

## 3.0 Freshwater

### 3.1 Introduction

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The Marlborough Sounds and water are synonymous. Without it the Sounds would not be the Sounds. For the most part water quality in the Sounds is reasonably good and is reflected in the uses and values associated with the area. Some of these, such as marine farming, tourism, recreation and use by Maori for mahingakai, are dependent on clean, safe water.

Nevertheless there are some problems which arise from threats to the current state of water quality. These threats tend to be localised, for example around sewage outfalls or temporary, like the contamination of water in the Pelorus Sound by land run-off following heavy rain. Seasonal water availability in some areas during summer months has implications in terms of ecosystem stress while contamination of run-off water from land use can lead to a permanent reduction in water quality.

Because of the inter-related and dynamic nature of ecosystems, implementation of Regional Policy Statement objectives will have many implications for all aspects of the management of the water (and other) resources of the Marlborough Sounds area.

For the purposes of the Plan, water ecosystems have been separated into three types. This follows on from the Marlborough Regional Policy Statement. These are:

- Wetlands, Lakes and Rivers;
- Groundwater; and
- Coastal Marine.

This chapter establishes objectives, policies and methods for freshwater ecosystems. That is, wetlands, lakes and rivers (surface freshwater) and groundwater. Coastal water management (including objectives, policies and methods for coastal water quality) has been incorporated into Chapter 9 Coastal Marine.

### 3.2 Wetlands, Lakes and Rivers

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#### 3.2.1 Issue

**Degradation of the quality of water within wetlands, lakes and rivers due to use and development of resources.**

While large areas of the Marlborough Sounds, in particular the Wakamarina and Upper Pelorus catchments, are still in their pristine state, the remaining area has a long history of human occupation and agricultural development. As a consequence, natural waterways and lake systems have been subject to many decades of run-off from land use activities.

Today the quality of fresh surface water within the Marlborough Sounds catchments varies depending on location and time of year. While the overall standard of surface water is reasonably good, there are localised areas which

at times exhibit lower water quality due to a build-up of sediment, nutrients or bacteria. The seasonality of water quality problems is illustrated by elevated bacteria in the Kenepuru Sound during summer corresponding to the influx of holiday makers, and elevated nutrient loading coinciding with winter run-off in the lower Kaituna Valley, lower Pelorus and Rai Valley areas.

While in many instances reduced water quality is of little significance apart from indicating a possible future problem, there are occasions where it has not been of a satisfactory standard to allow contact recreation activities or the gathering of aquatic fish and plants. The Kaituna and Rai Valleys and the Kenepuru and Inner Queen Charlotte Sounds have been identified through observation and measurement as being more susceptible than other areas to contamination. Of principal concern for the waterways of the Lower Kaituna and Rai Valleys has been levels of bacteria and to some extent nitrogen originating from agricultural activities. In the Kenepuru and Ngakuta/Momorangi Bay areas levels of bacteria from effluent disposal systems reach high levels during the summer tourist season.

The Marlborough Regional Policy Statement has emphasised the importance of freshwater quality by setting as an objective that it should be maintained at a level which provides for the sustainable management of aquatic ecosystems. This document also recognises that a long-term strategy is necessary to meet this standard.

Because these catchments and the freshwater bodies within them all drain into the coastal waters of the Marlborough Sounds, any degraded freshwater will also affect coastal ecosystems and compound any coastal water quality problem. It is important to maintain satisfactory water quality within the source areas.

Degradation of water quality may be related to land use and waste disposal practices. Consequently, it is necessary to control point source discharges which directly contaminate freshwater, and correct land use practices which indirectly contribute pollutants. At present these land-based activities have contributed to a minor degradation in water quality in most areas. To avoid further reductions in water quality and to improve standards in other areas such as the Lower Kaituna Valley, it is necessary to change some land use practices. Refer also to Chapter 13 (Soil Conservation) and Chapter 14 (Discharges to Land).

### 3.2.2 Objectives and Policies

Objective 1	Maintenance and enhancement of aquatic ecosystems and the management of the effects of activities on water quality in wetlands, lakes and rivers that enables: a) Contact water recreation; b) Food gathering; or c) Cultural integrity.
Policy 1.1	Avoid the direct or indirect discharge of untreated sewage or industrial/trade waste to freshwater.
Policy 1.2	Avoid the discharge of contaminants into freshwater where it will modify, damage or destroy any significant ecological value.

Policy 1.3	<p>Avoid the discharge of contaminants into freshwater where it will adversely affect:</p> <ol style="list-style-type: none"> <li>a) areas identified by iwi as being of special spiritual, cultural or historical significance;</li> <li>b) areas identified as an outstanding landscape; and</li> <li>c) quality of water in the coastal marine area.</li> </ol>
Policy 1.4	<p>When assessing a permit to discharge water or contaminants into a wetland, lake or river have particular regard to the classification of that water body and the need to:</p> <ol style="list-style-type: none"> <li>a) Preserve, and where appropriate, restore the natural character of wetlands, lakes and rivers and their margins;</li> <li>b) Protect public health;</li> <li>c) Protect the visual aesthetics of the area;</li> <li>d) Protect the olfactory aesthetics of the area;</li> <li>e) Protect sites of spiritual, historical or cultural significance to Maori identified in accordance with Tikanga Maori, including waahi tapu, tauranga waka, mahinga maataitai and taonga raranga;</li> <li>f) Avoid, remedy or mitigate adverse effects on ecological systems including natural movement and productivity of biota, natural biodiversity and adverse effects on: <ul style="list-style-type: none"> <li>• Fish spawning and nursery areas;</li> <li>• Bird-breeding and nursery areas;</li> <li>• Fish and bird migration through estuaries;</li> <li>• Feeding patterns;</li> <li>• Habitats important to the continued survival of any indigenous species;</li> <li>• Wildlife and freshwater biota; and</li> <li>• The intrinsic value of ecosystems.</li> </ul> </li> </ol>
Policy 1.5	Avoid, remedy or mitigate the adverse effects of land use activities on the quality of freshwater.
Policy 1.6	Promote and encourage land use practices and measures which avoid, remedy or mitigate adverse effects on water quality.
Policy 1.7	Promote and where necessary specify appropriate riparian management practices that will provide for: natural hazard management; provision of public access and recreation; and protection of riparian habitat diversity; in-stream habitat; and water quality.

*The Pelorus, Kenepuru and Queen Charlotte Sounds are enclosed waterbodies with restricted flushing flows within the inner parts of these Sounds. Marlborough Sounds water quality is in part dependent on the freshwater flows into them. This means that the policies contained within Section 9.5.3 will apply to discharges to freshwater where it impacts on coastal water quality.*

*Water classification is an effective way of managing water that enables the maintenance or enhancement of water quality as appropriate. The classifications, of Class F for surface water and Class DW for groundwater, are consistent with the Marlborough Regional Policy Statement. Applying additional classifications over the underlying classifications for particular resources or parts of a resource will enable specific management to protect local values. This is important because classifications F and DW have standards that relate only to the protection of the fishery or drinking water aspects of the resource. Other values such as amenity or contact recreation can be maintained through the use of specific classifications. The narrative and alphanumeric standards used to define the water classifications are given in Appendix H, Volume Two.*

*Defining and requiring all mixing zones to meet a prescribed formula will ensure a consistent and equitable approach to water quality management and provide certainty for plan users.*

*Overall the policies will work towards enabling the continued health of the freshwater ecosystems to provide for the needs of the community both now and in the future.*

### 3.2.3 Methods of Implementation

<p>Rules</p>	<p>Discharges of untreated human sewage into freshwater is prohibited. Rules and standards relating to discharges to land, which affect water quality, are included. Other discharges to freshwater are not provided for, thus, resource consents will be required for discharges to water and consent only granted where adverse effects are able to be avoided, remedied or mitigated.</p> <p>Existing consents for discharges will only be renewed after taking into account the above objectives and policies upon their expiry. In particular, a reduction in the level and concentration of contaminants will be required for discharges which cause adverse environmental effects, along with a timeframe for improvements of the discharge.</p> <p>Controls and guidelines will be adopted in respect of land and vegetation disturbance likely to adversely affect water quality in wetlands, lakes and rivers.</p> <p>Standards will define limits for the deposition or discharge of material to land which could result in contaminants being carried by run-off or leaching into a fresh water body or coastal water.</p> <p>A schedule and associated maps identifies significant water bodies where rules apply to manage adverse effects of activities on aquatic ecosystems and adjacent riparian margins.</p>
<p>Education/ Advocacy</p>	<p>The Council will develop and implement an educational strategy to support the objectives and rules contained in the Plan.</p> <p>The Council will provide information, technical advice and other assistance on ways to maintain, and where appropriate, improve the quality of non-point source discharges.</p>

	<p>For water bodies not identified for regulatory methods of riparian management, education and advocacy methods will target in particular, those areas identified by a working group of relevant interested organisations and individuals as having significant values that require protection or enhancement of riparian management by non-regulatory means.</p> <p>The Council will advocate the development of national policies relating to the use of agricultural chemicals.</p>
Liaison	<p>The Council will liaise with organisations, the Tangata Whenua and interest groups regarding the state of, and enhancement of, fresh water quality.</p> <p>In particular, the Council will liaise through a riparian management working group comprising of relevant organisations and individuals. The aims of the group will be to review and prioritise water bodies for non-regulatory methods of riparian management and determine appropriate methods of management. This working group will complete the initial prioritisation of water bodies by the end of the year 2000.</p>
Monitoring	<p>The Council will undertake comprehensive fresh water quality monitoring.</p> <p>Monitoring the effectiveness of regulatory and non-regulatory methods of riparian management in terms of achieving natural hazard management, provision of public access and recreation, protection and enhancement of riparian habitat diversity, in-stream habitat and water quality.</p>

*Rules are necessary in part because the Act makes it an offence to discharge water into water or contaminants to land or water without a consent (refer section 15 of the Act). Thus some provision needs to be made in the Plan in order for the community to be able to make use of the resource where any adverse effects on the environment are able to avoided, remedied or mitigated.*

*It is however acknowledged that non-regulatory methods may be more appropriate and effective in some circumstances in achieving the objective, and accordingly these methods are also incorporated into the Plan.*

### 3.2.4 Issue

**Degradation of the quantity of surface water within wetlands, lakes and rivers due to use and development of resources.**

Historically, the Marlborough Sounds has had sufficient surface water resources available to meet the requirements of water users in the area. However, increased subdivision and development over recent years, corresponding with an increased demand for surface water resources, has created at times a seasonal water shortage.

For the most part though, there is plenty of water available in the Marlborough Sounds area for most anticipated uses for the foreseeable future.

A normal excess of availability over demand is due primarily to a high rainfall and a relatively low demand. Annual rainfall varies between a maximum of 2400 and a minimum of 1200 mm throughout the Sounds, compared to Blenheim's total of around 700 mm per year. This abundance of rainfall is exemplified in the permanent nature of most river regimes, luxuriant vegetative growth and high watertables. The exceptions are areas located along narrow isthmus such as the one separating Queen Charlotte Sound from Kenepuru Sound. These areas generally have less storage capacity in surface water bodies and receive less rainfall.

In areas of the Sounds there is at times, a seasonal water shortage. It is therefore important to ensure that adequate storage facilities are available. Storage is generally able to provide for any temporary shortfall. In addition, the use of groundwater resources needs to be encouraged. The high watertable levels within the Sounds and particularly the hinterland area, means there is an abundance of, largely unused, groundwater.

Current pressure on water resources is only likely to adversely affect some of the rivers and streams within the Marlborough Sounds area, in a short-term seasonal manner, during a dry year. The policies will establish an environmental bottom line flow, based on the low flow of a particular catchment, to guide and ensure sustainable water management. The policies will work in with a precautionary approach towards the issuing of water permits and careful monitoring of water quantity within the freshwater bodies of the Marlborough Sounds and freshwater habitats.

### 3.2.5 Objectives and Policies

Objective 1	That the natural functioning of ecosystems is not disrupted by the taking, use, damming and diversion of fresh surface water.
Policy 1.1	Adopt a precautionary approach towards the allocation of surface water resources.
Policy 1.2	Give priority to the maintenance of fresh water flows over abstraction from permanently flowing rivers.
Policy 1.3	Avoid adverse environmental effects on fresh water ecosystems from the taking of fresh surface water. Generally this will mean not more than 30% of the five year seven day low flow is allocated for abstraction.
Policy 1.4	Encourage the use of groundwater (where this is available) as an alternative to surface water, provided it does not have an adverse effect on the environment.
Policy 1.5	Encourage, and where appropriate require, adequate water storage facilities in areas affected by seasonal water shortages, while avoiding, remedying or mitigating adverse environmental effects.
Policy 1.6	Activities, resource use, development and subdivision should not be dependent upon water being available from the natural resource base when disruption to the natural functioning of the ecosystems is likely.

*Section 14 of the Act places restrictions on the taking of water. Policy is required to determine the circumstances in which the Plan will allow the abstraction of fresh surface water.*

*There is generally adequate freshwater available in the Marlborough Sounds to meet most demands from land-based activities and development. Given that one of the important principles guiding the Plan is to protect the natural character of wetlands, lakes and rivers, it is necessary to ensure that abstraction of fresh surface waters does not give rise to environmental stress. Policy 1.3 provides guidance in the form of an allocation limit based on the minimum low flow of a stream or river. The low flow being the lowest level recorded for seven continuous days over a five year period.*

Objective 2	The avoidance or minimisation of conflicts between water users.
Policy 2.1	To promote the sustainable, equitable, efficient and beneficial use of water, when allocating surface water.

*In some localities there will be insufficient surface water available for abstraction at certain times during the year. That is, demand for water will be greater than that which can be supplied from a particular surface water body. This could lead to conflicts among users as to priority or claim to the resource. Policy 2.1 indicates priority principles for resolving any potential conflicts. These are based on Policy 7.2.3(b) of the Marlborough Regional Policy Statement.*

### 3.2.6 Methods of Implementation

Rules	<p>The Council will control the abstraction of surface water and allocate the amount of water that can be taken subject to adequate flows and levels remaining in wetlands, lakes and rivers.</p> <p>Controls or guidelines, whichever is appropriate to the circumstances, which have regard to the availability of surface waters for abstraction, will attach to water permits for abstractions of surface waters.</p> <p>In areas affected by temporary water shortages, storage will be required as a condition of subdivision.</p>
Liaison/Early Warning System	The Council will liaise with fresh surface water users and provide an early warning system for potential ecological stress brought on by extraction during periods of low seasonal flow.
Advocacy and Education	The Council will encourage the establishment of alternative systems such as rain water storage, efficient use of water, and water conservation measures to reduce reliance on abstraction during periods of low seasonal flow.
Monitoring	The Council will continue to monitor the flows and levels of freshwater bodies, paying particular attention to those areas where abstraction occurs.

*Rules are necessary in part to control the circumstances under which abstraction is permitted. Changes in attitude towards the conservation of the resource are best achieved through education.*

### 3.3 Groundwater

#### 3.3.1 Issue

The groundwater resource susceptibility to degradation due to use and development of resources.

Groundwater is an important source of water for many purposes in the lower Kaituna, Pelorus and Rai Valley areas. Uses include municipal supply for the township of Havelock, industry such as mussel processing, dairy shed and domestic supply. Generally though, it is a very under used resource throughout the Marlborough Sounds plan area. In some areas, such as the outer Marlborough Sounds, this is due to limited extent and availability.

Because the principal groundwater systems are located in a high rainfall area there is little concern over their ability to supply foreseeable demand with the exception of the Havelock Harbour area where there is the potential for saltwater intrusion. Generally speaking there is an excess of groundwater from an agricultural perspective.

Of more concern is the susceptibility of these shallow and generally unconfined aquifers to contamination from agricultural run-off, leaching of nitrates and effluent disposal systems. Watertables are close to ground level in many areas and provide easy access for contaminants from waste and leave a shallow depth in which to filter potential pollutants. High rates of rainfall increase the potential for leaching of contaminants from the surface to the shallow watertable. The inter-dependence between groundwater and surface water resources means the contamination of one will potentially lead to the contamination of the other.

#### 3.3.2 Objectives and Policies

Objective 1	Management of the effects of activities so that: the quality of groundwater is maintained, or where appropriate enhanced; and the quantity of groundwater is maintained at a level which will protect and sustain ecosystems.
Policy 1.1	Avoid, remedy or mitigate the reduction of groundwater quality by contamination from land use activities that discharge to land and water, or disturb the land.
Policy 1.2	Avoid, remedy or mitigate any adverse environmental effects arising from the taking and use of groundwater.
Policy 1.3	Avoid any allocation of groundwater resources which could result in a permanent lowering of water levels below the natural fluctuation range.
Policy 1.4	Avoid, remedy or mitigate adverse effects arising from the construction or alteration of bores.



*The objective and policies are designed to provide for the sustainable management of the groundwater resource in a way which will safeguard surface water ecosystems and provide for the wellbeing of present and future generations.*

*Wide fluctuation in the levels and flows of water in aquifers occur naturally. These fluctuations relate to seasonal and annual variations of river flows and rainfall. The groundwater systems have evolved to accommodate the natural range of fluctuations in flows and levels of water. The use of water should not alter aquifer flows and levels in a way which is irreversible so that the groundwater levels are unable to recover.*

*Refer to Chapter 14 (Discharges of Waste to Land) for more detailed policies relating to the effects of land use activities on water quality.*

### 3.3.3 Methods of Implementation

Rules	Council will control the abstraction of groundwater, beyond a determined level, with safeguards to protect freshwater flows and levels.
Investigation	Promote the investigation of potentially contaminated sites and promote remedial works where problems are identified.  Investigate the operation of septic tanks in areas where contamination of groundwater is identified and require remedial works to be carried out.
Education	Undertake an education programme in the use and maintenance of septic tank systems to minimise the effects of sewage effluent on land and water ecosystems.  Undertake an education programme addressing the potential of land uses to contaminate infiltration waters recharging aquifers.
Research	Support research into the cumulative effects of land-based activities on groundwater quality.

*Section 14 of the Act restricts the taking of water, therefore, rules are necessary to clarify the circumstances under which groundwater may be extracted. The investigative and research methods are directed at enhancing existing water quality.*

*Further methods relating to land use effects on groundwater quality are included in Chapter 14 (Discharges of Waste to Land).*

## 3.4 Anticipated Environmental Results

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Implementation of the policies and methods relating to water will result in:

- Protection of all wetland, lake and river ecosystems while enabling the community to make use of the fresh surface water resource;

- Maintenance of food gathering and recreational amenity values relating to water ecosystems;
- The safeguarding of areas of special freshwater ecological significance;
- Protection of visual aesthetics;
- The natural clarity of any permanently flowing river or lake not conspicuously reduced due to sediment or sediment laden discharge originating from the site of a land disturbance operation;
- Land disturbance which does not result in woody material being left in any permanently flowing river, lake or wetland;
- Preservation of the natural character of wetlands, lakes, rivers and their margins; and
- Continued maintenance of the water within the aquifers in a condition and at a level which makes them suitable and available for use as indicated by the level of the watertable and the quality of the water.

The following Policies have been added to this plan as directed by the National Policy Statement Freshwater management 2011 in accordance with Section 55 of the Resource Management Act 1991.

### 3.5 Water Quality

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1. When considering any application for a discharge the consent authority must have regard to the following matters:
  - a) the extent to which the discharge would avoid contamination that will have an adverse effect on the life-supporting capacity of fresh water including on any ecosystem associated with fresh water and
  - b) the extent to which it is feasible and dependable that any more than minor adverse effect on fresh water, and on any ecosystem associated with fresh water, resulting from the discharge would be avoided.
2. This policy applies to the following discharges (including a diffuse discharge by any person or animal):
  - a) a new discharge or
  - b) a change or increase in any discharge -  
  
of any contaminant into fresh water, or onto or into land in circumstances that may result in that contaminant (or, as a result of any natural process from the discharge of that contaminant, any other contaminant) entering fresh water.

3. This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management takes effect on 1 July 2011.

### 3.6 Water Quantity

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1. When considering any application the consent authority must have regard to the following matters:
  - a) the extent to which the change would adversely affect safeguarding the life-supporting capacity of fresh water and of any associated ecosystem and
  - b) the extent to which it is feasible and dependable that any adverse effect on the life-supporting capacity of fresh water and of any associated ecosystem resulting from the change would be avoided.
2. This policy applies to:
  - a) any new activity and
  - b) any change in the character, intensity or scale of any established activity -  
that involves any taking, using, damming or diverting of fresh water or draining of any wetland which is likely to result in any more than minor adverse change in the natural variability of flows or level of any fresh water, compared to that which immediately preceded the commencement of the new activity or the change in the established activity (or in the case of a change in an intermittent or seasonal activity, compared to that on the last occasion on which the activity was carried out).
3. This policy does not apply to any application for consent first lodged before the National Policy Statement for Freshwater Management takes effect on 1 July 2011.

