

# 13.0 Soil Conservation

## 13.1 Introduction

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The land ecosystems of Marlborough are composed of mountains, hills, valleys and plains and the life systems contained within them. They include the plants, animals and organisms which inhabit and form part of those ecosystems. The land ecosystems are intimately linked with the fresh and coastal water ecosystems of the Marlborough Sounds area.

Under the Act the Marlborough District Council, amongst other things, has statutory responsibility to control the use of land for the purposes of soil conservation.

The Act provides that no person may use any land in a manner that contravenes a rule in the Plan unless a resource consent is obtained. The corollary to this is that land uses are permitted unless controlled by the rules in the Plan.

In the context of the Marlborough Sounds Resource Management Plan the Council seeks to:

- Protect land resources from the adverse effects of land uses and activities (for example, maintain the life-supporting capacity of soil by minimising erosion resulting from land-based activities); and
- Enable people and communities, including future generations, to use land resources provided their activities do not prevent the sustainable management of land and water resources.

## 13.2 Issue

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**Effects from land use activities that cause a reduced life-supporting capacity of soils, reduction to the natural and cultural values of the land, or increased likelihood of erosion, flooding or material in water.**

Soil retention is the first step to maintaining the life-supporting capacity of the land, and maintaining the quality of fresh water within the Pelorus, Rai and Kaituna Rivers, and coastal water within Pelorus and Queen Charlotte Sounds.

Soil that has been cleared of vegetation can become exposed to the erosive forces of rain, wind and frost. If at the same time the soil has been loosened by cultivation or excavation it is more easily eroded. Eroded soil moves downhill or is blown by the wind and will eventually find its way into the rivers or Sounds, causing sedimentation.

There are, however, situations where land disturbance is an essential component of the sustainable management of a resource, for example the clearance of existing drainage systems. The effects of this form of land disturbance are minor and the benefits significant provided that care is taken to ensure that the likelihood of erosion, flooding or material in water is minimised.

Sedimentation can cause damage to marine and freshwater ecosystems, and may reduce the water quality. Excavation can destabilise hill slopes, particularly on steep hills. When combined with high rainfall, excavation can cause erosion.

Slips can damage the land surface, block waterways and deposit soil in flood channels and damage property. The life-supporting capacity of soil is dependent on soil quality that results from the physical, chemical and organic condition of the soil. Soil quality is often referred to in terms of structure, drainage and fertility. Hill soils are at risk from burning practices which can strip nutrients from the land, and mechanical damage which can reduce slope stability and increase soil compaction.

The Marlborough Sounds are formed by drowned river valleys. The beds of Pelorus and Queen Charlotte Sounds are generally mud bottomed, which indicates extreme levels of sedimentation in the past. Some of this sedimentation will be attributable to land use practices in the past. The majority of the sediment relates to the Sounds origins and the effects of natural events, including storms and earthquakes.

Soil erosion and land disturbance also puts archaeological, cultural and historical artifacts and sites at risk. For example, excavation may disturb waahi tapu or damage pa sites.

### 13.3 Objectives and Policies

Objective 1	The avoidance or mitigation of the adverse effects of inappropriate land use practices, including those which reduce the life-supporting capacity of soil, increase sedimentation of surface and coastal waters, and increase the risk of erosion and damage to natural and iwi values.
Policy 1.1	Avoid or mitigate contaminated run-off arising from land disturbance activities entering the marine ecosystem.
Policy 1.2	Avoid or mitigate contaminated run-off arising from land disturbance activities entering wetlands, lakes and rivers.
Policy 1.3	Avoid or mitigate the reduction of soil fertility resulting from land disturbance or vegetation removal.
Policy 1.4	Require that any known land stability hazard be identified and addressed before beginning any land disturbance activity.
Policy 1.5	Within areas of known natural hazard, require resource consent for activities likely to increase the risk, or be affected by that hazard so as to avoid or mitigate land stability, flood and navigational hazards.
Policy 1.6	Ensure the availability of a public register of areas of known natural hazard.
Policy 1.7	Encourage resource users to check the NZ Historic Places Trust Register for cultural, historical and archaeological sites on the land that they are proposing to disturb. Council will make information from the register available to resource users.

Policy 1.8	Require resource users to stop work and report to Council if historical, cultural or archaeological artefacts or waahi tapu are unearthed during land disturbance or land excavation.
Policy 1.9	Ensure consultation with relevant iwi on land disturbance activities requiring a resource consent.
Policy 1.10	Ensure consultation with the New Zealand Historic Places Trust on land disturbance requiring a resource consent.
Policy 1.11	Recognise that some activities which involve disturbance of the land surface are an essential part of the sustainable management of other physical resources.

*The Council has a responsibility under section 30 of the Act to control the use of land for the purpose of soil conservation. Unsound land management practices may lead to an unsustainable land use regime.*

*In the past uncontrolled land disturbance has given rise to significant adverse effects in the Marlborough Sounds area. Control over the effects are necessary to achieve a sustainable land management regime.*

*The policies will apply to all resource use which involves disturbance to the land surface. Prior to commencing land disturbance work and particularly upon application for a resource consent for this activity the Council will need to be satisfied that adequate consultation has taken place.*

## 13.4 Methods of Implementation

Rules	<p>Land disturbance having a minor effect will be permitted subject to compliance with specified performance criteria which seek to reduce sedimentation, maintain soil quality, reduce the risk of damage from natural hazards, and protect ecological, cultural, and economic values.</p> <p>Consents with conditions will be required for land disturbance activities which fall outside that which is permitted. Conditions will be imposed to avoid, remedy or mitigate the adverse effects of land disturbance on the potential and life-supporting capacity of the soil and water resources of the Marlborough Sounds area.</p> <p>Rules are also included to avoid or mitigate the effects of land use on water bodies by such means as specification of appropriate riparian management criteria according to a schedule of significant water courses that have been identified on the basis of natural hazard management, provision of public access and recreation, riparian habitat diversity, in-stream habitat and water quality.</p>
Education	Information and education programmes will be prepared to address land disturbance issues and the effects of land disturbance, in particular on water bodies, with reference

	<p>to natural hazard management, provision of public access and recreation, riparian habitat diversity, in-stream habitat and water quality.</p> <p>A guide for land disturbance activity will be produced containing information relating to the effects of land disturbance on the soil resource, surrounding environment, and wetlands, rivers, lakes and the sea. Information relating to less disruptive techniques for disturbing land and means to minimise the effects of land disturbance will also be included. The Council will make this available to farmers, foresters, site developers and other resource users.</p>
Maps	<p>Volume Three of the Plan contains a series of indicative maps which record areas of known natural hazard to assist in the identification of such areas. Refer also to Chapter 16: Natural Hazards.</p>

*An element of land disturbance must be provided for to enable utilisation of the land resource. The rules will provide certainty as to what is and is not acceptable.*

*Land disturbance is undertaken by farmers, foresters, roading constructors and developers of residential, and other urban sites. Those people who undertake land disturbance may have little knowledge of the effects of their activities on the soil resource being disturbed or the surrounding environment. This includes the effects on the fresh water draining the area, and wetlands, lakes and rivers and the sea receiving that drainage water.*

*Often people who understand the effects of their activities will respond to new information by altering their activity to avoid or reduce adverse effects which could prevent sustainable management of the land and water resources of the Marlborough Sounds area.*

## 13.5 Anticipated Environmental Results

Implementation of the policies and methods in relation to soil conservation will result in:

- Maintenance and enhancement, of the life-supporting capacity of soil and ecosystems;
- The natural clarity of any permanently flowing river, lake, wetland or sea not being significantly reduced due to sediment laden runoff water originating from the site of a land disturbance operation; and
- Historical, cultural or archaeological artifacts, sites or values protected from land disturbance.