



# 1 Guidance on administering certain NES-PF requirements and conditions

The NES-PF includes a mixture of ‘performance based’ (i.e. outcome focused) conditions and ‘process based’ (i.e. procedural focused) conditions. These conditions work together so that councils and foresters understand the practical considerations and management measures that need to be undertaken under the NES-PF to achieve good environmental outcomes. Figure 1 demonstrates the relationship between the performance and process-based conditions in the NES-PF.

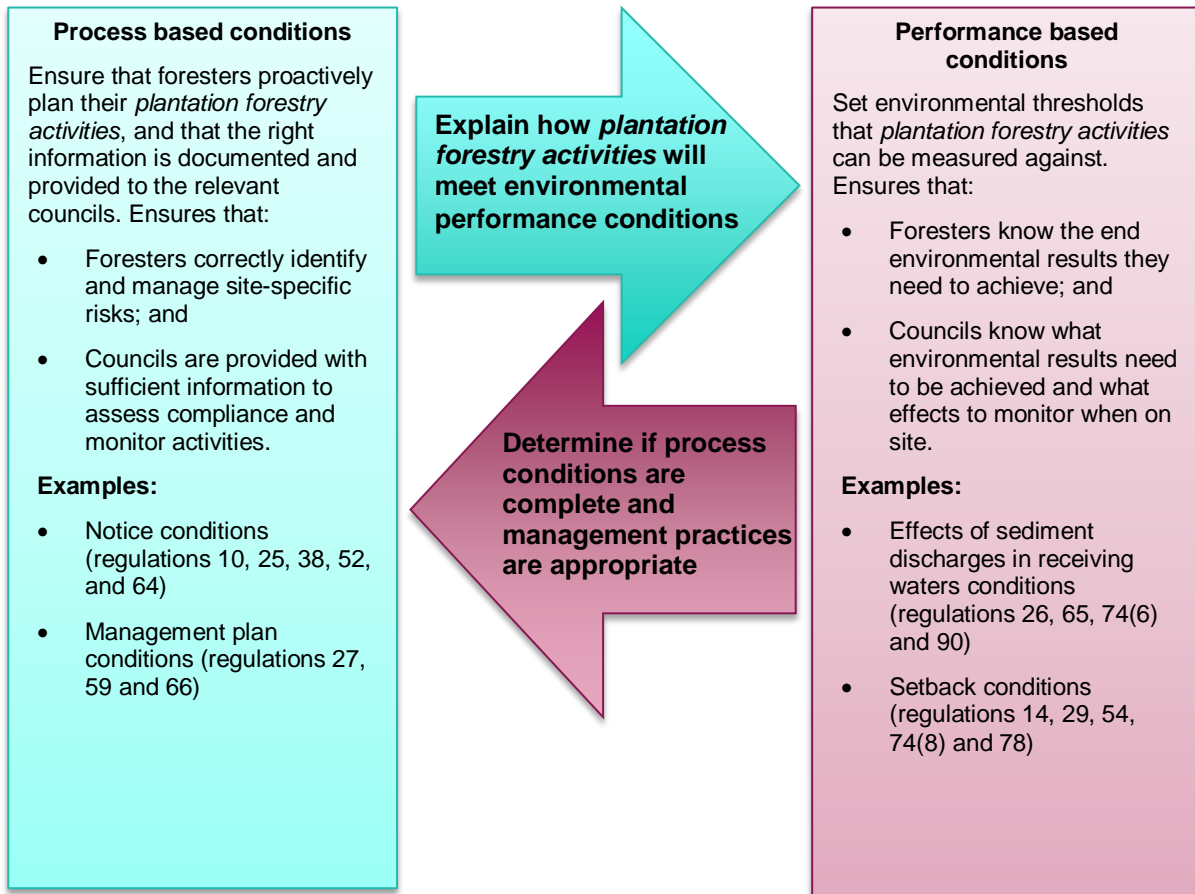


Figure 1: Overview of the process and performance based conditions in the NES-PF.

This document provides guidance on how to administer the NES-PF from:

1. A practical perspective - making sure the right processes and templates are in place to administer the NES-PF efficiently and effectively; and
2. An operational perspective - how to assess compliance with key permitted activity conditions.

This document includes guidance on:

- **General administration of the NES-PF** – council point of contact, acknowledging receipt of NES-PF documents, potential templates.
- **Notice of activities** – when notice is required, what is required in the notice, options for dealing with non-compliance.



- **Management plans** – when regional councils can request management plans, deciding when to request and review management plans, how to review and audit management plans.
- **Performance based activity conditions** – how to assess the performance based permitted activity conditions in the NES-PF to ensure the desired environmental outcome is achieved.

The permitted activity conditions covered in this section are primarily the functions of regional councils, although territorial authorities have functions in relation to some of the notice conditions.

## 1.1 GENERAL ADMINISTRATION

The NES-PF includes requirements for foresters to submit written notice of certain *plantation forestry activities* to regional councils and territorial authorities and provide management plans to the relevant regional council on request. Councils may already receive documents such as harvest plans so may have established systems in place to receive this documentation. However, the NES-PF procedural requirements to submit written notice and review management plans when requested will be new for most councils. There is likely to be some benefit in developing systems and processes to administer the new requirements in the NES-PF efficiently and effectively.

This section provides some general guidance on techniques and processes that councils may adopt to administer the NES-PF. The most appropriate systems and processes will depend on the nature of the existing systems, the scale and nature of *plantation forestry* in the region/district, and the type of council. Specific NES-PF systems and processes are likely to be more beneficial for regional councils as most of the regulations in the NES-PF are regional council functions.

### 1.1.1 Single point of contact

It will generally be beneficial to have a single point of contact (a person or dedicated email address/phone number) within council to deal with all NES-PF related queries and receive relevant documentation required under the NES-PF. This will help to ensure *plantation forestry activities* are managed consistently under the NES-PF. It will also ensure that foresters know the right person or position at council to contact in relation to NES-PF queries (e.g. where to send written notice of a *plantation forestry activity*, who to ask for clarification where local rules still apply).

It may be beneficial to set up a dedicated email address that foresters can use to submit all NES-PF documents, and to clarify NES-PF related queries. This will also enable council staff to track and record NES-PF documentation in a consistent and accurate manner and help avoid issues associated with changes in staff/absences etc.

### 1.1.2 Acknowledging receipt of queries/documents

It is good practice to acknowledge receipt of information that relates to a permitted activity condition or resource consents. This practice should extend to all information submitted by foresters under the NES-PF, to give foresters certainty that their information has been received.

Foresters may request written acknowledgement that the information they provide has been received and/or confirmation that the information provided complies with the NES-PF permitted activity conditions before they undertake their *plantation forestry activity*. It is good practice for councils to provide this acknowledgement and confirmation as soon as practicable.

It may be beneficial to set up systems to efficiently respond to all information and communication received by foresters; for example, an automatic email response



acknowledging receipt of documents. This automatic response could advise that a formal response will be provided [within 2-3 working days] confirming whether the information provided complies with the relevant condition (e.g. the written notice includes all the information required).

### 1.1.3 Templates and checklists

Councils may benefit from the preparation of NES-PF specific templates and checklists to help administer the NES-PF efficiently and effectively. Potential templates that may help councils administer the NES-PF include:

- Templates for foresters to submit written notice of *plantation forestry activities*.
- Email or letter templates that confirm that written notice of *plantation forestry activities* provided by foresters has been received and that it complies with the relevant regulation in the NES-PF.
- Email or letter template to acknowledge receipt of a management plan (when requested by the relevant regional council).
- Management plan checklists to assess management plans against the information requirements in Schedules 3 and 4 of the NES-PF.
- Consent application templates for certain *plantation forestry activities* that are likely to be applied for on a regular basis.
- Consent decision report templates for certain *plantation forestry activities*.
- Checklist to assess whether there are local plan rules that apply to *the plantation forestry activity* under Regulation 6 of the NES-PF (where plan rules may be more stringent).

## 1.2 NOTICE OF PLANTATION FORESTRY ACTIVITIES

The NES-PF permitted activity conditions require foresters to give councils notice of *afforestation, earthworks, river crossings, forestry quarrying* and *harvesting* prior to the activity commencing. Notice of these activities must be provided in writing to the relevant regional council (*earthworks, river crossings*) or the regional council and territorial authority (*afforestation, forestry quarrying, harvesting*) in accordance with the timeframes specified in the NES-PF. Table 1 outlines the permitted activity requirements for providing written notice of *plantation forestry activities*.

Table 1: Overview of requirements for written notice in the NES-PF.

Activity	Regulation	Consent authority	When required	Written notice of:	Timeframes
<i>Afforestation</i>	10	Regional council and territorial authority	All <i>afforestation</i> activities.	<ul style="list-style-type: none"> <li>• The location where the <i>afforestation</i> will occur and the proposed <i>setbacks</i> (including a description of how these were calculated)</li> <li>• The dates on which the <i>afforestation</i> is planned to begin and end.</li> </ul>	At least 20 and no more than 60 working days before the date on which the <i>afforestation</i> is planned to begin.



Activity	Regulation	Consent authority	When required	Written notice of:	Timeframes
<i>Earthworks</i>	25	Regional council	If <i>earthworks</i> involve more than 500m <sup>2</sup> of soil disturbance in any 3-month period.	<ul style="list-style-type: none"> <li>The place where <i>earthworks</i> are to be carried out</li> <li>The dates on which the <i>earthworks</i> or road widening and realignment are planned to begin and end</li> <li>If a forestry <i>earthworks</i> management plan is required (if applicable)</li> </ul>	<ul style="list-style-type: none"> <li>At least 20 and no more than 60 working days before the date on which the <i>earthworks</i> or road widening and realignment are planned to begin; or</li> <li>A minimum of 2 days before the date on which any <i>earthworks</i> that are required for <i>salvage operations</i> are planned to begin; or</li> <li>Annually, in the case of ongoing <i>earthworks</i>.</li> </ul>
<i>River crossings</i>	38	Regional council	The construction or removal of all <i>river crossings</i> .	<ul style="list-style-type: none"> <li>The date on which the construction or removal of a <i>river crossing</i>, other than a <i>temporary river crossing</i>, is planned to begin</li> <li>The location of the <i>river crossing</i>.</li> </ul>	At least 20 and no more than 60 working days before the date on which the <i>river crossing</i> activity is planned to begin.
<i>Forestry quarrying</i>	52	Regional council and territorial authority	If the volume extracted from a forest quarry exceeds 200 m <sup>3</sup> in any calendar year.	<ul style="list-style-type: none"> <li>The place where the <i>forestry quarrying</i> is to be carried out and the proposed <i>setbacks</i> (including a description of how they were calculated)</li> <li>The dates on which the <i>forestry quarrying</i> is planned to begin and end</li> <li>If a quarry erosion and</li> </ul>	<ul style="list-style-type: none"> <li>At least 20 and no more than 60 working days before the date on which the <i>forestry quarrying</i> is planned to begin; or</li> <li>Annually, in the case of ongoing <i>forestry quarrying</i>.</li> </ul>



Activity	Regulation	Consent authority	When required	Written notice of:	Timeframes
				sediment management plan is required (if applicable).	
<i>Harvesting</i>	64	Regional council and territorial authority	All <i>harvesting</i> activities.	<ul style="list-style-type: none"> <li>The place where <i>harvesting</i> will be carried out</li> <li>The dates on which the <i>harvesting</i> is planned to begin and end.</li> </ul>	<ul style="list-style-type: none"> <li>At least 20 and no more than 60 working days before the date on which the <i>harvesting</i> is planned to begin; or</li> <li>A minimum of 2 days before the date on which <i>harvesting</i> required for <i>salvage operations</i> is planned to begin; or</li> <li>Annually, in the case of ongoing <i>harvesting</i> operations.</li> </ul>

The notice regulations in the NES-PF are part of the permitted conditions for that activity. If a forester does not provide the written notice within the specified timeframe, or undertakes the activity without providing the notice, the notice regulations are not complied with and resource consent is required as a controlled activity (regulations 15(1), 34(1), 47(3), 60(1), and 70(1)). Control is reserved over the information on the activity required to be given in the notice.

In most cases, this will be a minor non-compliance and councils can consider whether a resource consent process is necessary. Section 37(1)(a) of the RMA enables councils to extend the deadline for providing written notice. This may be appropriate when councils receive the notice after the required deadline, or where specific information is missing from the original notice and the forester has committed to providing the required information within a timeframe agreed with council.

When extending a timeframe under section 37 of the RMA, councils are required to consider the interests of any directly affected person and the interests of the community in achieving an adequate assessment of effects, and its duty to avoid unreasonable delay (section 37A).

Alternatively, if the council considers that the non-compliance with the notice permitted activity condition is “marginal or temporary”, the council may be able to exercise its discretion to treat the activity as a permitted activity under section 87BB of the RMA. The Ministry for the Environment has developed guidance on deemed permitted activities which provides more detailed guidance on marginal and temporary rule breaches<sup>1</sup>.

<sup>1</sup> Refer: <http://www.mfe.govt.nz/publications/rma/technical-guide-deemed-permitted-activities>



### 1.3 MANAGEMENT PLANS – REQUEST AND REVIEW

*NB: the information in this section applies to regional councils as territorial authorities have no functions in relation to NES-PF management plans.*

The NES-PF requires management plans to be prepared as a permitted activity condition for:

- *Earthworks* that involve more than 500m<sup>2</sup> of soil disturbance in any 3-month period.
- *Forestry quarrying* where the volume of material extracted exceeds 200m<sup>3</sup> in a calendar year.
- *Harvesting*.

#### 1.3.1 Requesting a management plan

The NES-PF states that the relevant regional council may request a copy of the management plan. There is no requirement for regional councils to request management plans and each council will need to decide on a case by case basis when to request management plans. Relevant factors to consider include whether:

- The activity is proposed on a ‘high risk’ site, such as *earthworks* in a *red zone* or a site that has particularly sensitive features/receiving environments.
- The *plantation forestry activity* covers a particularly large or complex land area.
- The forester has had a history or compliance issues or environmental incidents.
- The forester is new to the industry and/or region.

The role of foresters and regional councils in developing, providing, receiving and reviewing NES-PF management plans is summarised in Table 2.

*Table 2: NES-PF management plans – roles and responsibilities.*

Type of management plan	Relevant regulation(s)	Foresters role	Regional council role
<b>Forestry Earthworks Management Plan</b>	25(3), and 27 and Schedule 3	If the NES-PF requires a management plan: <ul style="list-style-type: none"> <li>• Foresters <u>must</u> complete a management plan before the activity is undertaken (timeframe varies for each activity) which contains the relevant details required by the NES-PF</li> <li>• A management plan <u>must</u> be provided if council requests it in writing</li> <li>• If requested, a management plan <u>must</u> be provided to council within five working days of the date by which the management plan must be in place (timeframe varies for each activity)</li> </ul>	Once council receives notice from a forester that a management plan is required: Council <u>may</u> request a copy of the management plan in writing. Alternatively, council <u>may</u> decide not to request a copy of the management plan: <ul style="list-style-type: none"> <li>• Council <u>may</u> require that the management plan is provided annually</li> <li>• If a forester informs council that they have made material amendments to their management plan, council <u>may</u> request a copy of the amended management plan</li> <li>• Where the council requests a management plan, council <u>may</u> assess it to</li> </ul>
<b>Quarry Erosion and Sediment Management Plan</b>	52(3), and 59 and Schedule 4		



Type of management plan	Relevant regulation(s)	Foresters role	Regional council role
Harvest Plan	64(3), and 66 and Schedule 3	<ul style="list-style-type: none"> <li>Material amendments to the management plan <u>must</u> be documented and dated, the council <u>must</u> be advised that <i>material amendments</i> have been made to the management plan, and a copy of the amended management plan <u>must</u> be provided to council on request</li> <li>The activity <u>must</u> be carried out in accordance with the management plan.</li> </ul>	determine whether the information requirements in the relevant schedule have been met.

### 1.3.2 Reviewing a management plan – completeness and quality

The NES-PF sets out specific information requirements for management plans in Schedules 3 and 4. If a management plan has been requested and received, councils can use these schedules as checklists to review the management plan and to confirm that it includes all the information required. When requesting and reviewing NES-PF management plans, it is good practice for councils to consider:

- How the plan will be assessed for completeness
- How to determine whether the plan includes ‘sufficient detail’ to enable a site audit to be carried out.

Councils have no role ‘approving’ the management plans – this would reserve discretion to councils which is not appropriate as a permitted activity condition.

#### Assessing management plans for completeness

Much of the information required in a management plan is standard factual information that will be straightforward for councils to review and confirm the plan meets the information requirements in Schedule 3 and 4 (e.g. property details, maps, locations of features etc). It may be beneficial to have checklists to audit management plan content against Schedules 3 and 4 will help councils confirm this information has been provided efficiently and consistently. The exact wording of the NES-PF schedules should be used in any checklists developed by council to ensure the NES-PF requirements are accurately conveyed (key definitions should also be noted).

Certain information requirements in Schedule 3 and 4 relating to management practices will require councils to use their judgement as to whether the information requirements have been met. For example, clause 4(d) of Schedule 3 and clause 4 of Schedule 4 require an assessment of whether management practices are **clearly described**, whether there is **sufficient information** on how and when management practices will be used, and whether there is **sufficient detail** to enable a site audit to be carried out (sufficient detail is discussed further below).

While councils can assess whether management practices in the plan are clearly described in sufficient detail, they have no power to assess the appropriateness or adequacy of the actual management practices described. Rather, the role of council as reviewer is simply to ensure that the information provided in the plan meets the requirements in the relevant



schedule. For example, when assessing whether a forestry *earthworks* management plan has met the requirements of clause 4(d) of Schedule 3, a council should focus on whether:

- There is sufficient detail to enable a site audit of erosion and sediment control measures.
- The management practices have been clearly described, i.e. is it clear what management practices will be used, where they will be used, and under what circumstances.
- The information is sufficient to determine that the activity complies with other permitted activity conditions in the NES-PF. For example, the description of erosion and *sediment* control measures required by section 4(d) of Schedule 3 will help council determine whether Regulation 31(2) is complied with (i.e. what stormwater, runoff, and *sediment control measures* will be installed and maintained).

If the council determines that some of the information requirements have not been met, then the forester should be advised and given an opportunity to address or explain any identified gaps in the first instance so.

A situation may occur where a council has a genuine concern about the quality of a management plan, but the forester has technically met all the information requirements in Schedules 3 or 4. In this scenario, the forester has complied with the permitted activity conditions to prepare a completed management plan. However, council may advise the forester that they consider the management practices are not appropriate to manage the identified risks and suggest alternative practices. The forester may consider changing their management practices but are not obligated to.

Where a council has concerns about a management plan, this may also act as a trigger to undertake a site visit to assess compliance with the NES-PF. This will enable councils to determine whether the management practices described in the plan are adequate to comply with performance based permitted activity conditions (e.g. those conditions relating to stabilisation, ground disturbance and *sediment*).

Management plans are not required to follow a particular template, because much of the content of the NES-PF management plans is covered by existing harvest planning software and planning processes. Having two documents with overlapping requirements is likely to lead to confusion during forestry operations rather than a good outcome. However, it is good practice for foresters to clearly identify where in the management plan the NES-PF information requirements can be found (page number, section reference etc.). For example, foresters could provide their own cover sheet at the front of the management plan to clearly identify where in the plan the NES-PF information requirements can be found (page number, section reference etc.). This will assist with council reviews of management plans (and is a common approach used to demonstrate compliance).

### Sufficient detail

The key test for councils in assessing management plans is whether the plan includes **sufficient detail** on the proposed management practices **to enable a site audit of the management practices to be carried out**<sup>2</sup>. Council staff reviewing management plans should then ask themselves whether the plans provides sufficient detail on:

- The management practices that will be used to avoid, remedy and mitigate adverse effects of the activity on the environment and what environmental risks these management techniques respond to. All management practices should be clearly described in the plan. For some activities, a range of management practices will be used (e.g. for water control on *earthworks*), but there should be sufficient detail on each technique to be able to assess whether they will be planned, designed, constructed and maintained in accordance with acceptable practice.

---

<sup>2</sup>Clause 4(d) of Schedule 3 and Clause 4 of Schedule 4.





- The locations and circumstances that the management practices will be used in. Compliance monitoring officers should have enough information to quickly find the location of the physical structures they need to check (e.g. silt fence or slash storage area). This does not mean that all locations always need to be accurately identified on a map. Foresters may need flexibility to decide final locations of management practices when on-site as the exact location may change for operational reasons. The management plan should also include sufficient detail on the circumstances when certain management practices will be used (e.g. silt fences will be used on low gradient sites and confined areas with small contributing catchments).

### 1.3.3 Material amendments to a management plan

Management plans are a tool to help foresters anticipate future environmental risks and then decide on a course of action to manage that risk. As management plans are prepared prior to the *plantation forestry activity* taking place, foresters may find that they need to deviate from the original management plan for operational reasons or in response to site-specific factors.

If a significant change to the methods used to manage environmental effects or location of *forestry infrastructure* from those stated in the management plan is proposed, then this is considered a *material amendment* under the NES-PF. All *material amendments* must be documented and dated. This is important as the permitted activity conditions state that the activity must be undertaken in accordance with the management plan.

Foresters are also required to advise the regional council that a *material amendment* to the management plan has been made and a copy of the amended management plan must be provided to the regional council if requested. Table 3 outlines the NES-PF regulations that describe what a *material amendment* to a management plan is.

Table 3: Definitions of material amendment in the NES-PF.

Regulation	Type of management plan	Definition of <i>material amendment</i>
27(5)	Forestry earthworks management plan	<p><b><i>'material amendment'</i></b> means any significant change to the location of forestry roads, forestry tracks, or landings, or changes to the matters required by subclause (2)(a) that would significantly change the methods used to manage environmental effects.'</p> <p>Subclause (2)(a) matters are:</p> <ul style="list-style-type: none"> <li>• The environmental risks associated with <i>earthwork</i> activities and measures to avoid, remedy, or mitigate the identified adverse effects.</li> </ul>
59(6)	Quarry erosion and sediment management plan	<p><b><i>'material amendment'</i></b> means any significant change, such as the relocation of quarry roads, or changes to the matters required by subclause (2) that would significantly change the methods used to manage environmental effects.'</p> <p>Subclause (2) matters are:</p> <ul style="list-style-type: none"> <li>• The environmental risks associated with the <i>forestry quarrying</i> activities and measures to avoid, remedy, or mitigate the identified adverse effects.</li> </ul>
66(6)	Harvest plan	<p><b><i>'material amendment'</i></b> means any significant change in harvest regime, such as changing from ground-based to hauler, or changes to the matters required by subclause (2) that would change the methods used to manage environmental effects.'</p>



Regulation	Type of management plan	Definition of <i>material amendment</i>
		<p>Relevant subclause (2) matters are:</p> <ul style="list-style-type: none"> <li>• Environmental risks associated with <i>earthworks</i> and operational responses to those risks that avoid, remedy and mitigate the adverse effects of the activity on the environment.</li> <li>• The information requirements of Schedule 3 (including clause 4 if the <i>harvesting</i> is undertaken without <i>earthworks</i>).</li> </ul>

Although the definitions of *material amendment* vary slightly for each regulation, the consistent test is that there must be a ‘*significant change ... that would change the methods used to manage environmental effects*’. A change needs to meet both parts of this test before it is considered a *material amendment* (i.e. the change needs to be significant and it needs to relate to methods used to manage environmental effects).

If councils encounter undocumented changes to management practices or the location of forestry infrastructure on site that they consider meet the definition of a *material amendment*, the situation should be discussed with the forester in the first instance. The forester should then be given an opportunity to amend the management plan (documenting and dating the change) and advise council of this change in order to comply with the relevant permitted activity condition.

#### 1.3.4 Management plan site audit

The management plan enables the council to undertake a site audit of the management practices being used by providing a description of on-site risks and a list of management practices that will be used to manage those risks. This will enable council monitoring officers to focus their time during site visits to high risk areas and enable a more efficient site visit overall. This provides an incentive for foresters to prepare clear and easy to follow management plans as it will assist council monitoring officers with their site audits.

Councils may also benefit from the development of compliance monitoring templates to use when undertaking site visits of *plantation forestry activities*. These templates should be aligned with the NES-PF requirements and conditions for each *plantation forestry activity* and allow for the management practices described in the management plan to be verified on site.

## 1.4 PERFORMANCE BASED CONDITIONS – ASSESSING COMPLIANCE

The NES-PF contains a wide variety of performance based (i.e. outcome focused) conditions – ranging from quantitative standards that are generally relatively easy to assess for compliance through to qualitative conditions that are more subjective. Examples of NES-PF performance-based conditions are provided in Table 4.

Table 4: Examples of performance-based conditions in the NES-PF.

Regulation	Content	Comment
14(3)(a)	<p><i>Afforestation must not occur -</i></p> <p>(a) <i>within 5 m of -</i></p> <p>(i) <i>a perennial river with a bankfull channel width less than 3 m; or</i></p> <p>(ii) <i>a wetland larger than 0.25 ha</i></p>	<p>Condition is relatively easy to interpret and assess for compliance as it contains quantitative information i.e. setbacks are expressed as a measurable distance.</p>



<p>26</p>	<p><i>Sediment originating from earthworks must be managed to ensure that after reasonable mixing it does not give rise to any of the following effects on receiving waters:</i></p> <ul style="list-style-type: none"> <li><i>(a) any conspicuous change in colour or visual clarity</i></li> <li><i>(b) the rendering of fresh water unsuitable for consumption by farm animals</i></li> <li><i>(c) any significant adverse effect on aquatic life.</i></li> </ul>	<p>Condition is qualitative and involves some elements that must be assessed on a case-by-case basis.</p> <p>This permitted activity condition is based on section 107 of the RMA. No direction is provided in the NES-PF on how to assess what constitutes ‘conspicuous change’ or at what point an adverse effect on aquatic life is ‘significant’. Councils must rely on their own existing procedures for assessing discharges and water quality to determine compliance with this regulation.</p>
<p>68(6)</p>	<p><i>When harvesting occurs within or across a riparian zone, all disturbed vegetation, soil, or debris must be deposited to avoid it entering into water, and to avoid -</i></p> <ul style="list-style-type: none"> <li><i>(a) diversion or damming of any water body or coastal water</i></li> <li><i>(b) degradation of any aquatic habitat or riparian zone</i></li> <li><i>(c) damage to downstream infrastructure or property.</i></li> </ul>	<p>There are qualitative aspects to this condition – if <i>harvesting</i> results in vegetation, soil or debris entering water, councils will need to determine whether it is resulting in the effects referred to in (a)-(c). Often it will be straightforward to determine whether diversion of a water body is occurring or a property is being damaged, but councils will need to use their own judgement and expertise to assess whether there has been any degradation of a habitat or <i>riparian zone</i>.</p>

Assessing compliance with permitted activity conditions that have some qualitative aspects requires a judgement to be made based on site-specific factors. It is expected that councils will use their own procedures and practices to assess compliance under the NES-PF, as they would for any other rule in their plan. Reference should also be made to sections 4-7 of the [NES-PF User Guide](#) which provide more detailed guidance on the interpretation of the permitted activity conditions and requirements in the NES-PF.



## 2 Key concepts

There are a number of concepts, conditions and requirements that appear in multiple NES-PF regulations. This section provides guidance on how to interpret these key concepts, in addition to the specific guidance on each *plantation forestry activity* and the general provisions in Sections 5-7 of this User Guide. The key concepts and requirements addressed in this section are:

- Activities located on multiple ESC zones – bundling
- The 2ha threshold certain *plantation forestry activities* on higher risk ESC land
- *Setbacks*
- Calculating slope of land
- Adjoining and adjacent
- Ownership and management
- *Urban areas*
- *Sediment, storm water and water runoff control devices*
- Water quality standards for *sediment* discharges
- *Annual Exceedance Probability (AEP)* mapping.

### 2.1 ACTIVITIES LOCATED ON MULTIPLE ESC ZONES – BUNDLING

It can be very common for a *plantation forest* to cover multiple ESC zones.

Where resource consent is required for a *plantation forestry activity* because part of the activity is located on *orange zone* or *red zone* land and the activity exceeds the relevant thresholds, then a **resource consent is only required for the part of the activity that falls within the ESC zones requiring consent (not the part that is permitted)**. In most cases, this will be straightforward to determine based on the ESC spatial dataset.

For example, *afforestation* may be proposed for a large area of land that is predominately green and *yellow zone* but there are also two areas of land which are *red zone* that have a continuous area of over 2ha. In this situation, resource consent is only required for the *red zone* land and the rest of the activity is permitted (provided the relevant permitted activity conditions are complied with).

There may also be situations when *harvesting* in multiple ESC zones within a single *plantation forest* may be a permitted activity, a controlled activity and a restricted discretionary activity. *Harvesting* could be located partly in *orange zone*, *red zone*, and *red zone* with *Land Use Capability Class 8e*. This would mean that *harvesting* is a permitted activity (*orange zone* where all the relevant conditions are complied with), a controlled activity (*red zone*)<sup>3</sup> and a restricted discretionary activity (*red zone Land Use Capability Class 8e*) in different parts of the *plantation forest*. A resource consent application would be required for the *harvesting* operation on the *red zone* and the *red zone* with *Land Use Capability Class 8e*.

There may be other situations when foresters apply for multiple consents at one time which have a different activity status. For example, a *harvesting* activity may require consent as a controlled activity but may also involve *earthworks* and the formation of a *river crossing* that both require resource consent as a restricted discretionary activity. In this scenario a forester is likely to seek resource consent for all three activities under the NES-PF at the same time.

<sup>3</sup> Where it involves more than 2ha of *harvesting* in any 3-month period.



In this scenario, there is some discretion to ‘bundle’ activities in such circumstances and apply the more restrictive activity status. This is done when multiple elements of the same proposal require consent and for, processing and decision-making purposes, those consents are ‘bundled’ by the consent authority and are considered together, rather than split up artificially<sup>4</sup>. However, case law<sup>5</sup> has emphasised that this approach to ‘bundle’ applications with different activity status is not appropriate where:

- One of the consents sought is for a controlled activity or restricted discretionary activity and where the scope of the consent authority’s discretion in respect of one or more of the consents is relatively restricted
- The effects of exercising the two consents would not overlap or have consequential or flow-on effects on matters to be considered on the other application.

These tests could be met under the NES-PF as the matters of control and discretion in the NES-PF are relatively confined and specific, and the effects of some types of activities do not have much overlap.

Section 6 of the [NES-PF Consenting and Compliance Guide](#) provides more detailed guidance on resource consents under the NES-PF, including ‘bundling’ and global consents.

## 2.2 THE TWO HECTARE THRESHOLD

The NES-PF uses a two hectare (2ha) threshold on *red zone* land to determine whether the following activities are permitted or whether a resource consent is required:

- *Afforestation* within a calendar year (Regulation 9(2)(b) and 16(2)(b))
- *Harvesting* within a 3-month period (Regulation 63(2)(b) and 70(3)(b))
- *Mechanical land preparation* within a calendar year (Regulation 73(2)(d) and 75(1)(b))
- *Replanting* within a calendar year (Regulation 77(2) and 80(1)).

For example, *afforestation* is a permitted activity in a *red zone* if the land being planted is ‘2ha or less in any calendar year’ (and all other relevant permitted activity conditions are complied with). Resource consent is required as a restricted discretionary activity where the area proposed to be planted in the *red zone* is greater than 2ha in a calendar year.

The purpose of this threshold is to permit a very small extent of an activity within a higher risk ESC zone where resource consent would otherwise be required. This is most likely to occur where most of an activity is in a lower ESC risk zone(s) but a small amount extends into an adjacent higher risk *red zone* land.

The NES-PF does not specify how to measure the 2ha threshold but there are two aspects to consider:

a) ***What land area is being considered – does this relate to legal land parcels or a plantation forest?***

The 2ha threshold for the activity applies to a **continuous 2ha area of red zone land within a single plantation forest**, irrespective of whether the forest is made up of numerous land parcels and/or different land owners. The definition of *plantation forest* is not restricted by cadastral boundaries or ownership/management arrangements.

---

<sup>4</sup> Note that this can also apply even if the consents are required by different plans as long as there is the requisite overlap between the plans - *Newbury Holdings Ltd v Auckland Council* [2013] NZHC 1172 and *Hamilton v Far North District Council* [2015] NZEnvC 12.

<sup>5</sup> Refer *South Park Corporation Ltd v Auckland City Council* [2001] NZRMA 350, *Urban Auckland Society for the Protection of Auckland City and Waterfront Inc v Auckland Council* [2015] NZRMA 235, and *North Canterbury Gas Ltd v Waimakariri District Council* EnvC A217/02 2



b) **How the 2ha is spatially defined –does the area need to be continuous?**

The 2ha threshold is a continuous area of the activity on *red zone* land consistent with the definition of plantation forest in Regulation 3 of the NES-PF, which refers to a forest as being a “*continuous forest cover of forest species*”.

## 2.3 SETBACKS

*Setbacks* are a proven method to mitigate the adverse effects of *plantation forestry activities* on sensitive ecosystems, water bodies and adjacent land uses, and are a permitted activity condition used throughout the NES-PF. The term ‘*setback*’ in the NES-PF is defined as:

*‘the distance measured horizontally from a feature or boundary that creates a buffer within which certain activities cannot take place’.*

It is common practice to measure *setbacks* as the distance from two things at their closest point (e.g. from a planted boundary of a *plantation forest* to stream edge) and it is expected that this approach will be applied to *setbacks* in the NES-PF. The NES-PF includes *setbacks* within both regional council and territorial authority functions, which are explained further below.

### 2.3.1 Regional council

*Setbacks* within regional council functions are included in the NES-PF for *afforestation, earthworks, forestry quarrying, mechanical land preparation and replanting*, and for *fuel storage and refuelling* in the general provisions. These *setbacks* primarily relate to the distance from *plantation forestry activities* to different types of water bodies – including *perennial rivers, lakes, wetlands*, outstanding freshwater bodies, water bodies subject to Water Conservation Orders, and the coastal marine area.

Neither the NES-PF nor the RMA contain guidance on how to define the edge of water bodies. Many councils have existing methods to determine the spatial extent of different water bodies and it is expected that councils will continue to define edges of waterbodies as they do currently.

#### **Perennial rivers**

The NES-PF includes different setbacks from *perennial rivers* with a *bankfull channel width* of less than 3m and *perennial rivers* with a *bankfull channel width* of 3m or more. The following NES-PF definitions in Regulation 3 are important when considering and measuring setbacks to *perennial rivers*:

***bankfull channel width*** means the distance across a river channel formed by the dominant channel-forming flow with a recurrence interval seldom outside a 1 to 2-year range (measured at a right angle to the channel flow)

***perennial river*** means a river that is a continually or intermittently flowing body of freshwater, if the intermittent flows provide habitat for the continuation of the aquatic ecosystem.

Figure 4 from the Bay of Plenty Regional Land and Water Plan (Operative, 2008) shows how to measure the *bankfull channel width* of rivers.

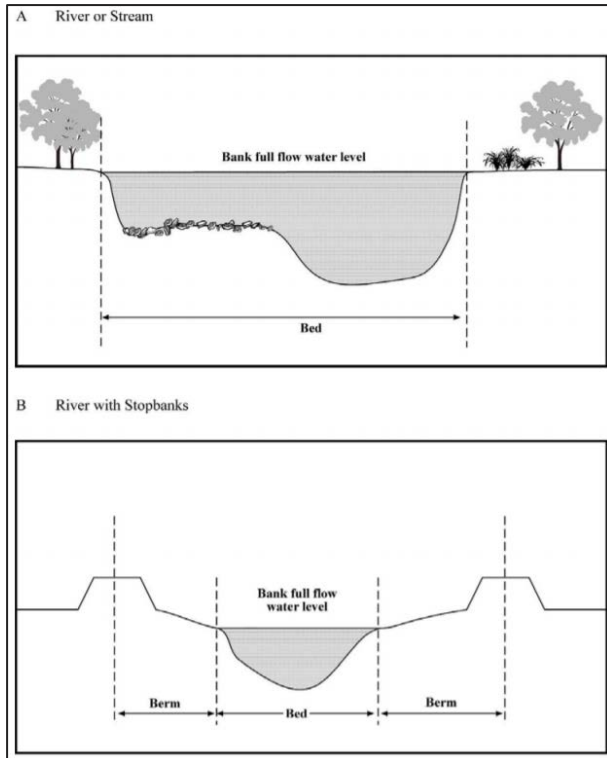


Figure 2: Bankfull channel width measurement examples (source: Bay of Plenty Regional Land and Water Plan (Operative, 2008))

## Lakes

The term 'lake' is not defined in the NES-PF. However, it is defined in the RMA as 'a body of fresh water which is entirely or nearly surrounded by land'. Most regional plans tend to rely on this definition without further explanation as the boundary of a lake is usually easy to identify. The water levels in lakes may fluctuate seasonally, but the boundary of the lake should be measured from the water high point on the lake's shore or bank.

## Wetlands

The definition of *wetland* in the NES-PF is the same as the RMA definition of *wetlands* – 'includes permanently or intermittently wet areas, shallow water, and land water margins that support a natural ecosystem of plants and animals that are adapted to wet conditions'. Often the edges of *wetlands* are harder to define than other waterbodies as their boundary can respond significantly to changes in rainfall throughout the year and include intermittent wet areas.

## Outstanding freshwater bodies

*Outstanding freshwater bodies* are generally identified to give effect to Objective A2 of the NPSFM. These waterbodies are defined in the NES-PF as:

***outstanding freshwater body*** means a freshwater body that -

(a) is identified in a regional policy statement or regional plan as having outstanding values, including any ecological, landscape, recreational, or spiritual values, however described; and

(b) is identified in the policy statement or plan by its location, including by a map, a schedule, or a description of the area.

This definition is consistent with the definition in the NPSFM, with additional specificity on how the areas need to be identified in regional policy statements and plans for the *setbacks* to apply. *Outstanding freshwater bodies* are usually clearly defined in regional plans and



policy statements, either through a spatial map or detailed written description of the location and extent of the *water body*. The *setback* should be measured from the boundary of the *outstanding freshwater body* (however defined in the relevant regional plan or policy statement) to the closest edge of the relevant *plantation forestry activity*.

### Water bodies subject to Water Conservation Orders

Water bodies subject to Water Conservation Orders<sup>6</sup> are not typically mapped in regional plans – instead they are defined in an Order of Council. A full list of water bodies subject to Water Conservation Orders (and links to the relevant Order in Council) can be found on the Ministry for the Environment website<sup>7</sup>. Some Water Conservation Order application documents contain maps that may help with defining the extent of the *water body*, although the description of the *water body* in the Order in Council takes precedence.

If a *plantation forestry activity* is proposed in close proximity to a *water body* subject to a Water Conservation Order, the *setback* measurement should be from the boundary of that *water body* to the closest edge of the relevant *plantation forestry activity*.

In addition to the *setbacks* to Water Conservation Orders in the NES-PF, section 43C of the RMA states:

- Water Conservation Orders that are more stringent than NES applying to water prevail over the relevant NES
- A more stringent NES applying to water will prevail over a Water Conservation Order.

### Coastal marine area

The RMA defines the landward boundary of the coastal marine area as follows:

*‘the line of mean high water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of -*

- (a) 1 kilometre upstream from the mouth of the river; or*
- (b) the point upstream that is calculated by multiplying the width of the river mouth by 5’*

Coastal marine area *setbacks* should be measured from mean high water springs (MHWS) in accordance with the RMA definition. There is no single definitive method that can be used to measure MHWS as the approach taken needs to be customised to the individual location and take into account, amongst other things, the hydraulic gradient, the type and value of land concerned and the survey accuracy required<sup>8</sup>. Some regional councils have mapped MHWS for coastal planning purposes and can provide further guidance on how to measure MHWS if required. General guidance on determining MHWS can be found on the Land Information New Zealand website and in Baker and Watkins (1991)<sup>9</sup>.

---

<sup>6</sup> ‘Water Conservation Order’ is defined in section 200 of the RMA but the definition does not assist with helping to define the boundaries of the *water body*.

<sup>7</sup>Refer: <http://www.mfe.govt.nz/fresh-water/water-conservation-orders/existing-water-conservation-orders/table-water-conservation>

<sup>8</sup> Determination of MHWS, Land Information New Zealand, refer: <http://www.linz.govt.nz/data/geodetic-system/datums-projections-and-heights/vertical-datums/tidal-level-information-for-surveyors>

<sup>9</sup> Refer: ‘Guidance notes for the determination of Mean High Water Mark for land title surveys’ New Zealand Institute of Surveyors Professional Development Committee at <http://docs.niwa.co.nz/library/public/Baker1991.pdf>





## Significant natural area<sup>10</sup>

*Setbacks* from *significant natural areas* are required for *afforestation* and *replanting* as both a regional council and territorial authority *setback* as follows:

- *Afforestation* - a *setback* requirement of 10 metres from a *significant natural area* applies
- *Replanting* - new trees must not be planted in any area closer to the adjacent *significant natural areas* than the 'stump line'. The stump line is defined in Regulation 3 of the NES-PF as '*points measured from the centre of the outer stumps of the plantation forestry trees previously harvested*'.

The *significant natural area setback* should generally be measured from the boundary of the *significant natural area* as defined in the relevant plan or regional statement to the closest edge of the *plantation forest*.

There may be instances when the *significant natural area* is not mapped and the boundary is not clear. This is likely to be an issue when the relevant plan defines *significant natural areas* using significance criteria, as this form of identification is recognised in the *significant natural area* definition in the NES-PF. In these instances, ecological advice or assessment may be required to determine the existence and boundary of the *significant natural area* and this should be discussed/confirmed with the relevant council.

### 2.3.2 Territorial authority

*Setbacks* within territorial authority functions are included in the NES-PF for *afforestation*, *forestry quarrying*, and *replanting*. *Setbacks* for these activities should be measured from the stem of the nearest tree being planted for *afforestation*, the edge of the nearest quarry pit for *forestry quarrying*, and the 'stump line'<sup>11</sup> for *replanting*. The *setbacks* should generally be measured as follows:

- (i) **Boundary of adjoining property** – to the cadastral boundary of the adjoining property that is not owned by the owner of the *plantation forest* or the land the *plantation forest* is located on (unless that adjoining property is also in *plantation forest*).
- (ii) **Dwelling located on a different property from that of the *plantation forest*** –to the nearest exterior surface of a dwelling. Dwelling is defined in the NES-PF as having the same meaning as the definition of dwelling house in the RMA, which can be used to assist interpretation<sup>12</sup>.
- (iii) **Shading** – refer [section 5.1.10](#) of the NES-PF User Guide
- (iv) **Boundary of land zoned as a *papakāinga* or an *urban area*** - to the closest boundary of the respective zone in a district plan.
- (v) ***Significant natural area*** – refer to the regional council *significant natural area setback* section above.

<sup>10</sup> Defined in the NES-PF as '*significant natural area means an area of significant indigenous vegetation or significant habitat of indigenous fauna that (a) is identified in a regional policy statement or a regional or district plan as significant, however described; and (b) is identified in the policy statement or plan, including by a map, a schedule, or a description of the area or by using significance criteria*'.

<sup>11</sup> The stump line is defined in Regulation 3 of the NES-PF as '*points measured from the centre of the outer stumps of the plantation forestry trees previously harvested*'.

<sup>12</sup> Dwelling house is defined in the RMA as '*means any building, whether permanent or temporary, that is occupied, in whole or in part, as a residence; and includes any structure or outdoor living area that is accessory to, and used wholly or principally for the purposes of, the residence; but does not include the land upon which the residence is sited*'.



## 2.4 CALCULATING SLOPE

The slope of the land is relevant for *earthworks* (regulations 24, 31 and 35) and *mechanical land preparation* (regulations 73 and 75). These regulations have a threshold for these two activities when they are carried out on land with a slope of over 25 degrees and over 35 degrees, respectively, which will determine whether resource consent is required together with other factors (e.g. the location of the activity with respect to the ESC, volume of *earthworks*). There are two common ways to measure slope that may be used for *earthworks* and *mechanical land preparation*:

- Field measurement, using a clinometer or a smart phone.
- GIS, using the GIS calculation capability from either topographic map information or LiDAR data.

Regulation 31 has different culvert diameter requirements for *forestry roads* and *forestry tracks* on steeper land. The purpose is to ensure that the roadside culverts have sufficient capacity to remove water that will reach the culvert in steeper areas. Measuring land slope under Regulation 31 therefore relates to the overall average slope of the site.

Regulations 24, 35, 73 and 75 have slope requirements that apply to activities potentially covering a much larger area (i.e. the total amount of land where *earthworks* or *mechanical land preparation* are occurring). In these situations, a pragmatic approach is required. Generally, slope should be measured from the top of the ridgeline to the bottom of gully/stream, although this will vary depending on site specific factors.

## 2.5 'ADJOINING' AND 'ADJACENT'

The terms 'adjoining' and 'adjacent' are used throughout the NES-PF in relation to nearby properties, *significant natural areas*, waterbodies, infrastructure etc. The terms 'adjoining' or 'adjacent' are not defined in the NES-PF so it is important that councils and foresters have a consistent understanding of how to interpret these terms.

The term 'adjoining' is reasonably straightforward and applies to two things that are touching or have a common joint or line<sup>13</sup>. The term 'adjacent' has been interpreted in different ways in a RMA context. For example, the Quality Planning website discusses how to interpret 'adjacent' as follows:

*The term adjacent has a common meaning which is "close to, but/ not necessarily adjoining another site". The term adjacent has also been defined by the Courts as lying near or close; adjoining; continuous; bordering; not necessarily touching*<sup>14</sup>.

The Courts have also commented that 'adjacent' is not a word to which a 'precise and uniform meaning is attached by ordinary usage'<sup>15</sup> and that the 'degree of proximity required [to be defined as 'adjacent'] was held to be entirely a matter of circumstance'<sup>16</sup>. This indicates that councils and foresters will need to use their judgement and consider the individual circumstances of each site when determining whether a property or feature is adjacent or not.

The key difference between adjoining and adjacent is that:

<sup>13</sup> Merriam-Webster dictionary definition: <https://www.merriam-webster.com/dictionary/adjoining> .

<sup>14</sup> <http://www.qualityplanning.org.nz/index.php/consents/to-notify-or-not>, relying on case law from *Ports of Auckland v Auckland City Council* [1999] 1 NZLR 601.

<sup>15</sup> *Mayor Councillors and Citizens of the City of Wellington v Mayor Councillors and Burgesses of the Borough of Lower Hutt* [1904] AC 773, 775,

<sup>16</sup> *Ports of Auckland v Auckland City Council* [1999] 1 NZLR 601.



- ‘Adjoining’ expects that **two objects (usually properties or land parcels) will be physically touching.**
- ‘Adjacent’ may include objects that touch but **may also include objects separated by a road, access strip or similar, or objects that are nearby<sup>17</sup>.**

## 2.6 URBAN AREA

The NES-PF permitted activity conditions refer to *urban area* in relation to the *setbacks* for *afforestation* (Regulation 14) and *forestry quarrying* (Regulation 54) and in the traffic management condition for *forestry quarrying* (Regulation 57). The NES-PF does not apply to *forest species* within *urban areas* as this is excluded from the definition of *plantation forestry*. *Urban area* is defined in the NES-PF as follows:

- (a) means an area identified in a district plan or proposed district plan as being primarily zoned for residential, industrial, or commercial activities, together with adjoining special-purpose and open-space zones, however described; but
- (b) does not include an area zoned primarily for rural or rural-residential activities, however described.

The types of *urban areas* referred to in this definition (e.g. residential, industrial, commercial) are the common types of urban zones found in district plans. The NES-PF does not define these different types of urban zones so foresters and councils will need to determine how the zones in the relevant district plan fit with the NES-PF definition of *urban area*.

The term ‘however described’ recognises that district plans use different terminology to describe zones. For example, a primarily residential zone may be referred to as ‘Residential 1’, ‘Living Zone’ or ‘Large Lot Residential Zone’. A zone in a district plan therefore does not need to use the exact term ‘residential’, ‘commercial’ or ‘industrial’ to fall within the definition of *urban area* in the NES-PF. The key test in the definition of *urban area* is the primary purpose of the zone which can usually be easily determined through the introduction section of the zone chapter and/or the zone objectives.

Table 6 summarises examples of zones in district plans that may fall within or outside the definition of *urban area* in the NES-PF. These examples are current at the date of publication and each council will need to determine how the zones in their plan correspond with the definition of *urban area* in the NES-PF.

Table 5: Examples of plan zones that are likely to fall within and outside the NES-PF definition of urban area.

Plan	Example
<b>Ashburton District Plan 2014 (operative in part)</b>	<p>The Residential C and D zones of the District Plan cover land at the rural/urban interface of Ashburton and other small towns in the district.</p> <p>Residential C: Medium-Low Density zone covers the outer, lower density suburban areas of the district, provides primarily for residential activities, and anticipates that the area will retain an open, planted character with high amenity levels for residents.</p> <p>Residential D: Low Density zone covers land that adjoins the urban edge of Ashburton and other small towns. It also provides primarily for residential activities and is an alternative residential environment to suburban living. Rural production activities are intended to remain a key feature of the zone, however, and it is identified as a ‘rural-residential interface’ area.</p> <p>Under the NES-PF, Residential C zone is likely to be considered an ‘urban area’, while Residential D zone is likely to be excluded as it is used primarily for rural-residential activities. The key differences are:</p>

<sup>17</sup> Adjacent can mean ‘near to – in the vicinity or neighbourhood of’: *McBride v Wellington City Council* (28 July 2009) HC WN CRI-2009-485-44, and *Wellington City Council v McBride* (22 August 2007) HC WN CRI-2007-485-33.



	<ul style="list-style-type: none"> <li>Residential C zones are located in urban areas, not 'interface' areas like Residential D zones.</li> <li>Residential D zones also anticipate rural production activities, which means the zone has more of a rural character.</li> </ul>
<b>Auckland Unitary Plan 2016 (operative in part)</b>	The Unitary Plan has a 'Future Urban' zone, which is applied to rural land that is intended to be used for urban purposes at some point in the future. Urban residential development in this zone is a non-complying activity to discourage premature, unplanned urban development occurring prior to a full zoning plan change. As the primary purpose of the zone is to prevent urban development and allow the current rural activities to continue, the Future Urban zone is likely to be excluded from the definition of 'urban area' under the NES-PF.
<b>South Taranaki District Plan 2015 (proposed)</b>	The District Plan has a 'Rural Industrial Zone' that covers existing large-scale industrial processing activities that depend on primary products or natural resources from the rural environment. Although some primary production activities may take place within these zones, the primary purpose is to provide for activities that are industrial in nature and the character of the zone is industrial rather than rural. As such, the 'Rural Industrial Zone' is likely to fall within the definition of 'urban area' under the NES-PF.

## 2.7 OWNERSHIP AND MANAGEMENT

Several regulations refer to land that is in the same 'ownership' and/or 'management' of the *plantation forest* as a way of identifying land included in, or exempt from, a permitted activity conditions. While some regulations refer to the owner of the *plantation forest* or 'ownership', other regulations refer to land under the same or different 'ownership or management' from the land where the *plantation forestry activity* is occurring. The terms 'managed' or 'management' are used as a way of capturing land that is leased for *plantation forestry* but not owned by the *plantation forest owner*<sup>18</sup>.

The exception is Regulation 14(1)(a), which states:

*'Afforestation must not occur within 10 m of the boundary of an adjoining property that is not owned by the owner of the plantation forest or the land it is located on (unless that adjoining property is also plantation forest)'*

In effect, this has the same meaning as other regulations that refer to 'ownership or management'. In this situation, it is intended to ensure that the *setbacks* don't apply where the adjoining property is either owned by the owner of *plantation forest* or the land it is located on.

## 2.8 SEDIMENT, STORMWATER AND WATER RUNOFF CONTROL MEASURES

Regulations 31 (*earthworks*) and 56 (*forestry quarrying*) require *sediment control measures*, *stormwater control measures* and/or *water run-off control measures* to be installed and maintained as a permitted activity condition. These controls are intended to avoid or mitigate adverse environmental effects and meet other performance based permitted activity conditions, such as those relating to the effects of sediment discharges in receiving water bodies.

These devices are defined in Regulation 3 of the NES-PF follows:

**Sediment control measures** means structures or measures to slow or stop water with sediment in it, so that the sediment will drop out of suspension before the water from the site reaches a water body;

<sup>18</sup> Regulations 11(5)(b), 53, 54(1)(a), 54(2), 57(a), 79(6)(b), 98(2), 98(3) and 100(3).



**Storm water control measures** means structures or measures to manage storm water on formed surfaces, to reduce the volume or velocity of water run-off so as to reduce its power to entrain sediment; and

**Water run-off control measures** means structures or measures to reduce the volume or velocity of water run-off and consequently reduce its power to entrain sediment.

The most appropriate measure to stop or slow water and reduce *sediment* transport, and to reduce the velocity and volume of water run-off to avoid adverse effects on downstream waterbodies, will need to be determined on a case-by-case basis, with consideration given to site-specific factors such as topography, rainfall, the types of *sediment* and soils present.

There is a range of existing council and/or forestry industry guidance that provides detailed information on the different types of *measures* that can be used to manage *sediment*, storm water and water run-off. MPI has worked with councils and industry to develop Forestry Practice Guides that will provide more detailed guidance on these measures, including design and construction considerations and how they may be used to meet the performance based conditions in the NES-PF. These will shortly be available on the NZFOA website.

The sections below provide some examples of *sediment*, *storm water* and *water run-off control measures*. **This list is not exhaustive**, and it will be up to foresters to determine what management practices they use to meet the requirements in Regulations 31 and 56.

### 2.8.1 Silt fences

Silt fences are designed to intercept *sediment* laden run-off and filter out the larger components. They have a fence-like construction with a layer of filter fabric secured to it. Silt fences and the larger “super” silt fences are a short-term solution to reduce *sediment* until the site stabilises and vegetation re-establishes.

It may be appropriate to use silt fences:

- To reduce the risk of *sediment* entering waterways or other sensitive sites
- In conjunction with *sediment* traps and ponds and low flow cut outs and flumes
- On low gradient sites or for confined areas where the contributing catchment is small, such as short steep batter fills and around very minor water courses.

Avoid using silt fences in channels or concentrated flow paths to capture sediment or reduce water velocity.

### 2.8.2 Sediment traps and soak holes

*Sediment* traps and soak holes are small structures that capture *sediment* laden runoff, reducing the amount of *sediment* that can enter waterways or sensitive sites. They are both constructed in a similar way but work differently:

- *Sediment* traps are used to help settle out heavier *sediment*-laden water before it is discharged; and
- Soak holes are constructed in porous soils like sand and pumice where *sediment* containing water can soak through them.

Within *plantation forests*, *sediment* traps and soak holes are generally located close to *forestry roads* and *landings*. They are part of the package of *sediment* and water controls techniques that increase the life of the road and reduce maintenance costs and potential sedimentation.

It may be appropriate to use *sediment* traps and soak holes:

- To help limit the movement of highly mobile *sediment*.
- To limit the risk of *sediment* entering waterways or other sensitive sites.



- In conjunction with other *water run-off measures*, where necessary, such as at the start or end of water table drainage *culverts*, cut-outs, flumes or prior to silt fences.

*Sediment* traps and soak holes should be avoided where:

- They create safety hazards such as on blind areas of roads or too close to the road carriageway. On steep terrain adequate size cut-outs are difficult to construct near *culvert* mouths as they can encroach into the roadway
- The site doesn't allow for suitable construction. For example, where they increase the risk of bank collapse.
- They are located within the annual flood flow of rivers.

### 2.8.3 *Sediment* retention ponds

*Sediment* retention ponds are larger versions of silt traps. They are used to settle out some of the moderate to fine *sediment* before water is discharged. These structures have capacity to hold large volumes of *sediment* laden water. Decanting earth bunds are a retention pond variant that use a pipe structure in the pond centre as an outlet.

It may be appropriate to use *sediment* retention ponds:

- Where *sediment* has the risk of entering waterways or other sensitive sites.
- To help limit the movement of highly mobile *sediment*.
- In conjunction with other water control structures, where necessary, such as at the start or end of water table drainage *culverts*, cut-outs, flumes or prior to silt fences.

*Sediment* retention ponds should be avoided where:

- They create safety hazards (e.g. if they are too close to the road carriageway).
- The site doesn't have sufficient construction area, as they can be significant structures.
- They are located within the annual flood flow of rivers.
- Where geology and topography are unsuitable and construction of a retention pond could contribute to slope failure.

### 2.8.4 Water table drains

The purpose of a water table drain is to channel and direct water from cut banks or berms along the road to *culverts* or cut-outs. They should be used on *forestry roads* where water needs to be directed along them and can also divert water from across the road surface. This keeps the subgrade drier, which makes for a stronger *forestry road*.

Water needs to be regularly directed off the *forestry road* to stop water table drain scour. To help reduce scour, water tables can be rock-armoured and have check dams to assist in reducing water speed and potential for erosion.

### 2.8.5 Flumes

Flumes help to protect *fill* from erosion by conveying storm water runoff to more stable ground. Flumes can be used to:

- Safely convey runoff from the top of a batter slope to the bottom.
- Prevent erosion from concentrated discharges on to the exposed slope face.
- Direct water through additional *sediment* control structures such as *slash*, *sediment* traps or silt fences.

Forestry flumes are often made of half sections of *culvert* pipes. *Culvert* sock flumes are also used where standard fluming would not work effectively. Galvanised iron sheets are not



suitable fluming as they are prone to failure, they don't bend to follow the land shape and increase the water speed.

### 2.8.6 Mulch

Spreading mulch made of bark, woody material or hay intercepts rain and protects the soil from sheet and rill erosion. Mulch also retains soil moisture, which helps establish vegetative cover more quickly. It can be used in conjunction with grassing.

Use mulch where:

- An instant barrier is required to reduce surface erosion on sites where soil erosion is high risk and may cause problems to the site infrastructure or adversely affect receiving waterbodies.
- Hydro seeding would be too costly.
- Seasonal timing won't allow conventional sowing or hydro seeding methods.
- Once road or track construction, water control, and erosion and *sediment* control structures are completed.

Avoid using mulch on steep and exposed *earthworks* where wind and rain may blow or wash the mulch away.

## 2.9 WATER QUALITY STANDARDS

Regulations 26, 56, 65, 74(6) and 90 are permitted activity conditions in the NES-PF relating to the effects of *sediment* discharges in receiving waters. These conditions require that the relevant *plantation forestry activities* must be managed so that it does not give rise to any of the following effects in receiving waters 'after reasonable mixing':

- Any conspicuous change in colour or visual clarity.
- The rendering of fresh water unsuitable for consumption by farm animals.
- Any significant adverse effect on aquatic life.

These standards have been adapted from section 70(1) of the RMA<sup>19</sup>. They are qualitative standards and there are no quantitative standards within the NES-PF to assist with interpreting these conditions. This is due to the lack of information available at a national level to accurately apply numeric standards for diffuse discharges to all waterbodies in New Zealand. The NES-PF also does not specify spatial and temporal parameters for 'reasonable mixing' as the appropriate 'reasonable mixing' zone can vary depending on the type of receiving *water body*. For example, case law has noted that 'reasonable mixing' is a question of fact in each case<sup>20</sup>.

Many councils already have definitions of 'reasonable mixing' in their plans and/or supporting guidelines. Similarly, some councils have defined what is deemed to be a 'conspicuous change' in visual clarity, including through the use of quantitative parameters. However, these have often been developed for point-source discharges of contaminants not usually present in waterbodies and vary from council to council. In the absence of quantitative parameters in the NES-PF, it is expected that councils will continue to use their own definitions or guidelines to help interpret NES-PF conditions relating to the effects of *sediment* discharges in receiving waters.

---

<sup>19</sup> Omitting the sections referring to conspicuous oil or grease films, scums or foams, floatable or suspended materials or objectionable odour as these are not relevant to *plantation forestry activities*.

<sup>20</sup> *Paokahu Trust v Gisborne District Council* (A162/08).



There is some case law to assist in the assessment of a “*conspicuous change in colour or visual clarity*”. In *Maungaharuru-Tangitu Trust v Hawke’s Bay Regional Council* [2016] NZEnvC 232, the Environment Court concluded that conspicuous does not simply mean visible but rather implies some higher degree of visibility. For the discharge to be conspicuous, the Court considered that it would need to catch the eye. However, the Court also recognised the problems with applying such a test due to the inherent subjectivity of this assessment and the potential for different perspectives depending on the position from which the discharge is viewed.

## 2.10 ANNUAL EXCEEDANCE PROBABILITY

Annual Exceedance Probability (*AEP*) is used in a number of NES-PF regulations, such as:

- The condition for *pruning and thinning to waste* requiring *slash* to be removed from certain areas (Regulation 20(2))
- The design of single culvert *river crossings* (Regulation 46(1))
- *Slash* management during *harvesting* (Regulation 69(3)).

*AEP* is defined in the NES-PF as follows:

*‘means the annual exceedance probability, which is the chance of a flood of a given size (or larger) occurring in any one year, usually expressed as a percentage’*

The *AEP*’s expressed in the NES-PF are either as a 2% or 5% threshold (depending on the regulation). *AEP* is the inverse of event frequency, so essentially represents a “one in fifty” or “one in twenty” year event. *AEP* is used to:

- Calculate an area of land that may be under water during a flood. This will generally be on a proxy basis, based on the observed levels of previous flood damage.
- Determine the size of a rainfall event, which will be assessed from rainfall records coupled with statistical analysis of intensity and duration to calculate event size.
- Estimate flood flows which are required for the design of all *river crossings*, except *fords*, under Regulation 45 using one of the methods referred to in items 3, 4 and 5 of Schedule 2 (Regulation 45).

To calculate *AEP*, the National Institute of Water and Atmosphere (NIWA) provides an on-line tool: High Intensity Rainfall Design System (HIRDS). HIRDS offers landowners, planners and engineers more certainty about the frequency of high-intensity rainfalls, enabling them to better design stormwater drainage systems and other structures. The web-based programme can estimate rainfall frequency at any point in New Zealand and can estimate rainfall depths for different *AEP* events. The HIRDS tool can be found at the following webpage: <https://hirds.niwa.co.nz/>