a variety of site-preparation treatments involving mechanical disturbance of soil or subsoil.

Term	Description
national environmental standard (NES)	An NES lays out technical standards, methods or requirements for activities or outcomes under the Resource Management Act 1991, including conditions for when an activity is permitted and when consent is required. An NES overrides rules or consents that are more stringent than the new standard, unless it is stated that greater stringency is allowed. A rule or consent may not be more lenient than an NES. An NES comes into effect from the date of commencement stipulated in the regulation. Every council must ensure its plans include reference to and do not conflict with an NES, and must enforce the standard. (See sections 43–44A of the Resource Management Act 1991).
National Environmental Standard for Plantation Forestry (NES-PF)	An NES-PF would establish a technical standard for plantation forestry activities and set out when an activity is permitted and when consent is required.
national planning template	The 2013 resource management reform proposals included an initiative to develop national planning templates for district and regional plans. The intention of the templates would be to standardise planning documents, while continuing to allow specific local issues to be addressed. This proposal is still under development.
national policy statement (NPS)	An NPS states objectives and policies for matters of national significance that are relevant to achieving the purpose of the Resource Management Act 1991. Councils must give effect to an NPS in their plans.
NES	See national environmental standard.
NES-PF	See National Environmental Standard for Plantation Forestry.
New Zealand Land Resources Inventory	A spatial database containing land information.
NPS	See national policy statement.
orange zone	An area at high risk of erosion under the Erosion Susceptibility Classification.
outstanding natural features and landscapes	Natural landscapes and features that are considered of national or regional importance as provided by section 6(b) of the Resource Management Act 1991.
outstanding freshwater bodies	As defined in the National Policy Statement for Freshwater Management 2014.
overburden	Soil removed during forestry quarrying or earthworks.
perennial river or stream	A stream that maintains water in its channel throughout the year or maintains a series of discrete pools that provide habitats for the continuation of the aquatic ecosystem.
permitted activity	Has the same meaning as in section 2 of the Resource Management Act 1991.
potential erosion severity	Values ranging from 0 (negligible) to 5 (extreme) in the New Zealand Land Resource Inventory and Land Use Capability database. They have been classified into the Erosion Susceptibility Classification.
production thinning	Thinning of tree stems and extraction for sale.

Term	Description
pruning	Removal of branches from the lower section of a tree to produce high-quality clear-wood logs.
red zone	An area at very high risk of erosion under the Erosion Susceptibility Classification.
regional council	A regional council named in Part 1 of Schedule 2 of the Local Government Act 2002.
replanting	Planting of forest tree species over land where plantation forestry harvesting has occurred within the past five years.
restoration	The active intervention and management of degraded biotic communities, land forms and landscapes to restore biological character, ecological and physical processes, and their cultural and visual qualities.
restricted discretionary activity	Has the same meaning as in section 2 of the Resource Management Act 1991.
riparian zone	The margin and the bank of a water body; that is, the area where direct interaction occurs between land and water systems, which is important for the management of water quality, and ecological values.
ripping	Disturbing the subsoil to a depth of 30–90 cm with a single or double tine or (winged) ripper mounted on an agricultural tractor or bulldozer to break up highly compacted soil or a subsurface soil pan before planting to improve drainage and tree-root penetration.
riprap	Rock or other material of sufficient mass to armour shorelines, streambeds and other shoreline structures.
river	Has the same meaning as in section 2 of the Resource Management Act 1991.
river crossing	Temporary or permanent culverts, battery culverts (also known as vented fords or dry fords overtopped during floods) and bridges.
road	Has the same meaning as in section 2 of the Resource Management Act 1991.
roller crushing	A roller weighing several tonnes released down a slope from a ridge or track, crushing and breaking up vegetation in its path. On flatter terrain, rollers can be towed by a bulldozer or tractor.
rotation	The period between timber stand establishment and harvest.
sediment	Solid material, both mineral and organic, that is in suspension, is being transported, or has been moved from site of origin by air, water, gravity or ice and has come to rest on the earth's surface, above or below water.
sediment control measures	Measures designed to capture sediment that has been eroded and entrained in overland flow before it enters the receiving environment.
setback	The measured distance from a feature that creates a buffer within which certain activities cannot take place.
shelter belt	A row or rows of trees or hedges planted to partially block wind flow, primarily on cultivated land.

Term	Description
significant natural areas	Areas with significant indigenous vegetation and significant habitats of indigenous fauna, as outlined in section 6(c) of the Resource Management Act 1991.
skid site	An area of land in the forest, often specially prepared and surfaced, where logs or tree lengths extracted from the forest are accumulated, processed and loaded onto trucks for removals. Also referred to as a landing.
slash	Branches, tops, chunks, cull logs, uprooted stumps, slovens, broken trees and other waste wood left behind after harvesting.
slash and debris traps	Traps set in water bodies to capture slash and debris from forestry operations.
soffit	The underside of a bridge.
soil disturbance	The disturbance of soil other than by earthworks. Includes the disturbance by wheeled or tracked machinery or dragging logs.
spoil	Waste, soil or rock removed from the ground and deposited in another position.
stabilisation	Providing adequate measures, vegetative and/or structural, that will protect exposed soil to minimise erosion.
stream	See river.
subsoil	The layer of soil below a depth of 25 cm.
territorial authority	A city or district council named in Part 2 of Schedule 2 of the Local Government Act 2002.
thinning	Selective removal of trees within a stand to achieve an optimum stocking rate for the final crop. Thinning operations must leave a minimum of 250 stems per hectare. Production thinning involves the removal of the thinned trees for sale. Thin-to-waste operations leave the felled tree in situ.
topsoil	The surface layer of soil to a maximum depth of 25 cm.
tracking	Construction of temporary access structures of 1.5 m or more in width, including bladed tracks to serve as log skid roads, mobile tail-hold (backspar) trails or firebreaks, or tracks suited to light four-wheel drive vehicles and all-terrain vehicles.
unwarranted variation	Variation that does not provide any discernible environmental, economic, social or cultural benefit and imposes a cost.
upgrade	See maintenance and upgrade of existing earthworks.
urban zone	Land that a relevant operative or proposed district or regional plan classifies as primarily for residential activities.
wāhi tapu	Has the same meaning as in Part 2 of the Heritage New Zealand Pouhere Taonga Act 2014.
water body	Fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located in the coastal marine area.
water yield	The amount of water run-off coming out of a catchment over a specific period.
wetland	Has the same meaning as in section 2 of the Resource Management Act 1991.

Term	Description
Wilding Spread Risk Calculator	An online tool to identify the risks of wilding spread according to certain factors in the area where afforestation is occurring. It is used to inform the rules to manage these risks.
wilding trees	The natural regeneration or seedling spread of exotic trees in areas not managed for forest production.
windrowing	Slash from forest harvesting that is mechanically piled into rows.
yellow zone	An area at moderate risk of erosion under the Erosion Susceptibility Classification.

Appendix 1: Questions for submitters

This appendix collates the questions for submitters that are included throughout the consultation document. These questions are also included in a Word template and the online survey, which can both be accessed from www.mpi.govt.nz/nes-pf.

We would like to hear your views on the proposed NES-PF and encourage you to provide comments to support your answers to the questions below. For information on how to make a submission, please refer to section 8.

1. Do you think section 2.1 and 2.2 accurately describe the problem facing plantation forestry?

Please provide comments to support your views.

2. Do you consider that the conditions for permitted activities will manage the adverse environmental effects of plantation forestry?

   Please provide comments to support your views.

3. Are the conditions for permitted activities clear and enforceable (see appendix 3)? Can you suggest ways of making the rules clearer and more enforceable?

   Please provide comments to support your views.

4. Are the matters where local authorities can retain local decision-making appropriate (summarised in Table 2 and Table 4 and provided in detail in Appendix 3)?

   Please provide comments to support your views.

5. Will the environmental risk assessment tools (the Erosion Susceptibility Classification, the Wilding Spread Risk Calculator, and the Fish Spawning Indicator) appropriately manage environmental effects as intended (see section 3.5)?

   Please provide comments to support your views.

6. Do you have any comments about any particular activity or draft rule (see appendix 3)?

   Please include reference to the rule you are referring to.

7. Is the NES–PF the best option to meet the assessment criteria (in Box 13)?

   Please provide comments to support your views.

8. Have the expected costs and benefits of the NES-PF been adequately identified (see section 4.3)?

   Please provide comments to support your views.

9. Are there any issues that may affect the successful implementation of the NES-PF (such as decision-makers applying the permitted baseline test more frequently)?

   Please provide comments to support your views.

10. Please describe any risks or opportunities that you consider have not been identified or addressed in the proposal.

11. Will the proposed NES-PF support regional councils to implement the NPS-FM (see section 6.1)?

    Please provide comments to support your views.

12. What resources or other implementation activities would help you to prepare for and comply with the proposed NES-PF (see section 7)? How should these activities be delivered (for example, training, online modules, guidance material)?

13. Are there any other issues that you would like to raise?

Appendix 2: Forestry activities and their effects

Note: The commentary in this appendix is drawn from the original discussion paper on the proposed NES-PF (MfE, 2010) and the New Zealand Environmental Code of Practice for Plantation Forestry (NZFOA, 2007).

Mechanical land preparation

"Mechanical land preparation comprises a range of operations that are often necessary for the successful establishment or re-establishment of production forests" (NZFOA, 2007, p 23). 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. The types of related activities include:

- mechanical cultivation (ripping and/or mounding) and spot cultivation to improve the condition of the soil;
- mechanical raking, mulching, windrowing and blading to clear residual slash and create planting sites;
- roller crushing of weeds or woody debris to prepare sites for planting.

Poorly executed mechanical land preparation can result in adverse environmental effects resulting in sediment discharge to water bodies or activating erosion-prone areas. Where operators follow best practice, these effects are minimised or mitigated.

Afforestation

Afforestation is planting a production forestry crop on land that is not currently in forest and has not been under plantation forestry cover in the past five years. Planting is usually done manually, although where site conditions permit (that is, low gradient, level terrain), mechanical tree planters may be used.

Afforestation can have a variety of environmental benefits as well as some risks that need to be managed. The risks are not generally related to the activity of planting, but to the longer-term effects of the location in which the plants are established. The benefits and risks of afforestation are summarised in Table 9.

When establishing new plantings consideration of the design is needed to avoid long-term environmental, safety and operational issues (such as the steepness of the terrain and proximity to neighbouring properties, protected vegetation and utilities and infrastructure).

Earthworks

Earthworks are undertaken to provide the physical infrastructure needed for establishing, tending and harvesting a plantation. Earthworks refers to the disturbance of the land surface for the construction of roads, tracks and landings by machinery. Practices include blading, boring, contouring, drilling, moving, removing, placing or

Table 9: Environmental benefits and risks associated with afforestation (and replanting) activities

Environmental benefits	Environmental risks
Supports water quality values through the provision of shade, riparian cover and lower nutrient flow	Planting sites and certain tree species with a high risk of seed spread may cause unwanted conifer spread to non-forested land. This is known as "wilding spread" and it can affect landscape values, conservation and biodiversity values, existing and future land uses and catchment hydrology.
Ameliorates peak flood flows during heavy rainfall to reduce soil erosion and damage to lower catchment infrastructure	If planted in poorly planned locations, trees can cause adverse effects at the time of harvest; for example, on steep terrain, close to streams and protected vegetation, or close to neighbouring boundaries.
Acts as a tool to reduce sedimentation in water bodies	
Acts as a tool to mitigate soil erosion	

replacing, and compacting soil or earth. It excludes tracking and associated soil disturbance from the movement of wheeled or tracked machines used in or around cut-over areas at times of harvest.

Some of the main environmental risks associated with forestry operations are caused by poorly executed construction of roads or infrastructure such as landings for harvesting operations. Where operators follow best practice during forest earthworks, impacts are generally minimised or mitigated, but extreme rainfall events can cause high levels of sedimentation and earth movement.

Earthworks operations can produce two main adverse effects:

- accelerated erosion arises from increased soil exposure and instability (for example, collapse of slopes around cuts);
- excessive sediment discharge to waterways through erosion of water control structures, fill slope failure and soil disturbance.

Earthworks can activate or accelerate erosion by disturbing high-risk areas such as the toe of an earthflow, gully heads or old landslide scarp, or by concentrating surface flows into those areas.

Sediment discharges to a water body can affect water quality and subsequently impact on spawning fish, aquatic life, in-stream structures, and downstream values such as recreation and customary food gathering. Excessive sediment discharges and earthflows can have an impact on land, reducing on-site productivity and causing loss or damage to nearby infrastructure.

Forestry quarrying

Forestry quarrying refers to the extraction of rock, sand or gravel to form forest roads. Many large forests have dedicated quarries within the boundaries of the forest that may have been used during the current rotation or previous crop rotations. In smaller first-rotation forests, metal may have been extracted from suitable sources near the road construction, resulting in a number of small extraction sites (referred to as borrow pits).

Quarrying can have similar effects to earthworks in relation to soil and slope stability, water quality, landscape and effects on cultural sites. In highly erosion-prone areas, where quarry material is likely to be located in rocky outcrops, the key risks relate to overburden disposal.

River crossings

River crossings "are commonly required in most New Zealand plantation forests to provide access" (NZFOA, 2007, p 20). The term covers the installation, construction, placement, use, maintenance, alteration, extension or removal of permanent or temporary structures in, on, under or over the bed of a river. It also includes river bed and bank disturbance or contaminant discharge to allow vehicle and machinery access across the river. River crossings require good design, installation and ongoing monitoring to minimise any potential adverse impacts.

The main risks when installing and using river crossings are:

- sedimentation (that is, suspended sediment and bed sedimentation) of the river during construction and use of some types of crossings (such as drift decks and fords);
- restricting or preventing fish passage and degradation of habitat;
- activating or accelerating bed erosion by concentrating water flows or velocities;
- accumulating debris around culvert openings and bridge abutments, which can result in scour and local flooding;
- displacing or destroying structures during floods.

"On-going monitoring and maintenance is essential to ensure that crossings continue to function capably and with minimum environmental impact" (NZFOA, 2007, p 20).

Pruning and thinning-to-waste

The two principal tending (silviculture) operations during the forestry cycle are pruning and thinning-to-waste. Tending is aimed at improving the product and quality characteristics of the crop. Pruning removes branches from the lower section of a tree, typically up to about 6.5 m. Thinning is selective removal of trees within a stand to achieve an optimum stocking rate for the final crop. Production thinning involves the removal of thinned trees for sale and falls within the definition of harvesting. Thin-to-waste operations

leave the felled trees on the forest floor. Where the residual stocking from a waste thinning operation is below 250 stems per hectare, the effects are considered to be similar to those from production thinning. In this case, the operation would be subject to the requirements a harvesting activity.

Pruning and thinning typically have minor environmental effects that are limited to issues related to where the pruned or thinned material is deposited. Pruned or thinned material such as branches, young trees or other woody debris that is deposited into water bodies, or where it has the potential to enter a water body, is the primary risk as it can have detrimental effects on water flow, water quality, aquatic life and, in extreme cases, property and infrastructure due to flooding.

Harvesting

Harvesting is one of the final steps in a plantation forestry life cycle and includes production thinning. Harvesting (or logging) usually involves felling trees, extracting them, processing them into logs, and loading the logs onto trucks for delivery to processing plants, or for export.

Clear felling is the most common type of harvesting in New Zealand and involves cutting down an entire compartment or stand of trees. Trees are then extracted using methods suited to the land, access, forest size and effects on the environment. Many clear-fell operations take place on steep terrain, where cable hauling is the most common extraction method used. Production thinning occurs during a rotation, and is a way of extracting an intermediate crop before final harvesting. The number of logs extracted during production thinning is significantly less than those from the final crop.

The challenges of harvesting in difficult terrain can lead to adverse effects on the environment if not managed properly. However, avoidable impacts can be mitigated by good forestry practices. Potential adverse effects include:

- discharges of slash and contaminants onto land and into water;
- soil disturbance from harvesting including; disturbance by harvesting machinery;
- riparian vegetation disturbance;
- soil erosion.

Sediment and slash can degrade water quality and in-stream habitats through increased sediment levels. It can also cause damage to infrastructure downstream (for example, damage to bridges or culverts).

Replanting

Replanting is planting a site after harvesting a previous crop. For an activity to be classified as replanting, rather than afforestation, the planting must occur on a site where plantation forestry has occurred within the past five years.

The environmental effects of replanting are similar to those of afforestation. However, a second generation forest is likely to produce less sedimentation because roads and culvert networks will already be in place and sedimentation from maintenance and upgrades will be lower than during construction.

Appendix 3: Draft rules of the proposed NES-PF

Interpreting the draft rules

The tables in this appendix set out the draft rules developed by the working group. These draft rules are intended to convey the policy intent of the proposed subject matter for an NES-PF. The draft rules in their current form may be subject to change, as a result of consultation and drafting processes. Each table of rules is supplemented by a rationale of the policy intent in the right-hand column.

Each of the eight forestry activities has a separate table. In addition, a general conditions table sets out the draft rules intended to apply across all forestry activities.

As described in section 3.1, under the proposal, forestry activities are intended to be permitted where the risk of adverse environmental effects is low and permitted activity conditions can be met. The requirement for resource consent is introduced as the level of risk of adverse environmental effects increases in the location an activity is planned. The different activity statuses correspond to the level of risk of adverse environmental effects.

Each table is divided into several sections that cover different aspects of this approach. Broadly, these aspects are: the permitted activity conditions; matters over which control is reserved; matters over which discretion is restricted; and, the local authority responsible for this matter (that is, with jurisdiction). Explanatory notes are shown in Figure 2.

The permitted activity, controlled and restricted discretionary sections are each split into two subsections. A summary row identifies:

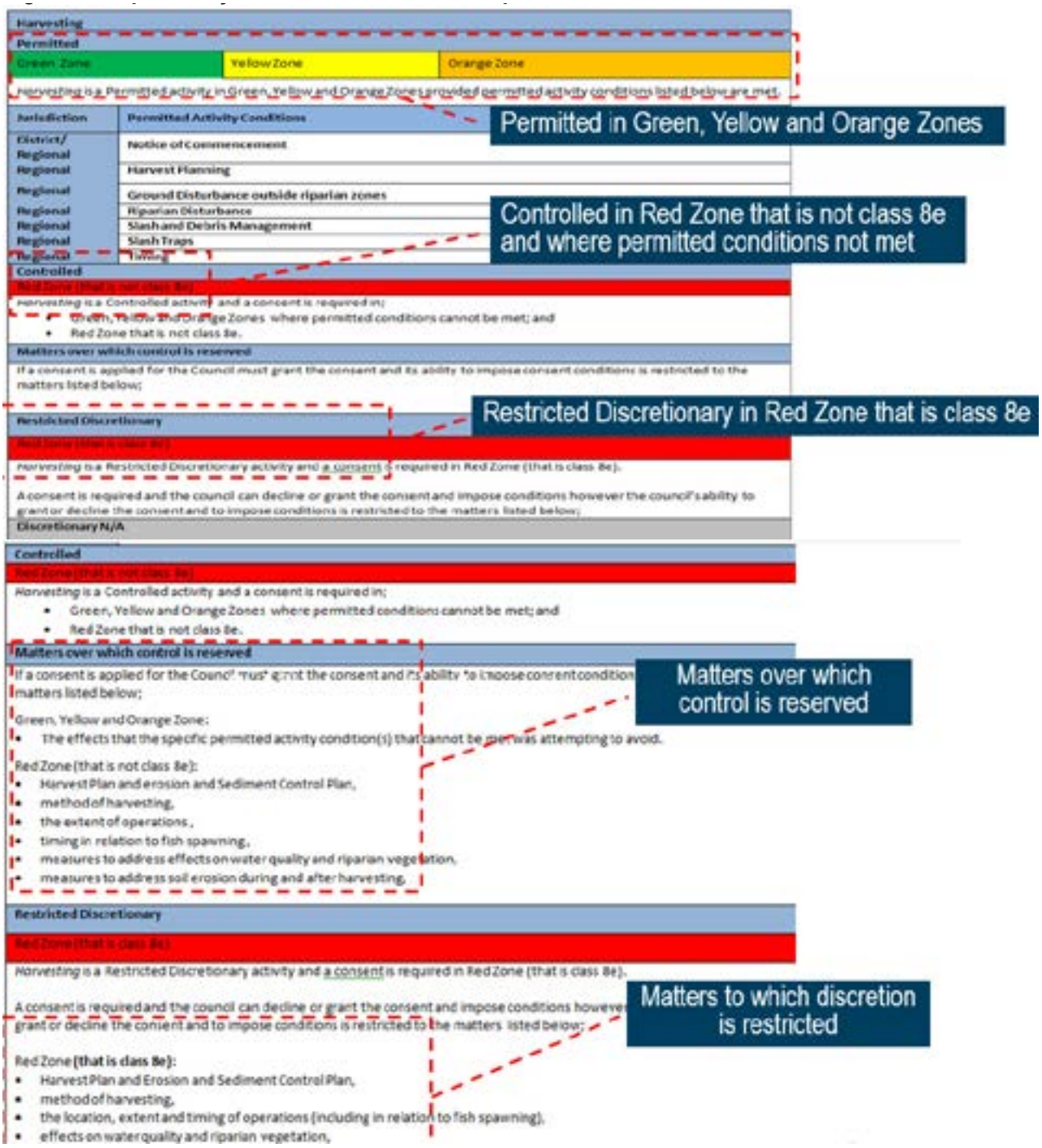
- where and when an activity is permitted, controlled or restricted discretionary (this includes a colour-coded strip that relates to the Erosion Susceptibility Classification (ESC) class of land);
- the conditions that need to be met for the activity to be undertaken as a permitted activity or, where consent is required, the matters over which consenting authorities may exercise control or theexercise discretion.

Where the permitted activity conditions cannot be met, the activity will require resource consent and either the controlled or restricted discretionary conditions will apply.

The jurisdiction column indicates whether each individual permitted activity condition is a district or regional council function.

Some of the conditions attached to activities (including permitted activities) may become more certain as a result of consultation and further analysis and drafting.

Figure 2: Explanatory notes to assist with interpretation of the draft rules



AFFORESTATION

Objective: To introduce a consistent set of afforestation controls that manage the risk identified below in a manner that is in line with good forest management practice**.**

Scope: Afforestation is the act of planting a production forestry crop on land that is not currently in forest and has not been under plantation forestry cover within the past five years.

Risk: Risks associated with afforestation are primarily the:

- unintended spread of plantation species into areas not intended for forest production, including indigenous habitats such as tussock grassland and neighbouring properties – wilding spread can affect landscape values, conservation and biodiversity values, existing and future land uses and catchment hydrology;
- establishment of forests in areas that are likely to have heightened risks during subsequent production forestry activities such as earthworks and harvesting.

Permitted

Green Zone	Yellow Zone	Orange Zone	
Afforestation is a permitted activity in: • **Green, Yellow and Orange zones;** • **where the land is identified as:** ○ **Land Overlay 3A (LO3A) under the Gisborne District Combined Regional Land and District Plan 2006; or** ○ **Ministry for Primary Industries (MPI) Regional Scale Target Land; or** ○ **land that is included in a recognised regional council erosion management scheme; and** • **where the following permitted activity conditions are met.**			The intent of the LO3A provision is to ensure the afforestation controls do not act as a barrier to afforestation initiatives such as Gisborne's Sustainable Hill Country Project. Where other regions wish to adopt similar treatment for erosion-control purposes the National Environmental Standard (NES) will allow a gazetting process for an exemption to be granted to incorporate that land.

Jurisdiction	Permitted activity conditions	Rationale
District	**Wilding tree risk** Afforestation of conifer species in an area with a wilding spread risk calculator score of 11 or less.	This condition seeks to allow as permitted the afforestation of areas and/or species that have a low risk of wilding spread. It is intended that the wilding tree conditions apply to only conifer species because the wilding risk calculator applies only to conifer species. This condition seeks to ensure species that do not pose a wilding risk are not affected by the wilding risk conditions. It is considered that the Biosecurity Act 1993 and regional pest management plans provide sufficient control of wilding risk of non-conifer species.
District	**Setbacks** Afforestation must not occur within the following setbacks. **Setback from** / **Minimum horizontal distance (m)** Adjoining property under different ownership / 10 m – unless approval of the adjoining owner(s) has been obtained	

<table>
<tr>
<td>Regional</td>
<td>
<table>
<tr><td>Adjoining existing dwelling under different ownership</td><td>The greater of:
i. 40 m; or
ii. where vegetation could shade the dwelling between 10 am and 2 pm on the shortest day of the year (except where topography already causes shading);
• unless approval of the adjoining owner has been obtained.</td></tr>
<tr><td>Urban/residential zone</td><td>30 m – unless approval of the adjoining owner(s) has been obtained</td></tr>
<tr><td>Road setbacks</td><td>Where vegetation could shade a paved public road between 10 am and 2 pm on the shortest day of the year; except where:
• topography already causes shading;
• icing does not occur;
• written consent obtained from the road-controlling authority confirming it is satisfied the vegetation does not pose a safety risk, having had regard to:
– the physical characteristics of the road;
– the degree of potential shading of the road;
– the nature and extent of the vegetation;
– the surrounding topography; and
– potential weather effects on the road, including consideration of icing risk.</td></tr>
</table>
<table>
<tr><th>Setback from</th><th>Bank full channel width</th><th>Minimum horizontal distance</th></tr>
<tr><td rowspan="2">Perennial river or stream</td><td>< 3 m</td><td>5 m</td></tr>
<tr><td>≥ 3 m</td><td>10 m – except where a smaller setback is required to meet the conditions of a regional pest management strategy</td></tr>
<tr><td colspan="2">Wetlands larger than 0.25 ha</td><td>5 m</td></tr>
<tr><td colspan="2">Lakes larger than 0.25 ha</td><td>10 m</td></tr>
<tr><td colspan="2">Coastal marine area</td><td>30 m</td></tr>
<tr><td colspan="2">Outstanding freshwater bodies (as defined in the National Policy Statement for Freshwater Management (2014) (NPS-FM)) or surface water bodies subject to water conservation orders.</td><td>10 m</td></tr>
</table>
</td>
<td>These conditions aim to establish setbacks so as to avoid effects of forestry on adjoining properties, including urban zones, residential sites and public roads

Road setbacks aim to avoid the excessive shading of paved roads because this can lead to increased or more frequent icing of the road, which is a safety risk.

This condition aims to establish appropriate setback distances from water bodies to reduce the risk of future operations such as harvesting or earthworks causing sedimentation or damage to riparian areas that have the potential to degrade water quality and instream habitats.

Note: Councils have the ability to be more stringent in relation to outstanding freshwater bodies and water conservation orders. It is intended that this additional stringency should be used to impose greater setbacks only where that is justified to protect the specific character(s) of the waterbody that is considered outstanding.</td>
</tr>
</table>

	Genetically modified tree stock Afforestation using genetically modified tree stock is permitted where the tree stock has gained the appropriate approval for deployment from the Environmental Protection Authority (EPA), and is subject to conditions imposed by the EPA.	This condition recognises that the EPA is best placed to evaluate the risks of genetically modified organisms and that approval and conditions imposed under the EPA regime will be sufficient to ensure any risks associated with the deployment of the tree stock are managed.
Controlled – N/A		
Restricted discretionary		
Red Zone Afforestation is a restricted discretionary activity and a consent is required in: • the Red Zone; • any zone where permitted activity conditions cannot be met.		
Matters to which discretion is restricted		

Wilding risk
• Forest species
• Mitigation action to restrict wilding tree spread
 	
Setbacks (regional matters)
• Aquatic and terrestrial biodiversity effects
 	
Setbacks (district matters)
• The effects on adjacent neighbouring landowners, dwellings or urban/residential zones.
• Icing or shading effects on the road
Where afforestation is restricted discretionary because it is located on Red Zone land, then discretion must be restricted to the matters that address erosion risk.
 	
Erosion risk
• Effects of afforestation on land with severe to extreme erosion susceptibility under standard plantation forest regime, including effects on aquatic ecosystem.
• Measures to avoid, remedy or mitigate erosion including:
  ○ planting location and species,
  ○ requirements to address geotechnical and slope stability effects of infrastructure location;
  ○ sequencing of harvesting;
  ○ requirements to re-establish effective vegetation cover post-harvest through replanting or other means;
  ○ provision of downstream debris retention structures;
  ○ future harvesting and earthworks effects.
 	
Note: *consents in Orange Zone to be non-notified.*
	These matters seek to restrict the discretion of the decision-maker to the specific effects of the permitted activity condition(s) that could not be met.
	
	These matters seek to ensure that the following risks are considered, and appropriate conditions to mitigate these risks are imposed:
	• the spread of wilding tree species;
	• the effects on aquatic environments when forests are established within regional setbacks;
	• erosion risk when forests are planted in the Red Zone.

Discretionary – N/A		

EARTHWORKS

Objective: To introduce a consistent set of forestry earthworks controls that manage the risks identified below in a manner that is in line with good forest management practice.

Scope: 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.

Note: *Quarrying and mechanical land preparation do not fall within the scope of these earthworks controls. Quarrying and mechanical land preparation are defined activities and are subject to specific controls.*

Risks: Some of the most significant potential effects arising from forestry operations are associated with the construction of roads or infrastructure (such as landings) for harvesting operations. These effects are usually related to erosion or the products of erosion (that is, sediment). Sediment has two main impacts. It can:

- increase the turbidity of river water (decrease clarity);
- clog riverbeds and downstream receiving environments such as estuaries and lakes.

Both of these impacts affect the biological community and health of an ecosystem.
Specifically, erosion or excessive earthworks have the potential to reduce on-site productivity and cause loss or damage to forest infrastructure.

Permitted

Green Zone	Yellow Zone	Orange Zone (slope < 25 degrees)	
Earthworks are permitted: • **in Green and Yellow zones;** • **in an Orange Zone where the slope of the land is less than 25 degrees;** • **where the following permitted activity conditions are met.** ***Note:*** *Maintenance and upgrade of existing earthworks is permitted in all zones (including Red Zone), provided the permitted activity conditions are met.*			These conditions seek to ensure that, where earthworks are undertaken in highly erosion-prone areas, the specific risks of the activity on that site can be managed through consent conditions. It is intended that such earthworks involve only works such as reshaping of road surfaces, including for drainage purposes. See the Glossary for the definition of "maintenance and upgrade of existing earthworks". Maintenance and upgrade of existing earthworks does not include road widening or realignment.

Jurisdiction	Permitted activity conditions	Rationale
District/ Regional	**Notice of commencement** Regional and district councils must be notified at least 20 working days and no more than 60 working days before earthworks operations start, unless this requirement is waived by the relevant council. Councils may reduce this notice period at their discretion.	This rule seeks to ensure that relevant councils are notified in a timely manner of earthworks starting, so they are aware of operations occurring and can schedule monitoring programmes if necessary.

Regional	**Road widening and realignment for safety purposes** Road widening or realignment for safety purposes is permitted in all zones where: • the road is not being upgraded to increase its carrying capacity or allow use by a heavier class of vehicle; • road widening and realignment use best practice benching and compaction techniques in accordance with the *New Zealand forest road engineering manual* (NZFOA, 2012 – "NZFOA road engineering manual"). • road widening and realignment is on slopes over 35 degrees, fill material must be end hauled, in accordance with the NZFOA road engineering manual, section 4.3.1-3; • overburden is placed in a way that meets the spoil conditions; • the volume moved is more than 5 000 m^3 per activity area; • a record of any road widening or realignment for safety purposes is maintained and is available for inspection by the relevant council.	Narrow roads with poor visibility may increase the risk of accidents. This conditions seeks to ensure that the operation of these earthworks controls do not discourage works that would reduce health and safety risk. The intent of this rule is to allow upgrade for safe use by the same class of vehicle. Where the road has not been previously designed to carry fully loaded logging trucks these vehicles should not be able to use the road following the widening or realignment.

Regional	**Requirement to prepare an Erosion and Sediment Control Plan**
	• An Erosion and Sediment Control Plan (ESCP) must be prepared that assesses and addresses the operational risks to the environment.
	• Earthworks must be undertaken in accordance with an ESCP, which must be made available to the council on request at least 20 working days before operations start. The scope of an ESCP must be matched to the scale and complexity of the operation. All earthworks activity must be carried out in accordance with that ESCP.
	• Material amendments to the earthworks plan must be documented and available to the relevant council on request. Material amendments are significant changes, such as the relocation of roads or landings, or changes to proposed controls to manage environment impacts.
	
	The ESCP must include but not be limited to:
	• a description of the nature, scale, timing and duration of activities including construction, roading, the formation of any new track, earthworks and stabilisation;
	• the erosion and sediment control measures to be used and indicative locations, including:
	  ○ water run-off controls;
	  ○ methods to limit slumping of batters, cuts and side castings;
	  ○ measures to maintain slope stability;
	  ○ methods of sediment retention and control of sediment run-off;
	  ○ methods to avoid effects on riparian margins and water bodies;
	• heavy rainfall response and contingency measures;
	• maintenance and monitoring procedures;
	• methods to monitor achievement of the plan;
	• revegetation requirements.
		The requirement to prepare an ESCP seeks to ensure that the risks of undertaking earthworks in the specific location are identified and measures to manage these risks have been considered and implemented.

<table>
<tr>
<td>Regional</td>
<td>Operation
Temporary tracks and other earthworks in the Orange Zone that are not required for future operations must be deactivated and stabilised to control run-off within 20 working days of their last use.
Land disturbance in ephemeral stream channels must be managed to avoid obstruction or diversion to the extent that no more than minor damming, flooding or erosion occurs.</td>
<td>This condition seeks to ensure that where temporary tracks have been created they are stabilised as soon as they are no longer required to decrease the risk of the disturbed area leading to increased run-off or erosion.</td>
</tr>
<tr>
<td>Regional</td>
<td>Setbacks
Earthworks must not be undertaken within these setbacks:
<table>
<tr><th>Setbacks for new earthworks construction also apply to temporary tracks, except where topographical constraints leave no alternative</th><th>Bank full channel width</th><th colspan="2">Minimum horizontal distance</th></tr>
<tr><td rowspan="2">Perennial river or stream</td><td>< 3 m</td><td>5 m</td><td rowspan="2">Except during the construction and maintenance of a water-body crossing or a debris trap</td></tr>
<tr><td>≥ 3 m</td><td>10 m</td></tr>
<tr><td colspan="2">Wetlands larger than 0.25 ha</td><td>5 m</td><td></td></tr>
<tr><td colspan="2">Lakes larger than 0.25 ha</td><td>10 m</td><td></td></tr>
<tr><td colspan="2">Coastal marine area</td><td>30 m</td><td></td></tr>
<tr><td colspan="2">Outstanding freshwater bodies as defined in NPS-FM or surface water bodies subject to water conservation orders.</td><td>10 m</td><td></td></tr>
</table></td>
<td>These setback conditions aim to keep earthworks activities and machinery away from surface water bodies to reduce the risk of sedimentation or damage to riparian areas that have the potential to degrade water quality and in-stream habitats.</td>
</tr>
<tr>
<td>Regional</td>
<td>Fill
Fill material must contain no more than 5% (by volume) of vegetation and wood, except for tracked areas or when wood is used as corduroy.</td>
<td></td>
</tr>
<tr>
<td>Regional</td>
<td>Spoil
Spoil must not be deposited:
• where it may cause failure of the deposited material or the underlying land;
• into a surface water body or in a position where it can readily enter a surface water body or in a position where it can deliver sediment into a surface water body;
• over logging slash or woody vegetation;
• outside a production area.</td>
<td>This condition seeks to ensure that excess spoil is not deposited where it increases the risk of slope instability.</td>
</tr>
</table>

<table>
<tr><td>Regional</td><td>Sediment and stormwater control measures
Stormwater and sediment control measures must be installed and maintained:
• water run-off controls must be installed and maintained for all tracks, landing sites and fire breaks;
• batter, cuts and side castings must be established by methods that prevent slumping as far as possible.</td><td>These conditions seek to ensure that specific erosion and sediment controls are adopted to prevent sediment discharge to surface waterways and off-site erosion.</td></tr>
<tr><td>Regional</td><td>Stabilisation and containment
As soon as practicable after the completion of the activity and no later than 12 months from the date of construction, exposed areas of soil that have the potential to discharge sediment to water must be:
• contained within the site;
• stabilised to contain sediment by measures such as:
○ seeding;
○ vegetative cover (including revegetation through natural regeneration), mulch (for example, hay or straw) or slash cover;
○ compacting, drainage or roughening;
○ engineering techniques such as rock armouring.
Stabilisation requirements do not apply to firebreaks.</td><td>These conditions seek to ensure that measures are taken after the completion of earthworks to stabilise disturbed areas to reduce the ongoing risks of the disturbed areas causing increased erosion or sedimentation of surface waterways.</td></tr>
<tr><td>Regional</td><td>Design
• Align and manage tracks to divert run-off to disperse flows.
• Bench and compact landing fill areas and road line fills on slopes over 25 degrees.</td><td>These conditions seek to ensure that tracks and roads are designed and constructed in a manner that reduces the risks of surface water flows leading to increased erosion or sedimentation of surface waterways.</td></tr>
<tr><td colspan="3">Controlled – N/A</td></tr>
<tr><td colspan="3">Restricted discretionary</td></tr>
<tr><td colspan="2">Orange Zone (slope > 25 degrees)</td><td>Red Zone</td></tr>
<tr><td colspan="2">Earthworks is a restricted discretionary activity and a consent is required if:
• the land is in the Orange Zone and the slope is greater than 25 degrees; or
• the land is in the Red Zone; or
• any of the permitted conditions are not met.

If consent is applied for, a council may decline or grant the consent and impose consent conditions. However, a council’s decision-making power is restricted to the matters listed below.</td><td></td></tr>
</table>

Matters over which discretion is restricted	
Where earthworks is restricted discretionary because it could not meet the permitted activity conditions: • discretion must be restricted to the effects that the specific permitted activity condition(s) that could not be met was attempting to avoid. Where earthworks is restricted discretionary because it is located in an Orange Zone and the slope is greater than 25 degrees or in a Red Zone, discretion must be restricted to the following matters: • timing, location and duration of works; • ecological and aquatic effects; • method of stabilisation of soil disturbance; • method of sediment retention and run-off stormwater control effects on riparian vegetation; • method of minimising erosion; • placement and management of cuts and fill likely to cause slope instability.	These matters are considered sufficiently broad to reflect the full range of potential impacts from earthworks operations.
Consents in Orange Zone must be non-notified.	
Discretionary – N/A	

HARVESTING

Objective: To introduce a consistent set of harvesting controls that manage the risks identified below in a manner that is in line with good forest management practice.

Scope: Harvesting is the act of felling and extracting trees and the associated soil disturbance.

Harvesting includes:

- discharges of slash and contaminants to land and water associated with harvesting;
- production thinning;
- soil disturbance associated with harvesting, including disturbance by harvesting machinery;
- damage to indigenous vegetation adjacent to the plantation forest where necessary to remove the production crop [***Advice note:*** *This is intended to include temporary edge damage to significant natural areas (SNA) (or similar) that is likely to readily recover. "SNA (or similar)" refers to an area identified in a regional policy statement, regional plan or district plan pursuant to section 6(c) of the Resource Mangement Act 1991.*];
- riparian vegetation disturbance;
- the damaging or removal of indigenous vegetation within a plantation forest, where its removal is necessary to harvest a plantation forest, including vegetation associated with a plantation crop, that is, vegetation that:
    - has grown up under (or may have overtopped) production species; or
    - is within an area of failed planting (within the last rotation); or
    - is within an area of regenerating cutover; or
    - occurs on an existing access road.

Harvesting does not include:

- earthworks (such as earthworks to establish temporary or permanent access roads or landings).

Risk: Risks particular to harvesting operations are primarily:

- sediment transport to water bodies;
- slash transport into surface water bodies;
- soil erosion.

Sediment and slash can degrade water quality and in-stream habitats through increased sediment concentration and habitat destruction and can cause downstream infrastructure damage.

Permitted

Green Zone	Yellow Zone	Orange Zone
Harvesting is a permitted activity in Green, Yellow and Orange zones provided permitted activity conditions listed below are met. **Low intensity harvesting** **Low intensity harvesting is permitted in all zones where:** • **a minimum of 75% canopy closure is maintained at all times for any given hectare of forest land;** • **all other permitted activity conditions for harvesting are met.**		

Jurisdiction	Permitted activity conditions	Rationale
District/ Regional	**Notice of commencement** Regional and district councils must be notified at least 20 working days and no more than 60 working days before harvesting operations start. Councils may reduce this notice period at their discretion.	This rule seeks to ensure that regional councils are notified in a timely manner of harvesting operations starting, so they are aware of operations occurring and can schedule monitoring programmes if necessary.
Regional	**Harvest planning** • A Harvest Plan must be prepared that assesses and addresses the operational risks to the environment. • The Harvest Plan must be prepared in accordance with the prescribed template. • The Harvest Plan must be made available to the regional council at least 20 working days before harvesting operations start, either on request or provided annually on agreement with the relevant council. • The scope of the Harvest Plan must be matched to the scale and complexity of the operation. • All harvesting must be carried out in accordance with the Harvest Plan and any subsequent Harvest Plan changes. • Any material amendments to the Harvest Plan must be documented and made available to the relevant council on request. If a council has previously requested a copy of the Harvest Plan, any subsequent material amendments must be forwarded to the council. When undertaking harvesting in the Orange Zone, a documented Erosion and Sediment Control Plan must be prepared in conjunction with the Harvest Plan. The Erosion and Sediment Control Plan must be prepared in accordance with the prescribed template. The Harvest Plan must include (but is not limited to): • mapping, environmental risk assessment and details of the management of risks relating to surface water bodies and their riparian areas, including indigenous vegetation; • a documented process for assessing and managing the effects and potential risks of slash entering water bodies appropriate to the scale and level of risk; • identify and clearly document slash storage sites, including using skid diagrams as part of the pre-harvesting operation hazard identification process (as appropriate); • slash management planning for perennial water bodies.	This rule seeks to ensure that foresters prepare a Harvest Plan to identify and consider the environmental risks associated with harvesting operations before starting harvesting operations.
Regional	**Ground disturbance outside riparian zones** During harvesting operations, avoid, mitigate or remedy actions that accelerate erosion and minimise the discharge of sediment to water bodies. • Harvest systems must be planned and located to achieve butt suspension wherever practicable. This condition does not apply to riparian zones. • All disturbed soil must be stabilised or contained so as to prevent movement of sediment into any water body or coastal water resulting in:	The removal of vegetation and the disturbance of the ground increase the risk of erosion and sediment discharge to waterways. These rules seek to minimise the: • amount of ground disturbance that occurs as part of harvesting and tracking operations;

	○ the diversion or damming of any river or stream; ○ the sedimentation of the bed of any surface water body; ○ significant adverse effects on aquatic habitat; ○ damage to downstream infrastructure, property or receiving environments. • All temporary harvest tracking must be stabilised with water controls or other means as required to minimise sediment discharge in stormwater before discharge to a perennial water body.	• effects of ground disturbance that does occur by controlling water flows and treating direct pathways to surface water bodies. These conditions apply to ground disturbance outside riparian zones. Operations within riparian zones are subject to stricter controls.
Regional	**Riparian disturbance** To limit riparian disturbance during harvesting, fell away from the water body or riparian zone, except where unsafe or impractical to do so. If unavoidable, fell trees directly across the water body for full-length extraction before de-limbing or heading. No harvesting machinery must operate within 5 m of perennial water bodies, except: • at water-body crossing points; • where slash removal is necessary; • where essential for assisting with directional falling and extraction of trees from the riparian margin. When harvesting within or across a riparian zone, all disturbed vegetation, soil or debris must be deposited or placed in a position where it will not enter any watercourse to the extent that it causes more than minor adverse effects associated with: • diversion, damming or erosion of any river or stream; or • degradation of any aquatic or riparian habitat; or • damage to downstream infrastructure, property or receiving environments. Must have full suspension if pulling across streams greater than 3 m in width.	Riparian zones are particularly sensitive to harvesting activities. This rule seeks to ensure that harvesting techniques are adopted that minimise riparian disturbance such as felling trees away from riparian zones and keeping machinery out of these zones (where practicable).
Regional	**Slash and debris management** Place slash onto stable ground, and manage slash levels so slash does not accumulate to levels that could cause collapse at skid sites. To prevent potential land collapse at skids, install and maintain water and sediment controls. Whenever safe and practicable to do so, remove potentially unstable slash that has the potential to mobilise under flood flows from water bodies, and: • block or dam stream flow; or • divert flow into stream banks in a way that is likely to cause erosion; or • damage downstream infrastructure, property or receiving environments; or • cause significant adverse effects on aquatic habitat.	This rule seeks to: • reduce the risk of slash entering waterways; • ensure slash that does enter waterways is removed if its presence is likely to affect the flow or damage habitat, property or the environment; • ensure the stability of land is not affected by slash accumulations.

Controlled	
Red Zone (that is not class 8e)	
Harvesting is a controlled activity and a consent is required in: • Green, Yellow and Orange zones where permitted conditions cannot be met; and • Red Zone that is not class 8e.	
Matters over which control is reserved	
If a consent is applied for, the council must grant the consent. Its ability to impose consent conditions is restricted to the matters listed below. In **Green, Yellow and Orange zones,** consent conditions are restricted to**:** • the effects that the specific permitted activity condition(s) that cannot be met was attempting to avoid. In **Red Zone that is not class 8e,** consent conditions are restricted to**:** • the Harvest Plan and Erosion and Sediment Control Plan; • the method of harvesting; • the extent of operations; • timing in relation to fish spawning; • measures to address effects on water quality and riparian vegetation; • measures to address soil erosion during and after harvesting.	These matters seek to ensure that consent conditions are imposed that directly relate to the permitted activity condition(s) that could not be met. These matters are considered sufficiently broad to reflect the full range of potential impacts from harvesting operations.
Restricted discretionary	
Red Zone that is class 8e	
Harvesting is a restricted discretionary activity and a consent is required in Red Zone that is class 8e. A consent is required, and the council may decline or grant the consent and impose conditions. However, the council's ability to grant or decline the consent and to impose conditions is restricted to the matters listed below. In **Red Zone that is class 8e,** consent conditions are restricted to: • the Harvest Plan and Erosion and Sediment Control Plan; • the method of harvesting; • the location, extent and timing of operations (including in relation to fish spawning); • effects on water quality and riparian vegetation; • soil erosion during and after harvesting; • the containment of slash.	
Discretionary N/A	

MECHANICAL LAND PREPARATION

Objective: To introduce a consistent set of mechanical land preparation controls that manage the risk identified below in a manner that is in line with good forest management practice.

Scope: Mechanical land preparation includes 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.

Note: *Earthworks and quarrying do not fall within the scope of mechanical land preparation. Earthworks and quarrying are defined activities and are subject to specific controls.*

Risks: The predominant risks are soil erosion, impacts on habitats and degradation of water quality from sediment run-off to water bodies.

Permitted

Green Zone	Yellow Zone	Orange Zone	Red Zone

Mechanical land preparation is permitted:

- **in Green and Yellow zones;**
- **in Orange and Red zones where the slope is less than 25 degrees;**
- **in Orange and Red zones where the slope is greater than 25 degrees but the technique used affects the subsoil (for example, deep downhill ripping or giant discing); and**
- **where the following permitted activity conditions are met.**

Jurisdiction	Permitted activity conditions	Rationale
Regional	The activity must not be undertaken in Orange and Red zones where the slope is greater than 25 degrees, if the technique being used affects the subsoil (for example, deep downhill ripping or giant discing).	These conditions seek to ensure that, where mechanical land preparation is undertaken in locations and in a manner that carries the highest risks of environmental degradation (that is, where it affects the subsoil in steep country), these risks are managed through consent conditions.
Regional	**Methods** Mechanical land preparation must be carried out parallel to the contour, where practical (except roller crushing and downhill ripping). • Where mechanical land preparation does not follow the contour, run-off control measures must be provided to prevent sediment run-off to waterways. • For downhill ripping, individual sections of ripped soil must not exceed 50 m in length. • No downhill ripping in soils must be undertaken where there is evidence of gully erosion and tunnel gully erosion.	These conditions seek to ensure that mechanical land preparation is undertaken in a manner that reduces the risk of disturbed areas channelling storm water and sediment flows towards surface water bodies.

<table>
<tr><td>Regional</td><td>Mechanical land preparation must not be undertaken within these setbacks:<table><tr><th>Setbacks</th><th>Bank full channel width</th><th colspan="2">Minimum horizontal distance</th></tr><tr><td rowspan="2">Perennial river or stream</td><td>< 3 m</td><td>5 m</td><td rowspan="2"></td></tr><tr><td>≥ 3 m</td><td>10 m</td></tr><tr><td colspan="2">Wetlands larger than 0.25 ha</td><td>5 m</td><td></td></tr><tr><td colspan="2">Lakes larger than 0.25 ha</td><td>10 m</td><td></td></tr><tr><td colspan="2">Coastal marine area</td><td>30 m</td><td></td></tr><tr><td colspan="2">Outstanding freshwater bodies (as defined in NPS-FM) or surface water bodies subject to a water conservation order.</td><td>10 m</td><td></td></tr></table></td><td>These conditions aim to establish appropriate setback distances from water bodies to reduce the risk of damage to riparian areas that have the potential to degrade water quality and in-stream habitats.</td></tr>
<tr><td colspan="3">Controlled – N/A</td></tr>
<tr><td colspan="3">Restricted discretionary</td></tr>
<tr><td>Orange (slope > 25 degrees)</td><td>Red (slope > 25 degrees)</td><td></td></tr>
<tr><td colspan="2">Mechanical land preparation is a restricted discretionary activity:
in Orange and Red zones where the slope is greater than 25 degrees and the technique used affects the subsoil (for example, deep downhill ripping or giant discing); or
where the permitted activity conditions cannot be met.
If a consent is applied for, the council may decline or grant the consent and impose consent conditions. However, the council’s ability to grant or decline the consent and to impose conditions is restricted to the matters listed below.</td><td></td></tr>
<tr><td colspan="2">Matters to which discretion is restricted</td><td></td></tr>
<tr><td colspan="2">Discretion must be restricted to the effects that the specific permitted activity condition(s) that could not be met was attempting to avoid. Where the activity occurs in Orange or Red Zones where the slope is greater than 25 degrees and the technique used affects the subsoil, discretion must be restricted to:
ecological and aquatic effects (including effects on water quality);
the location of work in relation to coastal marine areas, rivers, streams, lakes and wetlands;
erosion and sediment run-off;
the type of mechanical land preparation and method used;
changes to hydrological flows (for example, from V-blading).</td><td>These matters are considered sufficiently broad to reflect the full range of potential impacts from mechanical land preparation operations.</td></tr>
<tr><td colspan="3">Discretionary – N/A</td></tr>
</table>

PRUNING AND THINNING-TO-WASTE

Objective: To introduce a consistent set of pruning and thinning-to-waste controls that manage the risks identified below in a manner that is in line with good forest management practice.

Scope: Pruning involves the removal of branches from a tree. Thinning involves the selective removal of trees within a stand. Thinning operations must leave a minimum of 250 stems per hectare. Thinning operations that thin in excess of this limit are likely to have similar effects to harvesting operations and fall within the definition of harvesting. Thinning-to-waste operations leave the felled trees in situ. ***Note:*** *Production thinning involves the removal of thinned trees for sale and falls within the definition of harvesting.*

Risk: Pruning and thinning-to-waste typically have minor environmental effects limited to issues with where the pruned or thinned material is deposited. The deposition of pruned or thinned material, such as branches, young trees or other woody debris, into surface water bodies or where it has the potential to enter a surface water body is the primary risk, because it can have detrimental effects on water flow, water quality, aquatic life and, in extreme cases, property and infrastructure.

Permitted

Green Zone	Yellow Zone	Orange Zone	Red Zone

Pruning and thinning-to-waste are permitted in all zones, provided all permitted activity conditions are met.

Note: *Production thinning is considered Harvesting.*

Jurisdiction	Permitted activity conditions	Rationale
Regional	**Slash** Debris from pruning and thinning-to-waste must not be deposited in a perennial water body or where it may enter a perennial water body, if it has the potential to mobilise under flood flows and: • block or dam stream flow; or • divert flow into stream banks in a way that is likely to cause erosion; or • damage downstream infrastructure, property or receiving environments; or • cause significant adverse effects on aquatic habitat. Slash should be removed from a water body only if it is safe and practicable to do so.	This condition aims to ensure that slash and other debris is managed appropriately, particularly in areas adjacent to surface water bodies, so slash and other debris do not enter and damage these waterways or downstream infrastructure. This rule is intended to apply to flood flows up to a 10-year return period.

Controlled

Pruning and thinning-to-waste are controlled in all zones where permitted activity conditions are not met.
If a consent is applied for, the council must grant the consent and can impose consent conditions but only in relation to the matters listed below.

Matters over which control is reserved	
• aquatic effects; • effects on stream flow; • erosion; • potential effects on downstream infrastructure, property or receiving environments; • effects on aquatic habitat.	Matters of control are intended to be limited to the primary risk of pruning and thinning-to-waste operations; that is, damage to aquatic ecosystems.

Restricted discretionary

Discretionary

FORESTRY QUARRYING

Objective: To introduce a consistent set of forestry quarrying controls that manage the risks identified below in a manner that is in line with good forest management practice.

Scope: Forestry quarrying is the extraction of rock, sand or gravel for the formation of forest roads. These controls do not address noise, vibration, dust and vehicle issues associated with quarrying; councils retain their ability to address these matters. [***Advice note:*** *Scope includes the extraction of alluvial gravel outside river beds.*] Earthworks and mechanical land preparation do not fall within the scope of quarrying. Earthworks and mechanical land preparation are defined activities and are subject to specific controls.

Risks: Quarrying can have similar effects to those of earthworks activities in relation to soil and slope stability, water quality, landscape, and effects on cultural sites.

- These effects are usually related to erosion or the products of erosion (that is, sediment) and the impact sediment has on water bodies.
- Sediment has two main impacts: it can increase the turbidity of river water (decrease clarity), and it can clog riverbeds and downstream receiving environments such as estuaries and lakes. Both of these impacts affect the biological community and health of an ecosystem. In a Red Zone, where quarry material is likely to be located in rocky outcrops, the main risks relate to overburden disposal.

Permitted

Green Zone	Yellow Zone	Orange Zone	Red Zone (not susceptible to earthflow)	
Quarrying is permitted in all zones except Red Zone where the ESC identifies land as having the potential for severe or very severe earthflow or slump erosion, provided permitted activity conditions are met.				This seeks to ensure that, where land is susceptible to earthflow, the risks of quarrying activities can be managed through consent conditions that are appropriate for the specific site.

Jurisdiction	Permitted activity conditions	Rationale
District/ Regional	**Notice of commencement** District and regional councils must be notified at least 20 working days and no more than 60 working days before the first quarry operations start.	This rule seeks to ensure that relevant councils are notified in a timely manner of quarrying operations commencing, so that they are aware of operations occurring and can schedule monitoring programmes if necessary.
District	**Visibility** At the time of extraction, where a quarry is visible from an existing dwelling, an adjoining property under different ownership or a formed public road, no more than 5 000 m^3 of material must be quarried per five-year period per activity site.	This rule seeks to ensure that, where quarrying activities are likely to affect neighbouring properties, the effects are managed by limiting the magnitude of the quarry operations.
District	**Property setbacks** Unless written approval from the owner(s) and/or occupier(s) has been obtained: • no quarrying activity may be undertaken closer than 500 m to an existing dwelling under different ownership; • no excavated soil or overburden must be deposited within 20 m of an adjoining property under different ownership.	These conditions seek to ensure that the effects of quarrying on neighbouring properties are adequately managed.
Regional	**Regional setbacks** Quarrying must not be undertaken within 20 m of a surface water body.	This condition seeks to reduce the risks of: • sediment from ground disturbance activities entering surface water bodies;

		• riparian zones being disturbed or damaged by quarrying activities such as the operation of machinery.
Regional	**Fill or spoil** Excavated soil regolith and overburden of the quarry product must not be deposited: • within 20 m of a surface water body; • on the head of an active or relic earthflow or other mass movement feature, where the deposition of spoil could lead to reactivation or exacerbation of the earthflow or mass movement.	These conditions seek to reduce the risks of: • sediment entering surface water bodies from the deposition of fill or overburden; • the reactivation or exacerbation of earthflow or mass movement erosion.
District	Material must not be transported off the property on public roads.	This condition seeks to ensure that these controls capture only quarries that are being used for forestry related purpose; that is, for the construction of access roads and river crossings within a forest. It is intended that councils retain the ability to regulate general-purpose quarries.
Regional	**Restoration** Within two months of the quarry being deactivated, the land must be restored to a stable land form (including spoil, tailings and dump areas).	These conditions seek to ensure that adequate measures are taken following the completion of the quarrying activity to reduce any ongoing risks of slope instability or sedimentation of surface water bodies.
Regional	**Water table** Quarry depth must not go below the water table of any aquifer.	This condition seeks to reduce the risk of contamination of underground aquifers.
Regional	**Quarry Management Plan** • A Quarry Management Plan must be prepared. • Quarrying activities must be undertaken in accordance with the Quarry Management Plan that must be made available to the council on request at least 20 working days before operations start. The scope of a Quarry Management Plan must be matched to the scale and complexity of the operation. • Material amendments to the Quarry Management Plan must be provided to the relevant council. Material amendments are significant changes, such as the relocation of roads, landings, or the proposed controls to manage environment impacts. The Quarry Management Plan must include (but is not limited to): • a description of the nature, scale, timing and duration of activities including construction and stabilisation; • the erosion and sediment control measures to be used and indicative locations, including: ○ water run-off controls; ○ methods to prevent slumping of batters, cuts and side castings; ○ measures to maintain slope stability; ○ methods of sediment retention and control of sediment run-off; ○ methods to avoid effects on riparian margins and water bodies;	This condition seeks to ensure that the potential environmental risks of quarrying activities and necessary measures to manage these risks are identified before operations start.

	• heavy rainfall response and contingency measures; • maintenance and monitoring procedures; • methods to monitor achievement of the plan; • revegetation requirements.	
Controlled		
All zones except Red Zone (susceptible to earthflow)		
Quarrying is a controlled activity; • in all zones (except the Red Zone where the ESC identifies land as having the potential for severe or very severe earthflow or slump erosion); or • where any of the permitted activity conditions (except for property setbacks) cannot be met. If a consent is applied for, the council must grant the consent, and its ability to impose consent conditions is restricted to the following matters.		
Matters over which control is reserved		
The effects that the specific permitted activity condition(s) that could not be met was attempting to avoid.		Reserving control to this matter seeks to ensure that consent conditions are imposed that directly relate to the permitted activity condition(s) that could not be met.
Restricted discretionary		
Red Zone (susceptible to earthflow)		
Quarrying is restricted discretionary: • in all zones where property setback conditions cannot be met; • in a Red Zone where the ESC identifies land as having the potential for severe or very severe earthflow or slump erosion. If a consent is applied for, the council may decline or grant the consent and impose consent conditions. However, the council's ability to grant or decline the consent and to impose conditions is restricted to the matters listed below.		

Matters to which discretion is reserved	
Council discretion is reserved to: • the location and duration of works; • the disposal of fill and overburden; • the area and volume of earthworks; • the dimensions of cut and fill; • ecological and aquatic effects; • the method of stabilisation of earthworks; • the method of sediment retention and run-off storm water control; • effects on riparian vegetation; • measures to rehabilitate land; • effects on traffic and roading infrastructure.	These matters are considered sufficiently broad to reflect the full range of potential impacts from forestry quarrying.
Discretionary	

REPLANTING

Objective: To introduce a consistent set of replanting controls that manage the risks identified below in a manner that is in line with good forest management practice.

Scope: Replanting is 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.

Risk: The primary risk associated with replanting is the re-establishment of forest in inappropriate areas where subsequent forestry activities carry an increased risk of causing adverse effects.

Permitted

Green Zone	Yellow Zone	Orange Zone	Red Zone

Replanting is a permitted activity in all zones, provided all permitted activity conditions are met.

Jurisdiction	Permitted activity condition	Rationale
Regional	**Except where required by consent conditions, replanting must not occur within the following setbacks.**	Replanting setbacks from water bodies are the same as for afforestation. This control is to maintain setback distances throughout subsequent rotations. As with the afforestation setbacks, the aim is to establish appropriate setback distances from surface water bodies to reduce the risk of future operations such as harvesting or earthworks causing sedimentation or damage to riparian areas that have the potential to degrade water quality and in-stream habitats.

Setbacks	Bank full channel width	Minimum horizontal distance	
Perennial river or stream	**< 3 m**	**5 m**	Except where a smaller setback is required to meet the conditions of a regional pest management strategy
	≥ 3 m	**10 m**	
Wetlands larger than 0.25 ha		**5 m**	
Lakes larger than 0.25 ha		**10 m**	
Coastal marine area		**30 m**	
Outstanding freshwater bodies (as defined in the NPS-FM) or surface water bodies subject to water conservation orders.		**10 m**	

<table>
<tr><td>District</td><td>Replanting adjacent to significant natural areas (SNA)
When replanting immediately adjacent to indigenous vegetation identified, mapped or scheduled in a district or regional plan as an SNA (or similar), replanting must take place no closer than the stump line of the previous crop.</td><td>This condition seeks to ensure that, when replanting occurs directly adjacent to identified areas of significant indigenous vegetation, the replanting does not encroach further into these areas than the previous crop. The aim is to ensure that any existing buffers between the plantation crop and indigenous vegetation are maintained to reduce the risk of future forestry operation causing damage to adjacent indigenous vegetation when machinery is operating and trees are felled and recovered in close proximity.

Advice note: “SNA (or similar)” refers to an area identified in a regional policy statement, regional plan or district plan pursuant to section 6(c) of the Resource Mangement Act 1991.</td></tr>
<tr><td></td><td>Replanting using genetically modified tree stock is permitted where the tree stock has gained the appropriate approval for deployment from the Environmental Protection Authority (EPA) and is subject to conditions imposed by the EPA.</td><td>This condition recognises that the EPA is best placed to evaluate the risks of genetically modified organisms and that approval and conditions imposed under the EPA regime will be sufficient to ensure that any risks associated with the deployment of the tree stock are managed.</td></tr>
<tr><td colspan="3">Controlled</td></tr>
<tr><td>Green Zone</td><td>Yellow Zone</td><td>Orange Zone</td><td>Red Zone</td></tr>
<tr><td colspan="3">Replanting is a controlled activity in all zones where permitted activity conditions are not met.
If a consent is applied for, the council must grant the consent and can impose consent conditions relating to only the specific matters over which control is reserved.</td><td></td></tr>
<tr><td colspan="3">Matters to which control is reserved</td><td></td></tr>
<tr><td colspan="3">Control is reserved to:
• aquatic and terrestrial biodiversity effects;
• species and location of replanting;
• potential effects of future harvesting and associated earthworks activities on the adjacent surface water bodies or significant indigenous vegetation.

The consent must apply only to the area that could not be planted as a permitted activity.</td><td>The matters that a council’s control is limited to reflect the specific risks of replanting and subsequent forest management activities, specifically the effects on surface water bodies or indigenous vegetation, from the re-establishment of plantation forest cover.</td></tr>
<tr><td colspan="3">Restricted discretionary</td><td></td></tr>
<tr><td colspan="3">Discretionary</td><td></td></tr>
</table>

GENERAL CONDITIONS					
Permitted					
Green Zone		Yellow Zone	Orange Zone	Red Zone	
Jurisdiction	**Permitted conditions**				**Rationale**
	Notwithstanding specific activity rules, all forestry activities are permitted, provided the following conditions are met.				
District	**Archaeological** *Known archaeological sites* During afforestation, replanting, mechanical land preparation, harvesting, earthworks and quarrying activities, the modification or destruction of an archaeological site (as defined by the Heritage New Zealand Pouhere Taonga Act 2014) may occur only if it is carried out on the authority of and in accordance with the Heritage New Zealand Pouhere Taonga Act 2014. *Unrecorded archaeological sites* The following procedures apply to any archaeological site exposed or identified before or during plantation forestry activities: • All site works in the immediate vicinity of the discovery that will destroy, damage or modify the site must cease immediately. • The area must be secured to prevent further disturbance until relevant Heritage New Zealand Pouhere Taonga authorisation has been obtained. • Works must then be carried out in accordance with the authorisation.				The operation of machinery around archaeological sites carries risk. These conditions seek to ensure that the modification or destruction of archaeological sites is avoided by requiring adherence to the Heritage New Zealand Pouhere Taonga Act 2014.
Regional	**Fuel** During any plantation forestry activity there must be no refuelling of machinery within surface water bodies or storing of fuel or refuelling where it might enter a surface water body.				Fuel can result in significant damage to aquatic ecosystems if it enters water. This condition seeks to minimise the risk of fuel being discharged to water when machinery is refuelled.

District	**Vegetation clearance and disturbance** Indigenous vegetation may be damaged, destroyed or removed provided it: • has grown up under (or may have overtopped) managed forest species; or • is within an area of failed planting (within the last rotation); or • is within an area of regenerating cutover (that is, within five years of the harvest of the previous crop); or • is vegetation overgrowing a pre-existing access way, including an existing track or access way within an significant natural area (SNA) (or similar); or • is incidental damage to riparian vegetation that will readily recover within five years; or • is incidental damage to indigenous vegetation this is adjacent to plantation forest, including indigenous vegetation at the edge of an SNA (or similar) or along an existing track that will readily recover within five years.	Indigenous vegetation may provide habitat for indigenous fauna and may in itself be valuable. Some vegetation may establish quickly in existing forestry areas. In these cases, it is unlikely to be of outstanding habitat value. This condition seeks to avoid damage to significant vegetation while allowing forestry activity to continue where the activity is unlikely to have a significantly adverse effect on indigenous flora and fauna of an area. ***Advice note:*** *Councils retain the ability to be more stringent when indigenous vegetation clearance (other than the listed permitted clearance activities) occurs within areas of significant indigenous vegetation or significant habitat of indigenous fauna as identified in district or regional plans, including SNAs. For clarity, this ability to be more stringent does not apply to existing production forest areas mapped as significant indigenous vegetation due to boundary errors.* ***Advice note:*** *"SNA (or similar)" refers to an area identified in a regional policy statement, regional plan or district plan pursuant to section 6(c) of the Resource Management Act 1991.* *"Readily recover" refers to the recovery of the vegetation within the area.*
Regional	**Dust** Discharge of dust to air from activities undertaken on the site is a permitted activity, provided any nuisance dust is contained within the boundaries of the property or properties under the same ownership or under the same management.	Dust may create a nuisance to neighbouring land users. This condition seeks to ensure that dust is contained within the boundaries of a forestry site. Where this is not possible, resource consent will be required.
District	**Noise** The noise from forestry activities at the notional boundary of the nearest dwelling, where that dwelling is under different ownership, except where approval from the adjoining owner(s) has been obtained, does not exceed: • 55dBA (L eq) between 6 am and 10 pm; and • 40dBA (L eq) between 10 pm and 6 am;	Noise may create a nuisance to neighbouring land users in some cases. However, as forestry is a productive rural land use noise should be expected. This rule seeks to limit the effect of noise on neighbouring land users

	except forestry vehicles and machinery or equipment operated and maintained in accordance with the manufacturer's specifications in accordance with accepted best management practices. ***Note:*** *"Notional boundary" means, the legal boundary of the property on which any rural dwelling is located or a line 20 m from the dwelling, whichever point is closer to the dwelling.*	***Advice note:*** *All activities must comply with the requirements of section 16 of the RMA. Council may issue an abatement notice to operators if any noise is deemed unreasonable.*
District	**Nesting times** Where indigenous bird species with a classification of Nationally Critical or Nationally Endangered (from the Department of Conservation's *Conservation Status of New Zealand Birds, 2012* (Robertson et al, 2012)) are known to nest in areas where forestry operations are planned or under way, forest owners must have procedures to: • identify nest sites and the nesting season; • protect these sites from disturbance or undertake the activity outside of the nesting season.	Forestry activities can have a negative impact on the breeding success of birds when undertaken during breeding seasons. This condition seeks to reduce the effect on nesting birds of high conservation value by ensuring foresters have procedures to protect nesting sites.

Regional	**Spatial bundling**
	For the purpose of determining the activity status of a proposed activity in circumstances where an activity crosses multiple Erosion Susceptibility Classification (ESC) zones, any overlap into a higher ESC zone must be disregarded provided:
	• any discrete section of road within the highest ESC zone is equal to or less than 50 m (for earthworks);
	• the total area of the overlap is equal to or less than the smaller of (all other activities):
	  ○ 2 ha;
	  ○ 10% of the total activity area.
		Many forests are likely to cut across multiple ESC zones. Where most of a forest is in a low-risk zone and a small area of the forest is within a high-risk zone, the overall effect is likely to be low. This rule allows activities to be treated as permitted where a small overlap into a zone that requires resource consent exists.

Regional

Fish spawning

1. The bed of a permanently flowing river can be disturbed, provided all other activity-specific rules or consent conditions have been met, except where:
   a. the New Zealand Freshwater Fish Database indicates that one of the following species is present within 1 km of the reach of the stream where the disturbance is made; or
   b. where a catch has not been recorded in the New Zealand Freshwater Fish Database, the probability of one of the above species being present is greater than 0.5 under the River Environment Classification Predictive Fish Model 2014; and
   c. the disturbance occurs during the corresponding peak fish spawning period:

Species	Period
Redfin Bully	1 September to 31 October
Canterbury Galaxias	1 September to 31 October
Dwarf Galaxias	1 September to 31 October
Alpine Galaxias	1 September to 31 October
Lowland Longjaw Galaxias	1 September to 31 October
Dusky Galaxias	1 September to 31 October
Eldon's Galaxias	1 September to 31 October
Roundhead Galaxias	1 September to 31 October
Bignose Galaxias	1 September to 31 October
Taieri Flathead Galaxias	1 September to 31 October
Gollum Galaxias	1 September to 31 October
Upland Longjaw Galaxias	1 September to 31 October
Koaro	1 April to 31 May
Giant Kokopu	1 May to 30 June
Stokell's Smelt	1 December to 31 January
Atlantic Salmon	1 May to 30 June
Brook Char	1 May to 30 June
Brown Trout	1 May to 30 June
Chinook Salmon	1 April to 31 May
Rainbow Trout	1 April to 31 May
Sockeye Salmon	1 March to 31 March

2. For the purposes of this rule, the following activities are not considered to be bed disturbance:
   a. fording by vehicles across the wetted river bed where the number of axle movements is less than 20 per day; and
   b. partially suspended logs are hauled across the bed of a river less than 3m wide.
3. Where a freshwater fish survey has been undertaken by a suitably qualified person within the past 12 months at the site and the species has not been found, (1)(c) does not apply.

Forests often provide valuable habitat to indigenous and salmonid fish species. This rule seeks to minimise the adverse effect of forestry activities of fish breeding habitats. The species covered by this rule have a high conservation value and are sensitive to sediment and other disturbance during spawning periods.

Partial suspension: the butt of a log is lifted at least 1 m above the ground while the log is hauled to the landing while the small end of the log, or head of the tree, remains in contact with the ground.

Regional	**Slash Traps** Where slash cannot be safely or practicably removed from water bodies, and there is an assessed risk of slash mobilising and causing adverse effects, alternative measures, such as slash traps, being used to retain slash onsite as far as practicable. The installation and use of slash traps is permitted provided the following conditions are met. Constructed slash (debris) traps located across a water body being: • designed and constructed to a standard appropriate for likely debris quantity and types and water flow • located so as to avoid flooding of adjacent land, and in a position that allows access for maintenance • regularly monitored for the build-up of debris and within five working days following any rainfall event in the upstream catchment that is likely to mobilise debris • maintained free of accumulated debris – following storm events, accumulated debris being removed as soon as is practicable but no later than 20 working days of such accumulation occurring.	Slash traps can prevent slash and other debris from causing damage to aquatic environments and infrastructure. This conditions seeks to enable the construction and use of slash traps while ensuring that their adverse effects are avoided by locating them appropriately and maintaining them regularly.
Controlled		
All zones		
Notwithstanding specific activity rules, all forestry activities are controlled if all permitted activity conditions are met except for those relating to nuisance dust, noise or nesting times. If a consent is applied for, the council must grant the consent and its ability to impose consent conditions is restricted to the matters listed below.		
Matters to which control is reserved		
Control is restricted to: • the method of controlling nuisance dust discharged to air that is carried onto adjoining properties or public roads; • the timing and duration of activities that breach the permitted noise conditions; • the effect on the ecological integrity of a significant natural area; • measures to be undertaken to mitigate the effects on fauna.	Matters of control are intended to be limited to the primary risk of forestry activities on nuisance effects and effects on biodiversity.	
Restricted discretionary		
Discretionary		
All activities are discretionary where permitted activity conditions relating to archaeological sites, fuel, fish spawning, slash traps or indigenous vegetation disturbance are not met. If a consent is applied for, the council can decline or grant the consent and impose any consent conditions it deems appropriate.	Where the conditions for archaeological sites, fuel, fish spawning, slash traps and indigenous vegetation disturbance are not met, the council will have full discretion over resource consents.	

RIVER CROSSINGS	
Objective: To introduce a consistent set of river-crossing controls that manage the risks identified below in a manner that is in line with good forest management practice. **Scope:** River-crossing involves 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. **Risk:** River-crossing activities can have a range of effects on the bed of rivers or wetlands and the surrounding riparian areas if not managed appropriately. The primary risks include: • Sedimentation of the water column and bed of the river; • Disruption of fish passage; • Disturbance of fish spawning habitat; • Damage to the river bed and downstream infrastructure; • Human safety.	
General conditions	
River crossings are permitted provided: • all the applicable general conditions are met; and • permitted conditions specific to the type of crossing (temporary crossings, culverts, single-span bridges, drift-decks and fords) are also met. Any crossing existing as at [the date the proposed NES-PF comes into force] that was lawfully established, including under a rule in a plan or by a resource consent, and that meets the following permitted activity rules is permitted: • effects on other structures and users (permitted activity conditions 2, 3 and 4 below); • fish passage; • erosion and sediment discharge from use; • maintenance; • single culverts – specific conditions relating to single culverts (permitted activity condition 7 below); • battery culverts – specific conditions relating to battery culverts (permitted activity condition 4 below).	General conditions apply to all structures. These conditions must all be met for any crossing to be a permitted activity. Some general conditions continue to apply to controlled and restricted discretionary activities. Where this is the case, the controlled and restricted discretionary conditions will state which general conditions continue to apply.
Permitted	
General river-crossing conditions	**Rationale**
Notice of commencement The relevant regional council must be notified at least 20 working days and no more than 60 working days before the start of construction, placement or removal of any class of river crossing in a perennial stream (except for a temporary crossing). The council may waive, in writing, the requirement for notification for certain types of stream crossings or the time restrictions for notification, on the request of the forest manager.	This rule seeks to ensure that relevant councils are notified in a timely manner of river-crossing operations starting, so that they are aware of operations occurring and can schedule monitoring programmes if necessary.

Flow calculations To calculate the necessary culvert size, one or more of the following methods must be used to estimate flood flows: 1. the Rational Method; 2. TM61; 3. Pearson's (1989) Regional Method (for updates to this method, see Griffiths and McKerchar, 2012); 4. an alternative method approved by the relevant regional council. Records of the calculations must be available to the relevant council at the time of the notice of commencement.	This condition seeks to ensure that all culverts that are installed are large enough for flood waters to pass through the culvert without damage to the crossing structure. ***Advice note:*** *An online tool will be provided to assist foresters to undertake these calculations.*
Effects on other structures and users 1. The crossing does not alter the natural alignment of the river. 2. The crossing does not compromise the structural integrity or use of any other authorised structure or activity in the bed of the river or lake. 3. The crossing is constructed so that the structure or any part cannot break free and cause a blockage or erosion. 4. The crossing does not dam or divert water to cause flooding or ponding on any property owned or occupied by another person.	This condition will apply to all structures. It seeks to ensure that the activity does not result in environmental damage, such as erosion, damage to other infrastructure or damage to property
Fish passage 1. Except for any temporary crossing, the crossing provides for the upstream and downstream passage of fish in perennially flowing rivers, except where the relevant statutory fisheries manager advises the council otherwise.	This condition seeks to ensure that migration of freshwater fish species is not disrupted except where the fisheries manager stipulates that barriers should remain in place to protect sensitive freshwater ecosystems from predatory fish.
Contaminant discharges from the construction or removal of crossings 1. Those constructing or installing the crossing take all practicable steps to avoid placing organic matter (other than logs used for temporary crossings) or soil into a water body, or placing it in a position where it could readily enter or be carried into a water body. 2. Those constructing or installing the crossing take all practicable steps to avoid the discharge of sediment, including by minimising the disturbance of the bed. 3. No contaminants, other than sediment, are released to water from the activity. 4. Any concrete pouring avoids wet concrete or concrete ingredients coming into contact with flowing or standing water. 5. Sediment resulting from the construction, installation or removal of the crossing is not discharged for more than eight consecutive hours per structure into any river, lake or wetland. 6. Except where it is necessary for machinery to cross a river bed, all machinery is kept out of flowing or standing water. 7. Following the completion of construction or installation, all excess construction materials and equipment are removed from the bed of the water body within five working days.	This condition seeks to minimise the effects of the construction or maintenance of river crossings on the environment, including: • avoiding the sedimentation of water; • ensuring pollutants other than sediment (for example, cement) are not released into water.

Erosion and sediment discharge from use 1. The ongoing presence of the crossing for its normal operating use does not cause or induce scour erosion of the bed or erosion or instability of the banks of the surface water body and associated sedimentation. 2. Approaches to and abutments of river crossings are stabilised to prevent scour and sedimentation.	This condition seeks to minimise the ongoing discharge of sediment resulting from the ongoing use of the structure, including any erosion to the river bed as a result of water being redirected by the structure.
Maintenance 1. Except for any temporary crossing, the crossing is maintained to avoid aggradation or erosion of the bed of the water body. 2. Except for any temporary crossing, the crossing is maintained to meet its design specifications for flow and fish passage.	This condition seeks to ensure that the crossing is maintained to ensure that the ongoing impact of the structure on water and the bed of the river is minimised.
Placement 1. Except for any temporary crossing, no crossing is installed or constructed: a. in a wetland of more than 2 500 m2 or b. less than 500 m upstream of a dwelling that is within 15 m of a river bed over 3 m wide.	This condition seeks to ensure that permanent crossings are not installed: • on large wetlands, so seeks to protect the significant values of these wetlands; • close to existing dwellings where their presence may result in damage to the dwelling during flood events.
Crossing-specific conditions	
Temporary crossings – specific conditions relating to temporary crossings 1. Except as specified in bridges – condition 3: a. Any structure is in place two weeks or less. b. No excavation of the river banks or bed, unless a culvert is being used. c. Where logs are placed in the bed of a flowing water body, a 300 mm or larger culvert is first placed in the bed. d. All crossing materials are removed from the river bed within 24 hours of the completion of the operation for which the crossing was constructed or installed.	The following sections set specific design requirements for each type of crossing to ensure the design of the crossing does not result in: • damage to the environment as a result of sedimentation or bank erosion; • damage to downstream infrastructure; • damning of the crossing resulting in flooding or structural failure; • disruption of fish passage; • disruption to the navigability of rivers.
Single culverts – specific conditions relating to single culverts 1. There is only one culvert per crossing and it is of the appropriate length. 2. The culvert must pass a 5% annual exceedance probability (AEP) flood event of no greater than 5.5 m^3 per second, with no heading up. 3. The minimum culvert diameter is 450 mm. 4. The total height of the crossing crest is no more than 3.5 metres above the bed (measured from the inlet) and the fill depth and construction complies with the manufacturer's minimum height specifications. 5. The culvert invert is at least 100 mm below the level of the bed of a river or lake. 6. For rivers where the bank full bed width is more than 3 m, the river bed invert gradient is no greater than 6%, measured 50 m either side of the crossing. 7. The culvert inlet (entry point) and outlet (exit point) are protected against erosion. 8. Culvert approaches and fill are built from soils free of organic matter. The fill is constructed using successively compacted layers each up to 200 mm loose depth and compacted.	

Battery culverts – specific conditions relating to battery culverts 1. The contributing catchment is less than 500 ha. 2. The diameter of each culvert diameter is 450–800 mm. 3. The invert of at least one culvert pipe is at least 100mm below the level of the bed of a river or lake to carry base flow. 4. The culvert pipe inlets (entry point) and outlets (exit point) are protected against erosion. 5. For rivers where the bank full bed width is more than 3 m, the river bed invert gradient, measured 50 m either side of the crossing, is no greater than 6%. 6. The culvert is sized to pass annual average flow. It must be constructed to allow greater flows to pass over it without structural failure.	
Drift deck – specific conditions relating to drift decks 1. The contributing catchment is less than 500 ha. 2. The inlets and outlets are protected against erosion with designed protection works. 3. For rivers, the bank full bed width is more than 3 m and where the bed invert gradient, measured 50 m either side of the crossing, is greater than 6%, two discrete footings are used to embed the drift deck in the substrate to maintain the natural bed material under the structure.	
Ford – specific conditions relating to fording of streams 1. No ford is located in any river listed as a habitat for threatened indigenous fish or as an indigenous or sports fish spawning area in any relevant regional plan or water conservation order. 2. Storm water and truck wash from any road surface is intercepted, diverted and passed through a sediment treatment structure as close as practicable to but no closer than 5 m to the river and is positioned above the annual flood flow level. 3. Use of the ford does not cause conspicuous change in the visual clarity of the water beyond 100 m downstream of the ford for greater than one consecutive hour after use of the crossing.	
Specific conditions relating single-span bridges 1. Bridges (except temporary bridges) are constructed to allow the flood flow from a 2% AEP (1 in 50-year) event to pass under with a clearance of at least 700 mm above the design flood level. 2. Temporary bridges are: a. constructed to allow the flood flow from a 5% AEP (1 in 20-year) event and to enable the passage of bed material; b. removed within two years of construction. 3. Bridges are located so as to not decrease the natural active (bank-full) flow bed width by more than 10%. 4. The bridge abutments or foundations are constructed parallel to the channel alignment. 5. The crossing must maintain the ability for vessels to navigate a river.	

Controlled	
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 or contaminant discharge, is a controlled activity. The activity is a controlled activity if it cannot meet one or more of the applicable permitted activity conditions, but meets the applicable controlled activity conditions.	Where activities are unable to meet the permitted activity conditions they will require resource consent and will be regarded as controlled activities, provided the conditions in the controlled activity section are met.
Controlled activity conditions	**Rationale**
The activity is a controlled activity, provided the follow conditions are met: 1. the crossing is not a ford; 2. the crossing complies with the following permitted general crossings conditions: a. notice of commencement; b. effects on other structures and users (permitted activity conditions 2, 3 and 4 above); c. fish passage; d. contaminant discharge from construction and removal activities (permitted activity conditions 2, 3 and 4 above); e. erosion and sediment discharge from use; f. maintenance; g. placement.	
Culvert-specific conditions 1. The culvert must pass a 5% AEP flood event. 2. The total height of the crossing crest is no more than 4 m above the bed measured at the inlet end, and the culvert position complies with the manufacturer's minimum height specifications.	***Note:*** *Guidance will be provided on calculating annual exceedance probability (AEP).* This condition seeks to ensure the culvert is able to pass flood flows without heading up and reduce the risk of sediment and gravel entering water.
Bridge-specific conditions 1. The bridge crosses a river with a contributing catchment of less than 5 000 ha.	
Matters over which control is reserved	
For culverts, control is reserved over: 1. the timing of any disturbance of the bed of a surface water body in relation to adverse effects on aquatic ecosystems, including fisheries and indigenous biodiversity; 2. measures to avoid, remedy or mitigate the adverse effects of the structure on: a. property owned or occupied by another person, including flooding or ponding; b. provision for natural water flow and flood flows;	These matters are considered sufficiently broad to reflect the full range of potential impacts.

3. measures to minimise the duration and extent of bed disturbance; 4. measures to avoid or mitigate the risk of soil or debris being deposited or carried into the surface water body; 5. engineering design related to: a. the design flow of catchment above the culvert; b. culvert size and location; c. the number of culverts in the cross-sectional area of the river; d. the passage of debris and bed sediment in flood events exceeding the culvert design (bypass/overtop design); e. the structural stability of the culvert embankment; 6. measures to account for any adverse effects of the culvert arising from: a. prevailing bed gradient and flow power; b. fill height above the culvert for dam failure assessment; c. velocity of water from the culvert; d. design flood levels; e. soil type and geology; 7. construction standards (headwall, apron); 8. requirements for ongoing monitoring and maintenance of the culvert.	
For single-span bridges, control is reserved over: 1. the timing of any disturbance of the bed of a surface water body in relation to adverse effects on aquatic ecosystems, including indigenous biodiversity; 2. measures to account for: a. prevailing slope stability (including local stability of approaches and abutments); b. soffit height above the watercourse; c. design flood levels; d. location, so as to not decrease the natural active (bank-full) bed width by more than 10%; e. soil type and geology; 3. erosion protection works; 4. location of the bridge; 5. requirements for ongoing monitoring and maintenance of the bridge, including removal of structure if damaged or it becomes redundant; 6. matters affecting navigation in navigable rivers and lakes.	These matters are considered sufficiently broad to reflect the full range of potential impacts.
Restricted discretionary - River crossings are a restricted discretionary activity if they are not provided for as permitted or controlled	
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 or contaminant discharge is a restricted discretionary activity, if it does not meet any of the applicable permitted or controlled activity conditions but it does meet the restricted discretionary activity conditions.	Where the controlled activity conditions cannot be met, consent is required and the activity will be regarded as a restricted discretionary activity, provided the conditions in this section are met.
The crossing complies with permitted general crossings conditions for: 1. notice of commencement;	

2. effect on structures and users (permitted activity conditions 2 and 3 above); 3. contaminant discharge from construction activities (permitted activity conditions 1 and 2 above); 4. erosion and sediment discharge from use; 5. maintenance; 6. placement.	
Matters over which discretion is restricted	
Consent may be granted or declined and conditions imposed, in respect of only the following matters to which discretion is restricted. **Culverts, drift decks and fords:** 1. aspects of engineering relating to characteristics of the site of the crossing, the design, construction or installation of the crossing, to avoid: a. causing flooding or ponding on any property owned or occupied by another person; b. altering the natural course of the river; c. causing or inducing erosion of the bed or instability of the banks of the surface water body; d. causing instability of the structure and approaches and obstructions to the passage of debris and bed sediment in an event exceeding the crossing design (such as bypass/overtop design), including the: i. number and capacity of culverts, where fill height is greater than 2.5 m; ii. design flood level and design of protection works and upstream ramp for **drift decks**; e. compromising the structural integrity or use of any other authorised structure or activity in the bed of the river or lake, including structures and activities downstream of the crossing, that are at risk if the crossing fails, including the composition and strength of the culvert embankment; f. heading up culverts in lesser events than 2% AEP; g. affecting navigation in navigable rivers and lakes; 2. measures to: a. minimise impacts on water quality, including from the release of sediment from the disturbance of the bed of the river, and avoidance of run-off from pouring of concrete and impediments to bed load sediment transport; b. avoid or mitigate the deposition of soil or other debris in the surface water body, or where it could readily enter or be carried into a water body; c. minimise the duration and extent of bed disturbance; d. avoid, remedy or mitigate the adverse effects of the structure on: i. erosion or land instability, including erosion protection works; ii. natural water flow and flood flows; iii. the permanent passage of fish; iv. aquatic ecosystems, including indigenous biodiversity; e. maintain the structure, including removal of accumulated debris. 3. monitoring requirements.	Consent may be granted or declined and conditions imposed, in respect of only the following matters to which discretion is restricted. These matters are considered sufficiently broad to reflect the full range of potential impacts. These matters are considered sufficiently broad to reflect the full range of potential impacts.
Discretionary – Crossings are a discretionary activity if they do not comply with any applicable restricted discretionary condition	

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 or contaminant discharge is a discretionary activity, if it does not comply with any applicable permitted, controlled, or restricted discretionary condition. Consent may be granted or declined and conditions imposed.	Where the restricted discretionary conditions cannot be met, the consenting authority will have full discretion over whether consent may be granted.

Matters that are out of scope of the proposed NES-PF

Activities associated with or undertaken in plantation forests	Rationale for matters being left out of scope
Agrichemical use	These activities are not universally undertaken as part of forestry operations, so greater national consistency in relation to these activities would not provide significant benefits.
Burning	
Gravel extraction from the beds of rivers	
Milling activities and processing of timber	Timber-processing facilities have a variety of effects that are quite distinct from the effects of growing and harvesting a forest.
Use and development of land that has the potential to be affected by contaminants in soil	This is controlled by the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health.
Effects that may arise from forestry activities	
Water yield: Catchments are identified in a district or regional plan for the management of water yield (including ground water) for the purposes of achieving a desired flow or water supply.	Afforestation can have an impact on total water yield and low flows in low-to-moderate rainfall areas (that is, less than 1,200 mm per year). Variability means that planning controls may be required for water-sensitive catchments. For this reason, it is intended that regional councils retain the ability to manage afforestation in catchments that have been assessed as being water sensitive.
Nuisance issues: There are nuisance issues, including, vibration, vehicle movements and road damage.	Nuisance issues are often site-specific and controls are best determined at a local level. Traffic movement and roading issues also have implications under the Local Government Act 2012 and are best addressed at a local level.
Infrastructure: Effects on network utility infrastructure is identified by district councils as needing setbacks for safety or function reasons.	The effects of forestry on network infrastructure, particularly health and safety issues, should be managed at a local level to account for local circumstances.

Risks that the presence of forests may exacerbate	
Fire risk: Forestry increases the fuel load available to wild fires in rural areas, which can aggravate the effects of a fire if it enters a plantation forest. Most of these effects will be within the forest itself, but, in some circumstances, forestry could aid the spread of fire to urban areas and areas of indigenous forest, national parks, reserves or conservation areas.	Fire risk is normally season- and site-specific and depends on the nature of the surrounding environment (for example, if there are houses or communities near a plantation forest). In these cases, councils would retain the ability to manage these risks as they deem appropriate.
Natural hazards: Natural hazard areas mapped in regional or district plans.	Establishing a plantation forest in an area susceptible to natural hazards, such as flooding, coastal hazard or and streambed erosion may not always be appropriate. It is difficult to determine the appropriateness of afforestation in such areas on a national scale, so councils retain the ability to manage these issues as they deem necessary.

Matters where councils can apply more stringent rules

Ability to be more stringent	Rationale
Coastal marine area: Setbacks from the coastal marine area.	In many locations, the coastal marine area has important values, such as landscape and habitat values. The coastal marine area also has many issues associated with it, such as coastal hazards. In some cases, rules for appropriate setbacks are more appropriately determined at a local or regional level. Having this issue in the "ability to be more stringent" list also allows for alignment with the New Zealand Coastal Policy Statement.
Geothermal and karst: Geothermal and karst protection areas that are mapped and regulated in a district or regional plan.	Some regions (for example, Waikato) have delicate geothermal areas that need careful land management to prevent damaging or destroying these areas. Because management regimes are likely to require unique techniques, councils are considered to be in the best position to establish rules that reflect the local situation. There is also potential for forestry operations to affect or be affected by karst land forms.
Heritage values: Places and areas of known cultural or heritage value identified in regional or district plans including wāhi tapu and sites of significance to Māori but not currently covered by the archaeological authority provisions of the Heritage New Zealand Pouhere Taonga Act 2014.	This was developed in accordance with advice from the Ministry of Culture and Heritage and the Historic Places Trust. It provides protection for values that are not directly protected under the Heritage New Zealand Pouhere Taonga Act 2014. It does not refer to iwi management plans as these must be taken into account in regional or district plans.
Significant natural areas: Greater stringency is allowed in relation to designated (mapped) areas of significant indigenous vegetation and significant habitats of indigenous fauna as identified in a regional policy statement, regional plan or district plan pursuant to section 6(c) of the Resource Management Act 1991 (RMA). For the avoidance of doubt, this excludes damage, destruction or removal of vegetation that: • has grown up under (or may have overtopped) managed forest species; or • is within an area of failed planting or windthrow (within the last rotation); or • is within an area of regenerating cutover (within five years of the harvest of the previous crop); or • vegetation overgrowing a pre-existing access way, including an existing track or access way within an SNA (or similar); or • is incidental damage to riparian vegetation that will readily recover within five years; or • is incidental damage to indigenous vegetation that is adjacent to plantation forest, including indigenous	Indigenous vegetation and habitats of indigenous fauna are sensitive to forestry activities, such as harvesting. Also, in some cases, plantation forests can be a refuge and habitat during a forest's growth period. Under the proposal, councils are given the opportunity to apply more stringent rules in their plans for natural areas identified in plans as being significant. This would allow councils to consider integrated species protection and the maintenance of ecological corridors, among other things. In some cases, there will be valuable indigenous vegetation that has not been specifically classified as "significant" in plans. Setting levels for the clearance and conversion of such indigenous vegetation for plantation forestry activities is most appropriately determined at a local level, as values, including habitat values, vary from case to case.

Ability to be more stringent	Rationale
vegetation at the edge of an SNA (or similar) or along an existing track that will readily recover within five years.	***Advice note:*** *Temporary edge damage to SNAs that are likely to readily recover is permitted. The ability to be more stringent should not apply to this.*
Outstanding freshwater bodies (as defined in the National Policy Statement for Freshwater Management 2014 as "those water bodies identified in a regional policy statement or regional plan as having outstanding values, including ecological, landscape, recreational and spiritual values)**:** Setbacks from outstanding freshwater bodies identified in a regional policy statement, regional plan or district plan.	It is considered appropriate that setbacks from significant wetlands, rivers or lakes will be established at a council level, because the appropriate distance will depend on the water body in question.
Outstanding natural features and landscapes: Afforestation within an outstanding natural feature and landscape area as identified in district or regional plans pursuant to section 6(b) of the RMA.	Particular areas are sensitive to the landscape and visual impacts of new plantation forests, subsequent harvesting and earthworks. It is proposed that councils be given the flexibility to apply more stringent rules in relation to outstanding natural features (including landforms) and landscape areas that are identified in plans.
Shallow aquifers: Greater stringency is allowed in relation to quarrying activities where the activity occurs over a shallow aquifer (less than 30 m below ground level) within a drinking water protection zone identified in a regional plan.	Some councils have developed rules that manage the risks to the groundwater systems, particularly shallow aquifers, in that region from quarrying activities. Given the complexity of groundwater systems, it is appropriate for councils to retain the ability to manage this issue.

Appendix 4: Summary of issues raised during previous consultation and how they have been addressed

Issue	Previous submitter comments	Current state
Problem or objective	Submissions were split on whether the problem statement was accurate. Some felt the statement was too narrow or that it did not exist. Many submitted that a greater environmental outcome focus is needed to meet the sustainable management purpose under the Resource Management Act 1991 (RMA).	The proposal addresses the problems associated with unwarranted variation in the way forestry activities are controlled through regional and district plans. In particular, it seeks to address the operational uncertainty and the risk of sub-optimal environmental outcomes that exists under the status quo. See section 2.
Options	Submissions were split on whether a national environmental standard (NES) is the most appropriate solution to the problem. Most felt it was, but some submitters felt the NES for plantation forestry (NES-PF) would fail to meet the stated objective or purpose of the RMA. Some submitters preferred the status quo, which allow councils and foresters to develop their own solutions to local issues, and felt that a one size fits all regulatory approach was inappropriate. Others believed an NES-PF would increase regulation without achieving the stated outcomes of consistency and certainty (for differing reasons).	With the assistance of the stakeholder working group, the Ministry for Primary Industries (MPI) evaluated 18 regulatory and non-regulatory solutions to address the problem. The NES-PF was identified as the option that would best meet the stated objectives. The proposed NES-PF would also be supported by several non-regulatory tools (such as guidance and training) to ensure effective implementation. See section 4.2 and Appendix 5 (regulatory and non-regulatory options evaluated).
Permitted baseline	Submitters were concerned about the concept of a permitted baseline, which would arise if the effects of other land use activities were disregarded as a result of a less stringent approach to permitted activities under the NES-PF. Submissions were split between the view that an NES-PF should cover only forestry-specific activities and that it should cover all activities that relate to forestry. Many suggested a cost-benefit analysis should be undertaken to outline potential implications the NES-PF might have on the permitted baseline.	The current proposal contains draft rules (see Appendix 3) for new permitted activities, which may result in an increased ability for decision makers to apply a permitted baseline test when considering proposed activities. After analysis, MPI considers that this does not present a significant risk. This is because the appropriate classification of the scope of the NES and conditions on permitted activities limit the applicability of the test to non-forestry activities. Furthermore, sections 95D(b) and 95E(2)(a) of the RMA, as well as case law, provide discretion and limitations around whether and how a decision maker applies a permitted baseline test.

Issue	Previous submitter comments	Current state
Scope	Some submitters felt that associated activities such as agrichemical use and burning should be covered in the NES-PF. They felt that leaving fire risk and removal of infrastructure out of scope would worsen the status quo and increase safety risks relating to these activities. Submitters also thought various other activities should be outside the scope of the NES-PF.	MPI, with the working group, considered the issue of which activities should be in and out of scope. The proposed scope aims to provide national consistency in relation to the main activities in the forestry life cycle, while allowing local authorities to retain the ability to manage more-generic activities, effects or risks arising from forestry and matters that are more appropriate to be dealt with at a local or regional level. See section 3.5.2.
Ability to be more stringent	Submitters commented on various activities that should be removed from the 'ability to be more stringent' list. Many submitters thought too many items were in the list. Many foresters believed the ability to be more stringent needs to be further limited, such as only where there is likely to be a significant adverse effect on a significant environment or where the effects will be "more than minor".	MPI acknowledges that in some circumstances local authorities should retain their ability to manage activities because of unique environmental, social or cultural factors. MPI, with the working group, worked through the matters where a more stringent standard than the NES might be required. It is considered that the revised list of matters where councils may be more stringent strikes an appropriate balance between achieving greater national consistency and allowing rules to be set locally to manage unique environmental, social or cultural factors. See section 3.5.3.
Status quo	Some submitters felt the NES would be more stringent than the status quo, while others thought it would be more lenient. Some felt there had not been a balanced approach. The Review of Activity Rules (ROAR) analysis was complimented, though some commenters noted that the data used will quickly become out of date and does not specifically pinpoint the potential implications that the NES may have on specific rules in areas.	Additional analysis by MPI and the working group, a revised cost-benefit analysis and feedback from stakeholders, it is now considered that, across the board, the NES is slightly more stringent than the status quo. This will vary slightly by location, depending on the rules that are currently in place under district and regional plans.
Implementation	Submitters raised issues about the interpretation and implementation of the proposed NES-PF. These include plan changes and monitoring/compliance of the standards. Submitters highlighted that it is unclear what implementation plan exists for councils and foresters to adjust to the NES-PF once in place and what resources will be available.	MPI recognises that implementation is critical to policy goals being achieved. Therefore, MPI is planning a comprehensive implementation programme including providing training and guidance about the NES-PF to a range of groups. See section 7.

Issue	Previous submitter comments	Current state
Cost-benefit	Some submitters contend that the NES-PF will increase costs for councils and industry. There was also concern over increased environmental costs plus concern over increased compliance costs for smaller players.	The cost-benefit analysis was updated based on changes to the proposed rules and changes in the status quo. The results show a net benefit excluding quantification of environmental effects. See section 3.3.
Bundling	Submitters were concerned that when the activity status of different activities under one proposal differs, the entire proposal may be assessed against the most stringent activity status, a process known as "bundling". Foresters and councils alike requested definitive statements that activity and spatial bundling would not be an issue under the NES-PF.	MPI has analysed the bundling issues and will ensure rules are drafted in a manner that provides clarity around the scope and effect of each of the eight forestry activities to avoid inappropriate bundling.
Definitions	Submitters raised numerous concerns that definitions used in the draft rules were inconsistent in legal and planning terms. For example, "best practical option", "earthworks" and "plantation forestry".	Definitions have been developed for many key terms in the proposed standard (see Glossary). Any undefined terms used in the standard will be refined during the drafting stage with the Parliamentary Council Office.
Climate change	Submitters thought land owners would have unacceptable liabilities under the New Zealand Emissions Trading Scheme. They thought there should be an exemption for liabilities where land owners have no control over the decision to replant (because of, for example, setback requirements).	The Climate Change Response Act 2002 was amended in 2012 so that liabilities would no longer be incurred if land were required to remain cleared to implement best practice forest management (such as setbacks). See section 179A(1) of that Act. Therefore, no additional Emissions Trading Scheme liabilities will be incurred as a result of setback requirements.
Front loading of conditions	Submitters held concerns that the front loading of conditions in high erosion zones would deter afforestation.	Following careful consideration by MPI and the stakeholder working group, a consent for afforestation would be required only for red zone land (though if this land is in Land Overlay 3A of the Gisborne District Council Combined Regional Land and District Plan 2006, MPI Regional Scale Target Land, or land that is included in a recognised regional council erosion management scheme it would not require consent). This attempts to strike an appropriate balance between encouraging afforestation to manage erosion while ensuring long-term erosion risks of forestry activities in the area are effectively managed.

Issue	Previous submitter comments	Current state
Water issues	Non-foresters noted the importance of councils having the ability to be more stringent in coastal areas and on water quality. Further concerns were raised of overlap or undermining of National Policy Statement for Freshwater Management.	Under the proposed NES, councils have now retained the ability to apply more stringent rules to setbacks from coastal marine areas and in specific or agreed cases where fresh water quality objectives cannot be met.
Wilding trees	Submitters accepted the inclusion of a wilding risk calculator, but noted that this tool would require careful consideration to suitably reflect the wilding risk throughout the country.	MPI has continued to support development of the wilding calculator – the Wilding Spread-Risk Calculator – which will be incorporated into the NES-PF by reference. Guidance will also be provided to support the use of this tool. See section 3.5.3.
Mechanical land preparation	Submitters thought there should be a limit on the type of mechanical land preparation that can occur as a permitted activity.	MPI has continued to address mechanical land preparation rules and conditions with the support of the working group. Mechanical land preparation remains a restricted discretionary activity for orange and red zone land with more than a 25 degree slope where the technique used affects the subsoil (that is, deep downhill ripping or giant discing).
River crossings	Submitters, including councils and non-governmental organisations, thought river crossings should have a stricter activity status and conditions.	MPI, with the working group, reassessed the draft river crossings rules with appropriate changes being made to some permitted activity conditions, for example, the minimum culvert size has increased to 450 mm diameter.
Erosion Susceptibility Classification (ESC)	Many submitters noted that the ESC inputs and methodology needed to be updated, and a mechanism for review developed to ensure the data used is correct and reliable.	MPI engaged Landcare Research to review the ESC and reclassify any misclassified land and to establish a process by which changes to the classification might be managed in the future, including how to incorporate updates as a result of mapping at a more refined scale.
Permitted activity monitoring	Foresters and councils alike requested better clarity and assurance on where the costs would fall for monitoring permitted activities.	MPI analysed the implications of a permitted activity regime for foresters and councils. Many councils currently operate permitted activity regimes for forestry activities. Under the NES, there will be an estimated 10% increase in permitted activity monitoring requirements. This will apply to areas of lower environmental risk where lower level of monitoring would be expected.

Issue	Previous submitter comments	Current state
Setback conditions	Setback conditions across the activities were critiqued as needing modification. In general, needing to be increased, in the view of individuals, non-governmental organisations and non-foresters. Most submitters noted the current conditions were inadequate and impractical.	Following further engagement on the issue and analysis by the working group, certain setback conditions have been changed to improve the practicality and effectiveness of the rules.
Stakeholder representation	Some non-foresters and councils were critical of the lack of representation on the working group. In particular, farm foresters, power companies, and federated farmers.	MPI's working group was carefully put together to represent a variety of interests associated with a proposed NES-PF; some people chose not to participate because of the time commitment involved. For those outside the working group, informal engagement and country-wide workshops provided opportunities to share information and seek feedback.

Issue	Previous submitter comments	Current state
Iwi concerns	Submitters expressed concerns relating to: • the belief that the NES-PF reduces environmental protection and need for consultation with the community; • the NES-PF does not provide adequate protection for sites that are not officially designated as heritage sites, such as wāhi tapu, that hold significant value; • Māori decision making should be important in resource and environmental management decisions because iwi desire greater autonomy and control over taonga tuku iho; and furthermore, iwi management plans could be at risk of being undermined by the NES-PF; • not enough significance is given to importance of waterways to iwi and how an NES-PF could affect these values.	The current NES-PF draft rules were designed to achieve good environmental outcomes through the codification of good forestry practices, supported by environmental risk assessment tools (for example, ESC). Councils will have the ability to apply more stringent rules than the NES in relation to several matters, including areas of heritage value, such as wāhi tapu, which are identified in regional or district plans. This provides a mechanism to protect these values. See section 3.5.3. Forestry activities around wāhi tapu that meet the definition of archaeological sites under the Heritage New Zealand Pouhere Taonga Act 2014 may occur only if carried out on the authority of and in accordance with tat Act. If sites are identified or exposed before or during forestry activities, then strict procedural rules must be followed. The NES-PF does not alter RMA provisions for iwi-council engagement and the requirement to take iwi management plans into account. The NES-PF is being developed to support effective implementation and achievement of iwi and community objectives under the NPS-FM.

Appendix 5: Options evaluated

	Possible solution	Description	First order criteria	Second order criteria	Comple-mentary
Regulatory	National environmental standard (NES)	The Resource Management Act 1991 (RMA) enables the Minister for the Environment to prepare NESs. These have the force of a regulation and are binding on local authorities.	✓	✓	N/A
	National templates	The 2013 Resource Management Reform Proposals included an initiative to develop national planning templates for district and regional plans. The templates would standardise planning documents, while continuing to allow specific local issues to be addressed. This option is still under development.	✓	×	Yes
	Ministerially directed plan changes	Under the RMA, the Minister for the Environment may direct a council or authority to prepare a plan change. This must relate to council functions under sections 30 and 31 of the RMA.	✓	×	No
	National policy statements (NPS)	The RMA enables the Minister for the Environment to issue NPSs on matters relevant to achieving the sustainable management of resources. Local authorities are required to amend their plans to give effect to an NPS.	-	×	No
Non-regulatory	Improved erosion mapping	Increasing the accuracy of the mapping data that councils use, so council staff can more accurately assess areas of high erosion and sediment risk.	×	✓	Yes
	Planning guidance and guidelines	Planning guidance and guidelines assist councils and industry to work through land management issues. They are a source of information and best practice.	×	-	Yes
	Industry standards (best management practices)	A national industry standard for plantation forestry is already available and incorporates “best environmental practice” for the key aspects of forestry operations. It is currently a key reference tool for councils and those working in the sector.	×	-	Yes
	Standards NZ standards	A voluntary standard that may be applied to any forest being managed for the production of forest products.	×	-	No
	International standards	A voluntary tool for organisations looking to identify and control environmental impacts and environmental performance.	×	-	No

	Possible solution	Description	First order criteria	Second order criteria	Comple-mentary
Non-regulatory	Memorandum of understanding (MoU)	An MoU between local authorities and the forestry sector to agree approaches to forestry management; a territorial authority and a regional council on application of certain functions; or a central government agency and one or more local authorities. An MoU is not legally binding.	×	-	No
	Additional training of council staff	Professional development courses in forestry practices and management to build knowledge of council planning teams.	×	×	Yes
	Case studies, trials and field days	Preparation of planning case studies, the development of trials to demonstrate good practice and the provision of field days to improve council staff knowledge of forestry practices.	×	×	Yes
	Improved communication between councils	Mechanisms such as forums, workshops and strategic planning sessions to encourage inter-council dialogue.	×	×	Yes
	National accredited operator system	This could be developed as a stand-alone scheme. Operators would lose their accreditation if audits showed that standards were not being met.	×	×	Yes
	Accords	A voluntary agreement between two or more parties, setting out a series of objectives and principles that the signatories commit to working towards.	×	×	No
	Government statements and strategies	To provide direction on the overall objectives that a government is seeking to achieve. They are frequently referenced in the development of new regulations and set the context for reviews and new policies.	×	×	No
Regulatory	Certificates of compliance (CoC)	The RMA allows land owners to request a CoC if an activity can be undertaken lawfully without resource consent.	×	×	No
	Transfer of responsibilities	The RMA enables a local authority to transfer one or more of its functions, powers or duties to another public authority. This could address concerns about overlapping responsibilities.	×	×	No
	Status quo	Do nothing – no policy intervention. Monitor the status quo.	×	×	No

Key: ✓= meets; - = partially meets, × = does not meet

Complementary = options that could be complementary to an NES-PF

References

Basher, L R. (2013) Erosion processes and their control in New Zealand. In Dymond, J R ed. *Ecosystem services in New Zealand – conditions and trends.* Lincoln: Manaaki Whenua Press.

Brockerhoff, E G; Jactel, H; Parrotta, J A; Quine, C P; Sayer, J (2008) Plantation forests and biodiversity: Oxymoron or opportunity? *Biodiversity and Conservation* 17, 925–951.

Brown and Pemberton Planning Group (2010a) *Review of 12 regional council and 4 unitary authority RMA plan provisions relating to plantation forestry.* Report prepared for the Ministry for the Environment.

Brown and Pemberton Planning Group (2010b). *Review of 23 district council RMA plan provisions relating to plantation forestry.* Report prepared for the Ministry for the Environment.

Covec Ltd and Catalyst R&D (2010) *Preliminary cost benefit analysis: proposed NES for plantation forestry.* Prepared for the Ministry for the Environment.

Fahey, B D; Marden, M (2000) Sediment yields from a forested and a pasture catchment, coastal Hawke's Bay, North Island, New Zealand. *Journal of Hydrology (New Zealand)* 39: 49–63.

Griffiths, G A; McKerchar, A I (2012) Estimation of mean annual flood in New Zealand. *Journal of Hydrology (New Zealand)* 51(2): 111–120.

MfE (2010) *Proposed national environmental standard for plantation forestry: discussion Document.* Wellington: Ministry for the Environment.

MfE (2011) *Proposed national environmental standard for plantation forestry: information booklet on the revised proposal.* Wellington: Ministry for the Environment.

MPI (2015) *Situation and outlook for our primary industries.* Wellington: Ministry for Primary Industries

NZFOA (New Zealand Forest Owners Association) (2007) *New Zealand Environmental Code of Practice for Plantation Forestry. New Zealand:* FITEC.

NZFOA (New Zealand Forest Owners Association) (2012) *New Zealand forest road engineering manual.* Wellington: New Zealand Forest Owners Association.

NZIER (New Zealand Institute of Economic Research) (2011) *Plantation forestry cost benefit appraisal: assessment of proposed National Environmental Standards. Report to the Ministry for the Environment.*

NZIER (New Zealand Institute of Economic Research) (2012) *Plantation forestry cost benefit appraisal: revised assessment of proposed National Environmental Standards.* Report to the Ministry for the Environment.

NZIER (New Zealand Institute of Economic Research) (2014) *Plantation forestry economic analysis: A further revised assessment of proposed National Environmental Standards.* Report to the Ministry for Primary Industries.

O'Loughlin, C (2005) The protective role of trees in soil conservation. *New Zealand Journal of Forestry* 49(4): 9–15.

Pawson, S (2005) Natives in a pine forest. *New Zealand Geographic* 78: 79–93.

Pendly, M; Bloomberg, M; Visser, R (2015) Investigating the regional variation in rules and best practices for forestry in New Zealand. *Australasian Journal of Environmental Management.* DOI: 10.1080/14486563.2014.991768.

Robertson, H A; Dowding, J E; Elliott, G P; Hitchmough, R A; Miskelly, C M; O'Donnell, C F J; Powlesland, R G; Sagar, P M; Scofield, R P; Taylor, G A (2013) *Conservation status of New Zealand Birds, 2012.* New Zealand Threat Classification Series 4. Wellington: Department of Conservation.

Seaton, R; Holland, J D; Minot, E O; Springett, B P (2009) Breeding success of New Zealand falcons *(Falconovaeseelandiae)* in a pine plantation. *New Zealand Journal of Ecology* 33: 32–39.

Scion Ltd (2015) *Environmental impact assessment of the proposed National Environmental Standard for Plantation Forestry.* Report prepared for the Ministry for Primary Industries.

Yao, R T; Barry, L E; Wakelin, S J; Harrison, D R; Magnard, L; Payn, T W (2013) Planted forests. *Ecosystem Services in New Zealand: conditions and Trends.* Lincoln, New Zealand: Manaaki Whenua Press, pp 62–78.