

Chapter 8

WATER

PREAMBLE

Water is essential to sustain life. While water is not normally in short supply on the West Coast, occasional conflicts between users occur. Of those who take water the main users are pastoral farmers for domestic and stock requirements, residential and industrial users. The main industrial users are coal and gold miners, sawmills, abattoirs and primary processors. Water is also taken from rivers in the region to generate electricity.

The quality of waters (rivers, wetlands, lakes, estuaries and the sea) is an important resource management issue (see also Chapter 9 on Habitats and Landscapes). The relationship between Poutini Ngai Tahu and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga is a matter which the Regional Council is required to recognise and provide for as a matter of national importance. (Refer to Chapter 5 on Matters of Significance to Poutini Ngai Tahu). In particular, water gives meaning to the identity of Poutini Ngai Tahu.

Maori classification of water is related to its use. The purest form of water, *Waiora*, is usually used for ritual purposes as it is considered to be the physical and spiritual embodiment of the tears of Ranginui, as he wept for Papatuanuku. *Waimaori* is drinking water for normal use. *Waitohi* is water used for naming and dedicating children. *Waimate* is not drinkable as it is considered to be physically and/or spiritually polluted, and has lost its life sustaining properties.

The West Coast has a relatively low and scattered population. The region's natural beauty and resulting popularity with tourists is, in no small measure, due to the pristine nature of most of its water resources. Water also has high recreational and habitat values so it is important to safeguard or protect future needs for water, protect its life supporting capacity and avoid, remedy or mitigate adverse environmental effects arising from its use. However health risks arising from the use of some of the region's water resources exist (Southern Regional Health Authority 1996).

Section 14 of the Act places restrictions on taking, using, damming or diverting water. Section 15(1)(a) controls the discharge of contaminants or water into water, while section 15(1)(b) controls the discharge of contaminants to land in circumstances where the contaminant or some variation of it may enter water. Clause 1(a), (b), (c) and (e) of Part I of the Second Schedule of the Act discusses matters relating to water which may be included in a RPS.

ISSUE 8.1.

Water quantity.

Adverse effects of taking of water or change of water levels and flows on indigenous flora and fauna and on recreational, amenity, intrinsic, ecological, aquatic and Poutini Ngai Tahu values.

Unlike in other regions, due to its plentiful supply, few problems generally arise from the taking of water from lakes and rivers on the West Coast.

However, there are circumstances when potentially conflicting demands on water resources arise. For example, water is taken from two separate intakes in Lake Kaniere, one providing the water supply for Hokitika and the other for hydro electricity generation. Excessive demand of water for the latter, particularly during spells of dry weather, has the potential to adversely affect the ability of Hokitika to meet its water needs. To avoid this a minimum lake level has been set.

Alteration of flow regimes may produce effects such as water bodies not being able to flush out gravel or discharge, flash floods and estuaries and wetlands being bypassed.

Water availability also has effects on the intrinsic, amenity, recreational, habitat, cultural and community values of water.

Lake Christabel and the Ahaura River in its gorge, have water conservation orders over them. In 1996 the Planning Tribunal recommended that the Buller River from its source to Te Kuha, including some of its tributaries, be made the subject of a national water conservation order. The Regional Council will have regard to any relevant water conservation order or draft water conservation order when considering resource consent applications. The purpose of a water conservation order is to preserve or protect outstanding features or characteristics in water bodies.

OBJECTIVE 8.1.1

To manage the quantity of the Region's water resources so as to:

- a. Meet the needs of a range of uses, including the reasonably foreseeable needs of future generations; and**
- b. Safeguard the life-supporting capacity of water and related ecosystems.**

WATER POLICIES 8.1

POLICY 8.1.1 When making decisions over water levels or river flows, or allocating water, the Regional Council will consider the following matters:

- a) The natural availability of the water resource or natural range of levels and/or flows;***
- b) The existing and reasonably foreseeable future demands on water resources;***
- c) Conservation of water and its efficient allocation and use;***
- d) The relationship of Poutini Ngai Tahu and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taonga;***
- e) The potential demand for water resources which could have an effect the following:***

**Cross reference
policy 8.1.1
Habitats and
Landscapes
policies 9.1 – 9.3
and Soil
Conservation and
Rivers policy 7.**

- (i) Recreational, amenity and intrinsic ecological values,*
- (ii) Ecological and aquatic values,*
- (iii) Indigenous flora and fauna.*
- f) Habitats of trout and salmon;*
- g) When allocating surface water resources, residual flows are sufficient to maintain or enhance the life supporting capacity of aquatic habitats and provide for aquatic, amenity and habitat values;*
- h) Existing allocations to resource users and reliance on these for their continued operations;*
- i) Cumulative effects of water extraction; and*
- j) The relationship between water quantity and water quality and the effects that water abstraction may have on the ability of a water body to assimilate waste.*

Policy 8.1.1 corresponds with Water Policy 8.3.1

POLICY 8.1.2 Where insufficient water exists to meet existing and potential demands, priority be given for firefighting, domestic use and stock water.

**Cross reference
policy 8.1.2**
*Habitat and
Landscape policies
9.1-9.3 and Natural
Hazards policies
11.1 and 11.2.*

METHODS

- 8.1.1 Use the public notification of plans, postal circulars, brochures, incidental contact with water users, and newspaper advertisements to inform resource users of unacceptable effects.
- 8.1.2 Monitor the effects of water abstraction on changes in water levels when it is considered that the sustainability of the resource is likely to be compromised.
- 8.1.3 Investigate flows and where appropriate set minimum levels and flow regimes.
- 8.1.4 Allocate water resources according to rules in a Regional Water Management Plan.
- 8.1.5 Consider charging users of water, creation of tradeable water rights and applying bonds to major users.
- 8.1.6 Consult with Poutini Ngai Tahu when considering resource consent applications.
- 8.1.7 If considered necessary issue directions under section 329 of the Act to apportion or suspend the taking of water.
- 8.1.8 Consider the use of economic instruments where appropriate.

EXPLANATION

Policy 8.1.1 recognises that activities affecting the levels of lakes or the flow of rivers could make it difficult for people and communities to provide for their social, economic and cultural well being and for their health and safety. At the same time it recognises that the life supporting capacity of ecosystems needs to be safeguarded. Policy 8.1.1 corresponds with policy

8.3.1 in this chapter because it also applies to the management of geothermal water.

In the event of having to impose restrictions on the taking of water to maintain lake levels or flows of water in rivers, Policy 8.1.2 requires the Regional Council to accord priority to firefighting, domestic and stock needs over other uses. Water will only be allocated after the matters in policy 8.1.1 have been considered and it has been demonstrated that the requirements of policy 8.1.2 can still be met.

There is normally an abundance of water but, because water shortages and water allocation conflicts do occur on the West Coast, the Regional Council in its water management role, needs to have various methods at its disposal to ensure that available water is allocated efficiently. In most cases this is not a problem. However on occasions when there is a shortage of water or the potential for conflicts, the availability of methods such as education, encouragement, monitoring, setting minimum flows, resource consents and economic instruments are needed to manage the resource.

The Regional Council will manage the allocation of water, any artificial change of water levels or flows and the effects of taking of water. It may impose restrictions on the taking, using, damming or diversion of water in the event of a temporary shortage.

ANTICIPATED ENVIRONMENTAL RESULTS

8.1.1 No water shortages due to abstraction by users, or artificial changes to lake levels and river flows.

8.1.2 Maintenance and enhancement of intrinsic, ecological, recreational, amenity, aquatic and Poutini Ngai Tahu values.

ISSUE 8.2

Surface and groundwater quality.

Point and non point source discharges into water, interference with waterways and land use practices can affect water quality, causing adverse environmental effects which include one or more of the following:

- a) Human health risk;**
- b) Conspicuous change in colour or clarity;**
- c) Objectionable odours;**
- d) Destruction of aquatic ecosystems and habitats;**
- e) Consequent loss of ecological, cultural, aesthetic, fishery, amenity and recreational values; and**
- f) Impacts on the relationship between Poutini Ngai Tahu and their culture and traditions associated with ancestral waters.**

Water quality is affected by:

1. Discharges of biological wastes such as sewage, contaminated stormwater and animal effluent;

2. Disposal of biological wastes such as human sewage from campervans.
3. Suspended solids from land use activities;
4. Contamination of ground and surface water by leaching and runoff from rubbish dumps, mining operations and industrial sites, including those no longer in operation;
5. Discharges which originate from the disposal of acid mine drainage, trade wastes, farming and industrial activities; and
6. Runoff from chemical spraying and fertiliser application.

The effects of such activities can vary. The discharge of some contaminants such as used oil, paint thinners, leachate from rubbish dumps and land contaminated from other past and present activities can cause major and lasting contamination of surface and ground water. Other activities - such as land disturbance - may result in turbidity, discolouration and suffocation of aquatic life. These effects may be short term, depending on controls already in place at the source and the type and duration of the discharge. In addition, activities within waterways (for example dams, diversions and culverts) can impede fish passage and change the dynamics of waterways.

Untreated human sewage is discharged directly into rivers adjacent to Westport, Reefton and Greymouth. These discharges may pose health risks in terms of contact recreation and adversely affect the cultural relationship of Poutini Ngai Tahu with these waters. Additional health risks from sewage discharges may exist to those who consume whitebait and other species caught within the tidal reaches of the Buller and Grey Rivers. Section 386(3) of the Act states that existing permits for those discharges expire on 1 October 2001. Future options for such discharges are treatment and disposal by either land, water or other methods.

Human sewage continues to be discharged from campervans on roadsides. Inevitably, some finds its way into water bodies. These undesirable practices will lessen as the number of official sewage disposal sites for campervans increases. Toilet wastes at some roadside rest areas are also a problem. Discharges from these mobile sources are covered in Chapter 12 on Solid and Hazardous Waste.

Contamination of water by effluent from septic tanks is also a regional issue. Problems that have arisen include the overloading of such systems and poor siting where subsurface materials do not provide adequate soakage. This and the overloading of soakage fields can result in contamination of water bodies. The region's rainfall and high water tables undoubtedly decrease the effectiveness of septic tanks, particularly the traditional single chambered unit. Modern domestic treatment systems are multi chambered and treat sewage more effectively. Further technological advances are likely.

Stormwater disposal is a problem in some towns. In Greymouth, the steep impermeable mudstone escarpment channels water into the built up areas along the toe of the slope, producing a variety of surface flooding and sedimentation problems. Sedimentation of stormwater results when runoff from down pipes, paving and modified stream channels travels over bare surfaces. The suspended silt and debris can cover and settle in gardens, enter garages and basements and block drains. In most New Zealand towns the common practice is to link drainage from roofs, and paved surfaces into

a reticulated stormwater system. On the West Coast this practice has not always been adopted, particularly near the margins of towns. As a result some downpipes run directly to the surface of land.

Contaminated stormwater disposal from standing areas such as garage forecourts and industrial sites may also be a problem.

Many mine discharges on the West Coast result from earlier mining activity. It is therefore difficult to mitigate damage from these sources. However, the establishment of new mines in old workings, where acid mine discharges occur, may offer coincidental low cost opportunities to remedy or mitigate their effects. Where appropriate, conditions can be incorporated into resource consents. The Government and other organisations may have an obligation to remedy the effects of discharges from some old coal workings. Liability for the discharges from these workings would have to be determined on a case by case basis.

Current mining, particularly hard rock mining, does have the potential to pollute water bodies. The Regional Council has a responsibility to ensure that these effects are avoided, remedied or mitigated. In particular, discharges of heavy metals, where these occur, will be regulated on the basis of an assessment of environmental effects through the resource consent process.

Coastal water quality is discussed in Chapter 10 (The Coastal Environment) under Issue 5.

OBJECTIVE 8.2.1 To maintain, and where water quality is degraded, enhance the quality of the region's surface, ground and coastal water resources by:

- a) Recognising and providing for the relationship of Poutini Ngai Tahu and their culture and tradition with their ancestral water;**
- b) Ensuring that land and water resources are used and managed so that their life supporting capacity, intrinsic, amenity, recreational and cultural values are maintained or enhanced by :**
 - (i) Sufficient flow or levels in natural water bodies to achieve desired water quality; and**
 - (ii) Avoid, remedy or mitigate the adverse effects of soil loss, erosion and the contamination of water bodies with chemicals, sediment, bacteria or nutrients.**

WATER POLICIES 8.2

POLICY 8.2.1 Avoid, remedy or mitigate the adverse effects of discharges into surface, coastal and ground water particularly where these cause or are likely to cause:

- a) Risks to human health;***
- b) The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;***
- c) Any conspicuous change in the colour or visual clarity;***
- d) Any emission of objectionable odours;***

Cross reference policies 8.2.1 & 8.2.2

All Poutini Ngai Tahu policies; Soil and Rivers policies 7; Habitat and Landscape policies 9.1 – 9.4, and Solid and Hazardous Waste policies 121.1-1.6, 1.8, 12.2.1 and

- e) *The rendering of fresh water unsuitable for consumption by farm animals;*
- f) *Any significant adverse effects on aquatic life;*
- g) *Loss of ecological, cultural, aesthetic, fishery, amenity and recreational values; and*
- h) *The relationship of Poutini Ngai Tahu and their culture and traditions with ancestral water and other taonga to be compromised.*

Policy 8.2.1 corresponds with Water Policy 8.3.2

POLICY 8.2.2 To maintain, enhance or restore water quality in surface, coastal and ground water, taking into account:

- a) *The public uses of water resources;*
- b) *The sensitivity of the receiving waters to adverse effects;*
- c) *The current state of technical knowledge and treatment and disposal options for discharges;*
- d) *Existing lawful discharges;*
- e) *The relationship of Poutini Ngai Tahu and their culture and traditions with ancestral water; and*
- f) *The setting of progressively higher water quality standards water bodies that are unacceptably degraded.*

Policy 8.2.2 corresponds with Coastal Environment Policy 10.5.1.

POLICY 8.2.3 To promote, where appropriate, well-vegetated riparian margins while considering the need to reduce threats caused by flooding and erosion.

POLICY 8.2.4 To manage land use practices in order to avoid, remedy or mitigate the entry of soil, silt and other contaminants into the region's water bodies.

Cross reference policies 8.2.3 and 8.2.4.

Soil and Rivers policy 7 and Habitats and Landscape policies 9.1-9.6

METHODS

- 8.2.1 Through publications and contact with resource users promote the maintenance and enhancement of the region's water resources.
- 8.2.2 Advocate the Crown's assistance to eliminate discharges of polluted waters that are beyond the Regional Council's resources to remedy. Acid discharges from old mine workings are an example of where this could apply.
- 8.2.3 Encourage territorial authorities, other agencies and those responsible for discharges, to provide signposts to warn the public of the effects of using polluted water.
- 8.2.4 Promote, encourage and where necessary, require the creation, retention and enhancement of riparian margins.
- 8.2.5 Consider development of a method of classifying riparian areas.
- 8.2.6 Encourage chemical waste recovery, recycling and neutralisation.

- 8.2.7 Establish an assessment and monitoring programme in order to identify water quality issues.
- 8.2.8 Consult Poutini Ngai Tahu.
- 8.2.9 Require the disposal of chemical wastes at approved sites only.
- 8.2.10 Require the treatment of raw sewage prior to discharge.
- 8.2.11 Regulate land use practices and discharges of contaminants into water according to regional rules in regional plans. Some land use practices will also be controlled through resource consents and enforcement.
- 8.2.12 Consider classifying waters according to the Third Schedule of the Act.
- 8.2.13 Impose restrictions or prohibit the discharge of contaminants into water in the event of a temporary serious shortage of water as provided for by section 329 of the Act.
- 8.2.14 Consider the application of selected codes of practice as a means of ensuring compliance with regional rules.
- 8.2.15 Consider the use of economic instruments where appropriate, including bonds to ensure compliance with resource consent conditions and as a means of financing remedial work.

EXPLANATION

Policy 8.2.1 recognises that high water quality is important for safeguarding the life- supporting capacity of the region's water resources. Much of the West Coast's scenic values stem from the visibly high quality of water in rivers and lakes. The attraction of the area for aquatic recreational activities such as canoeing or fishing is also dependent on this.

This policy has much in common with geothermal water. Accordingly, policy 8.2.1 corresponds with policy 8.3.2 in this chapter.

Policy 8.2.2 allows for the fact that some waters, already degraded to an unacceptable degree, need to be restored. It provides a method for reviewing standards when existing resource consents expire. The discharge of raw sewage into some of the region's rivers is an example of how water quality is degraded. Section 386(3) of the Act provides that authority for those discharges expires on 1 October 2001. However, it is recognised that it may not be realistic to eliminate all discharges of polluted surface or groundwaters in the short term. As an example of how the setting of progressively higher water quality standards could be applied, attention could be focused on the restoration of unacceptably degraded waters, such as the lower reaches of the Buller and Grey rivers which are affected by discharges of raw sewage (See text under explanation to Issue 10.5).

Fresh water quality issues have much in common with coastal water quality. Accordingly, policy 8.2.2 corresponds with Policy 10.5.1 in Chapter 10 (The Coastal Environment).

The option of classification of water as provided for in the Third Schedule of the Act gives the Regional Council a further method of setting water quality standards. There are, at present, no specific plans to implement such classification.

Policy 8.2.3 recognises that the management of riparian margins can assist in the attainment of water quality objectives. Riparian margins are of benefit to downstream values and general water quality, instream and marginal communities, invertebrates, indigenous fish species, public access, wildlife habitats and natural character and landscape values. At the same time the use of vegetated riparian strips is not always practical. This is discussed further in the Explanation under Chapter 9 (Habitats and Landscapes).

Policy 8.2.4 addresses the effect of land use practices on water quality.

Because there is a perception that the region is relatively unaffected by development, the Regional Council could decide to safeguard the life supporting capacity of water through non-regulatory methods. While the importance of promotion should not be underestimated, experience has shown that without monitoring, regulation and enforcement, water quality will decline as a result of discharges into water. This makes regulation necessary. There is a strong community expectation that water quality should be sustained, and in places, improved. This would also help the region to retain its reputation as one of natural beauty and relatively free of water pollution.

Although it would appear desirable to clean up all polluted waters, limitations exist as to what can be realistically achieved in the short or long term - both in terms of finance and technology. For this reason the RPS cannot give an undertaking to maintain at, or restore water quality to, a particular standard.

The Regional Council may consider the use of economic instruments. These may be implemented through rules in a regional water management plan.

The Regional Council is responsible for developing objectives, policies and rules for water quality as well as managing the effects of all activities that result in discharges to water.

ANTICIPATED ENVIRONMENTAL RESULTS

- 8.2.1 Protection and enhancement of the life supporting capacity of water, including its intrinsic, amenity, recreational and cultural values.
- 8.2.2 Improvement in water quality through lower turbidity, suspended solids and water more suitable for uses such as aquatic ecosystems, food gathering, contact recreation and water supply purposes.

ISSUE 8.3 Geothermal water.
The management and use of geothermal water.

The West Coast Region has a number of geothermal resources. Most occur as small hot springs scattered along the lower slopes of the western flanks of the Southern Alps. The most significant of these occurs in the upper reaches of the Maruia River, a tributary of the Buller, at Maruia Springs. This resource has, for a long period, been tapped and developed as a commercial spa.

Another spring in the headwaters of the Haupiri River was also the site of a commercial spa developed by the Crown about the turn of the century. It has since fallen into disuse.

Some West Coast geothermal water resources 'waiwera' of Te Tai Poutini, are used by Poutini Ngai Tahu for customary cultural purposes.

Section 14(3)(c) of the Act provides that the water, heat or energy of geothermal water may be taken, used, dammed or diverted in accordance with tikanga Maori for communal benefit of the tangata whenua - providing it does not have an adverse effect on the environment. Otherwise, the general provisions of section 14 apply that prohibit the taking, use, damming and diversion of water, or heat or energy from water unless either provided for by a rule in a regional plan or expressly allowed by a resource consent, or generally, if the activity was lawfully established, until the time a relevant regional plan or proposed regional plan becomes effective.

Geothermal waters are relatively sensitive to adverse environmental effects. They can be depleted or substantially modified by poor resource management. Their discharge into receiving waters can also have adverse environmental effects.

The areas of geothermal significance remain to be determined and the assembly of an inventory of such resources may be warranted.

OBJECTIVE 8.3 The sustainable management of West Coast geothermal water.

WATER POLICIES 8.3

POLICY 8.3.1 When making decisions over geothermal water levels or flows, or allocating geothermal water, the Regional Council will consider the following matters:

- a) The natural availability of the water resource or natural range of levels and/or flows;***
- b) The existing and reasonably foreseeable future demands on water resources;***
- c) Conservation of water and its efficient allocation;***
- d) The relationship of Poutini Ngai Tahu and their culture and traditions with geothermal water;***
- e) The potential demand for water resources which could have an effect the following:***
 - (i) recreational, amenity and intrinsic ecological values;***

**Cross reference
policy 8.3.1 and
8.3.2**

*All Poutini Ngai
Tahu policies;
Water policies 8.1-
1.3 and 8.2.1-2.4*

- (ii) *ecological and aquatic values;*
- (iii) *indigenous flora and fauna.*
- (f) *Habitats of trout and salmon;*
- (g) *When allocating surface water resources, residual flows meet the needs of aquatic, amenity and habitat values including the maintenance of life supporting capacity of aquatic habitats;*
- (h) *Existing allocations to resource users and reliance on these for their continued operations;*
- (i) *Cumulative effects of water extraction; and*
- (j) *The relationship between water quantity and water quality and to consider the effects that a water allocation would have on the ability of a water body to assimilate waste.*

Policy 8.3.1 corresponds with Water Policy 8.1.1

POLICY 8.3.2 *Avoid, remedy or mitigate the adverse effects of discharges of geothermal water into surface, coastal and ground water particularly where these cause or are likely to cause:*

- a) *Risks to human health;*
- b) *The production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials;*
- c) *Any conspicuous change in the colour or visual clarity;*
- d) *Any emission of objectionable odours;*
- e) *The rendering of fresh water unsuitable for consumption by farm animals;*
- f) *Any significant adverse effects on aquatic life;*
- g) *Loss of ecological, cultural, aesthetic, fishery, amenity and recreational values; and*
- h) *The relationship of Poutini Ngai Tahu and their culture and traditions with ancestral water and other taonga to be compromised.*

Policy 8.3.2 corresponds with Water Policy 8.2.1 and Coastal Environment Policy 10.5.1.

METHODS

- 8.3.1 Consult with potential users of geothermal water to determine foreseeable future needs and concerns as to their use, value and environmental sensitivity.
- 8.3.2 Discuss and review with Poutini Ngai Tahu the development of guidelines as to the nature of potential adverse effects that may occur through the exercise of the provisions of section 14(3)(c) of the Act.
- 8.3.3 Collect information on the nature and extent of the region's significant geothermal areas. A significant information source is the Geological Society of New Zealand (1993).
- 8.3.4 Requests to take, use or discharge geothermal water will be subject to rules outlined in a Regional Water Management Plan.
- 8.3.5 Consider the use of economic instruments such as bonds and levies.

EXPLANATION

Both policies provide for the sustainable management of the unique character and special values of geothermal water. These include the direct and indirect value to tourism and recreation and their scientific values. Policy 3.2 recognises that the discharge of geothermal water into water can have adverse effects.

Both policies also meet the Regional Council's obligations to Poutini Ngai Tahu under sections 6(e), 7(a) and 8 of the Act. The unique right is recognised that permits Poutini Ngai Tahu to take or use geothermal water for their communal benefit and, as required, to ensure that adverse environmental effects are avoided, remedied or mitigated.

ANTICIPATED ENVIRONMENTAL RESULT

8.3.1 The sustained management of the region's geothermal water resources in a manner that ensures the avoidance, remedying or mitigation of adverse environmental effects.