
1 Background

1.1 Purpose of this Guideline

The Hawke's Bay Regional Council determined that a specific set of guidelines for earthworks and general land disturbing activities associated with forestry operations would be developed using the *Erosion and Sediment Control Guidelines for the Hawke's Bay Region*, as a base. It builds upon the concepts and practices from that Guideline which addresses erosion and sediment control across the region. This guideline also focuses on erosion and sediment control, but from a forestry perspective, and so there are control measures in this guideline that are not contained within the Erosion and Sediment Control Guidelines, and vice versa. Following the practices and methodologies in this guideline will minimise any erosion and sedimentation that may arise from forestry operations and help forest managers and contractors meet their statutory requirements.

1.2 Guideline Layout

The preferred concept for developing the guideline was to incorporate a series of "toolboxes" for specific operations. This concept uses a mix and match approach and enables a number of control options to be considered that can obtain a minimum standard of environmental outcome.

This guideline is split into three sections. The first is an introductory section that discusses whether a resource consent is needed, potential sediment related environmental impacts, erosion and sediment control principles, and earthworks and harvest management plans.

The second section provides technical specifications on a selection of commonly used erosion and sediment control practices.

The third section discusses the principles associated with the application of the various control measures in relation to different forestry operations (roading, tracking, landing sites, etc).

1.3 Extent of the Guideline

The objective of this guideline is to provide information on practices and methodologies that will minimise any erosion and consequent sedimentation that may arise from forestry practices. They do not replace or override in any manner other statutory requirements such as the Health and Safety in Employment Act or resource consents from the Hawke's Bay Regional Council and various Territorial Authorities.

In addition, it is suggested that you contact the the Hawke's Bay Regional Council to determine the status of the relevant regional plan rules and confirm that your operation, including any works proposed in streams, complies with the relevant regulations.

2 Do I need a Consent

2.1 General

There are two levels under the Regional Plan that address vegetation clearance: Rule 7 related to Permitted Activities and Rule 8 related to Restricted Discretionary Activities. Those two rules state the following:

Rule 7 Permitted Activity

Vegetation Clearance or Soil Disturbance Activities²⁵

- a. All cleared vegetation, disturbed soil or debris shall be deposited or contained to reasonably prevent the transportation or deposition of disturbed matter into any water body²⁶.
- b. Vegetation clearance or soil disturbance shall not give rise to any significant change in the colour or clarity of any adjacent water body, after reasonable mixing.
- c. No vegetation clearance shall occur within 5 metres of any permanently flowing river, or any other river with a bed width in excess of 2 metres, or any other lake or wetland, except that this condition shall not apply to:
 - i. The clearance of plantation forestry established prior to the date of this Plan becoming operative, or
 - ii. The areas identified in Schedule X to this Plan.
- d. Deposition of soil or soil particles across a property boundary shall not be objectionable or offensive, cause property damage or exceed 10 kg/m².
- e. Where the clearance of vegetation or the disturbance of soil increases the risk of soil loss the land shall be:
 - i. Re-vegetated as soon as practicable after completion of the activity, but in any event no later than 18 months with species providing equivalent or better land stabilisation; or
 - ii. Retained in a manner which inhibits soil loss.

²⁶ Explanation of Rule 7 (a): In considering whether condition/standard/term (a) in Rule 7 has been met, Council shall have regard to recognised Industry Codes of Practice, Best Practice Guidelines and Environmental Management Plans relevant to and adopted in carrying out the activity.

If a resource consent is needed, then this must be obtained before any work is undertaken, and the conditions of the resource consent must be followed.

Please also note that Rules 7 and 8 relate only to the Hawke's Bay Regional Council. The city and district councils may also have regulatory controls, such as for earthworks, which the forester should be aware of. A resource consent may be required from these councils as well, so the relevant council should also be contacted to determine their regulatory requirements.

Rule 8 Restricted Discretionary Activity

Vegetation clearance or soil disturbance activities, which do not meet the conditions in Rule 7²⁶.

- a. The conditions, standards or terms which the activity cannot comply with, and the related environmental effects.
- b. Monitoring and reporting requirements.
- c. Duration of consent.
- d. Review of consent conditions.

Applications may be considered without notification, without the need to obtain the written approval of affected persons.

Vegetation clearance and soil disturbance exclude:

The normal maintenance of legally established structures, roads, tracks, railway lines and river beds.

The clearance of grasses, forest thinning, and agricultural and horticultural crops.

The clearance of isolated or scattered regrowth on productive pasture.

The clearance of any indigenous vegetation understorey beneath plantation forests.

The clearance of noxious weeds covered by the Regional Plant Pest Management Strategy prepared under the Biosecurity Act, 1993.

Non-motorised soil disturbance activities.

Thrusting, boring, trenching or mole ploughing associated with cable or pipe laying or a network utility operation.

Soil disturbance undertaken by a mine or quarry operation which either had a valid mining licence at the date the Proposed Regional Resource Management Plan was publicly notified (15 April 2000) or is lawfully established.

Cultivation and grazing.

Foundations works for structures.

Construction and maintenance of fences and drains.

²⁶ Explanation of Rule 7 (a): In considering whether condition/standard/term (a) in Rule 7 has been met, Council shall have regard to recognised Industry Codes of Practice, Best Practice Guidelines and Environmental Management Plans relevant to and adopted in carrying out the activity.

Note: 10 kg/m² of dry soil is equivalent to 5 mm depth assuming a specific gravity of 2 kg/litre.

2.2 Resource Consent Requirements

An application to the Hawke's Bay Regional Council will require the appropriate application form to be filled in, relevant supporting information to be attached, and a deposit fee forwarded.

The fundamental aspect of the supporting information is the erosion and sediment control plan, which forms part of the Harvest Management Plan or Harvest Plan (see section 5 of this guideline). The erosion and sediment control plan, along with the supporting text and any necessary calculations, should address the potential effects of the proposed activity, and the various ways in which these may be avoided, remedied or mitigated.

An application for resource consent will involve a combination of technical and statutory matters associated with the Resource Management Act 1991. It is

considered good practice to lodge an application early and/or have a pre-application meeting with the Hawke's Bay Regional Council, as works will not usually be able to commence until the required approvals have been obtained.

3 Potential Impacts of Earthworks and Vegetation Removal Operations

All streams have a natural sediment load that varies primarily with rainfall, geology, topography and land use, both past and current. This natural level of sediment can be greatly increased by earthworks to a level that can result in significant adverse ecological effects. In addition, because of their physical and chemical characteristics, clay-rich soils in some portions of the Hawke’s Bay Region are very difficult to remove once they have become suspended and are easily transported to lower receiving environments (eg estuaries).

Poorly managed earthworks and vegetation removal operations can have significant adverse effects on watercourses. There are a number of ways in which these effects may occur, such as:

- The failure to protect disturbed areas from erosion and/or treating runoff from earthworks; as well as effects resulting from mass-movement of soil (slumping) leading to an increased sediment load in watercourses. This is likely to affect water quality and the ability of aquatic life to survive and/or migrate;
- The damage or disturbance of the stream bed and banks during the construction of roads, tracks, culverts or the harvesting of trees. This may result in physical barriers to fish migration;
- The physical disturbance of stream bed and banks from the installation of stream crossings, as well as felling trees into watercourses and dragging trees across or along stream channels. This may result in physical barriers to fish migration.
- An increase in water temperature due to loss of shading from the removal of tree canopy;
- Depletion of oxygen in watercourses as any logging slash that has been deposited in watercourses decays. Barriers to water flows eg blocking of culverts from slash;
- Water flow may be affected by changes in vegetation cover impacting upon catchment hydrology. These may create areas of increased erosion potential.

Stream headwaters, where production forestry often occurs, often have high ecological diversity and environmental value due to their relative intactness, compared to more modified lengths of streams and rivers lower down in the catchment.

This is not to undervalue the modified stream reaches but illustrate that these headwater areas have a higher level of susceptibility to environmental

degradation due to their limited modification. Poorly designed and managed earthworks can directly impact on these values in the upper reaches. Earthworks

Example of disturbance of the stream bed with debris and sediment from uncontrolled earthworking & harvesting operations



and harvesting operations therefore need to be well planned to ensure that the risks of erosion and the resultant sedimentation of watercourses is managed and the effects minimised.