This is a true and correct copy of Regional Policy Statement for Otago which was approved by the resolution of the Otago Regional Council on Monday 14 September 1998.

The Regional Policy Statement for Otago is deemed to be operative on Thursday 1 October 1998.

The Common Seal of the Otago Regional Council was hereunto affixed pursuant to the resolution of the Council passed on Monday 14 September 1998, in the presence of:

Chairperson

Director Corporate Services
Regional Policy
Statement for Otago

ISBN 0-908922-59-0

Otago Regional Council
October 1998
Chairperson’s Foreword

It gives me great pleasure to present the fully operative Regional Policy Statement for Otago.

The Proposed Regional Policy Statement was publicly notified back in October 1993. Following the statutory process of submissions, hearings, and appeals, this Regional Policy Statement for Otago became operative on 1 October 1998.

The Regional Policy Statement for Otago was the first major policy document prepared by the Otago Regional Council under the Resource Management Act, and it has established the framework for all the Council’s planning documents since that time. We now have four Regional Plans, in varying stages of development, all of which come under the umbrella of this Policy Statement.

While prepared by the Regional Council, this Policy Statement belongs to the region. It has been developed in close consultation with the territorial local authorities, Iwi, central government agencies, other relevant bodies and the public of Otago. The Otago Regional Council’s focus throughout the statutory process has been on enabling people to participate and on seeking to ensure the most effective public involvement throughout the public hearing and decision making phase.

One of the fundamental prerequisites for the achievement of sustainable management is broad public participation in the policy development process.

The goal we are all working towards is in line with Agenda 21 – from the 1992 United Nations Conference in Rio de Janeiro. Like Agenda 21 and the Healthy Communities concept, we are seeking an active partnership between the physical, social and economic environment in order to achieve a sustainable future for everyone.

Sustainable management - management of the use, development and protection of resources that does not destroy or undermine the ecological, economic or social basis of which continued well being depends, is the only viable path for the 21st Century. The resources of Otago are in our care for our children’s children. The Regional Council is committed to ensuring that this Regional Policy Statement will underpin future environmental management in Otago.

The Statement considers all of Otago’s natural and physical resources and puts in place a framework to ensure their sustainable use, development and protection. Sustaining the productive capacity of the land, the quantity and quality of Otago’s water resources, the natural character of the coast and significant and outstanding landscapes and biota are important community objectives.

Implementing these objectives, policies and methods will require a commitment from both local and central government, in conjunction with the community.

May I take this opportunity to express the Council’s sincere thanks to all those involved in the submissions process and for the valuable contributions made by so many. Your comments and suggestions have assisted us greatly and it is our hope that this Regional Policy Statement will now positively shape Otago’s environment for tomorrow.

Louise Rosson
Chairperson
Otago Regional Council
How to Use the Regional Policy Statement

This Regional Policy Statement considers all of Otago’s significant regional resource management issues. It provides objectives, policies and methods of implementation in order to address those issues. Each of the issues, objectives and policies is accompanied by an explanation.

Although all of Otago’s resources are interrelated, it has been necessary, within this Policy Statement, to consider particular resources in individual chapters. In order to reflect the interrelated nature of the use, development and protection of resources, a reference system has been used within the Statement. This provides a linkage between chapters, and between issues, objectives, policies and methods within each chapter:

- Each issue, objective and policy is referenced to other chapters within the Policy Statement, where those chapters contain issues, objectives or policies which may affect that particular issue, objective or policy.
- Each of the issues is referenced through to the relevant objectives and policies within each chapter.
- Each of the objectives is referenced through to the relevant policies within each chapter.
- Each of the policies is referenced through to the relevant methods within each chapter.

This cross referencing system is for information purposes and to highlight potential links between resource issues and concerns. Particular connections and issues of integration will still need to be addressed on a case by case basis, in relation to particular circumstances.

The Regional Policy Statement is divided into 15 chapters and 3 appendices.
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1 Introduction
1.1 What is a Regional Policy Statement?

The Otago Regional Policy Statement is part of the framework established under the Resource Management Act 1991 for the sustainable integrated management of Otago’s natural and physical resources. The main elements of this framework are shown in Figure 1.

The Otago Regional Policy Statement provides an overview of the resource management issues of the Otago region and the ways of achieving the integrated management of its natural and physical resources. It provides a framework within which the regional coastal plan, any regional plan, and any district plan sit. These plans must reflect the provisions of the Otago Regional Policy Statement and cannot be inconsistent with it.

At the next level, regional plans and the regional coastal plan can be developed to assist the Otago Regional Council in carrying out any of its functions. These plans cannot be inconsistent with each other. At present, the Council has made a commitment to preparing five regional plans: the Regional Plan: Land, the Regional Plan: Water, Regional Plan: Air, the Regional Plan: Coast and the Regional Plan: Waste. This commitment is identified in the Methods section of the appropriate chapters. Other plans may be prepared from time to time as is considered necessary and appropriate.

District plans are developed by Otago’s city and district councils to assist the councils in carrying out any of their functions. These plans cannot be inconsistent with any of the instruments shown.

National Policy Statements, including the New Zealand Coastal Policy Statement, are intended to provide a national overview of significant resource management issues. Every regional policy statement, regional plan, regional coastal plan, and district plan must reflect the provisions of any national policy statement and cannot be inconsistent with such a statement.

National policy statements, prepared by the Minister for the Environment, state policies on matters of national significance that are relevant to achieving the purpose of the Act. The New Zealand Coastal Policy Statement, prepared by the Minister of Conservation, states policies in order to achieve the purpose of the Act in relation to the coastal environment of New Zealand. The New Zealand Coastal Policy Statement is the only national policy statement required by the Act.

1.2 Statutory Background to this Regional Policy Statement

Section 5 of the Resource Management Act sets out the purpose of the Act as:

“... to promote the sustainable management of natural and physical resources.”

“Sustainable management” is defined as:

“... managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well being and for their health and safety while-

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil and ecosystems; and

(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment”.

(Section 5)
Resource Management Act
Planning Framework in Otago

National Policy Statements
(Including Coast)

REGIONAL POLICY STATEMENT
Sets the direction for the future
management of Otago’s natural and physical resources
and is developed under the Resource Management Act 1991.

Regional Plans

District Plans
- Waitaki District
- Dunedin City
- Clutha District
- Central Otago District
- Queenstown Lakes District

Resource consents and other methods of implementation

Figure 1 Resource Management Framework
Section 59 of the Resource Management Act sets out the purpose of this Regional Policy Statement as:

"...to achieve the purpose of the Act by providing an overview of the resource management issues of the region and policies and methods to achieve integrated management of the natural and physical resources of the whole region".

Sections 6, 7, and 8 of the Act provide a further set of principles to be followed in achieving the purpose of the Act. (Appendix C includes the full text of Part II of the Act).

1.3 Effect of this Regional Policy Statement

This Regional Policy Statement has been prepared for the Otago Region under the provisions of Section 60 (1) of the Resource Management Act 1991.

The Regional Policy Statement shall have effect in the manner set out in the Act over “The Otago Region” as constituted by the Local Government Re-organisation Scheme 1989.

The Authorities within the Otago Region are:

1. The Otago Regional Council.
2. The territorial authorities are:
   (a) Queenstown Lakes District Council
   (b) Dunedin City Council
   (c) Central Otago District Council
   (d) Clutha District Council
   (e) Part of Waitaki District Council.

Otago’s geographic area and districts are shown in Figure 2.

1.4 The Contents of this Regional Policy Statement

This chapter provides a general introduction to the Regional Policy Statement.

The second chapter contains the text of the Treaty of Waitangi. It is followed by a discussion provided by Otago’s iwi (Kai Tahu), outlining their perspective on the Treaty.

The third chapter provides a brief overview of Otago, its resource base, its economic, social and cultural attributes, its people and communities, and their activities and relationships with the environment.

Chapters 4 through to 15 describe the regionally significant resource management issues within Otago, and the objectives, policies, and methods of implementation to address those issues. Each chapter ends with the anticipated environmental results expected from the implementation of this policy statement. Each of these chapters are interrelated, emphasising the need for an integrated response to the resource management issues of the region.

Appendix A is a glossary containing definitions of Maori words and phrases used in this Policy Statement.

Appendix B is a glossary containing definitions of other words and phrases used in this Policy Statement.

Figure 2 The Otago Region
1.5 International Context

There is increasing global concern and awareness of the need for a sustainable future. Issues such as the greenhouse effect and global warming, the integration of environment and development and the management of waste and hazardous substances have all become globally significant. There is also increasing recognition that New Zealand is part of this global community. This is reflected by the fact that New Zealand is party to many international treaties and agreements with respect to the global environment. Although the Regional Policy Statement is at the heart of promoting sustainable resource management for the region, Otago can make a contribution to improve global sustainability through adopting the maxim of “Think globally, act locally” to issues such as carbon dioxide emissions. However, it remains the responsibility of central government, through national policies and laws, to ratify international treaties and agreements.

1.6 Significant Resource Management Issues of the Region

Section 62 of the Resource Management Act requires the Regional Policy Statement to state the ‘significant resource management issues of the region’ and the ‘matters of resource management significance to iwi authorities’. This has been done through the process of consultation in the preparation of the Regional Policy Statement and through consideration of the provisions of Part II of the Act.

The issues identified in the individual chapters of this Regional Policy Statement are considered to be the significant resource management issues of the region by the Otago Regional Council.

Section 30(1)(b) of the Act also provides that the Regional Council shall have, as one of its functions, the preparation of objectives and policies in relation to any actual or potential effects of the use of land which are of regional significance. Relevant objectives and policies are included in the chapters of the Policy Statement with additional criteria for determining “significance” where appropriate.

1.7 Integrated Management

Section 59 of the Act requires this Statement to achieve the purpose of the Act by providing an overview of the region’s resource management issues and the policies and methods to achieve integrated management of the natural and physical resources of the region.

Integrated management of natural and physical resources means taking an all-embracing, holistic approach to resource management. It requires that decision-making about any particular resource take into account the likely effects on other natural and physical resources. It also implies a long-term approach, identifying a set of agreed environmental results that enables people and communities to provide for their social, economic and cultural well being.

In order to achieve the Act’s requirement that the Regional Policy Statement provide for integrated management of the region’s natural and physical resources, its provisions must be read as a whole. To assist in the achievement of a holistic approach to resource management, the Regional Policy Statement uses a system of cross referencing to provide linkage between chapters, and between issues, objectives, policies and methods within each chapter. Within this system:

- Each issue, objective and policy is referenced to other chapters within the Policy Statement, where those chapters contain issues, objectives or policies which may affect that particular issue, objective or policy.
Regional Policy Statement for Otago

• Each of the issues is referenced through to the relevant objectives and policies within each chapter.

• Each of the objectives is referenced through to the relevant policies within each chapter.

• Each of the policies is referenced through to the relevant methods within each chapter.

This cross reference system is for information purposes, to aid understanding of the integrated nature of the Regional Policy Statement and to assist users to read the document as a whole by highlighting potential links between resource issues and concerns. Particular connections and issues of integration will still need to be addressed on a case by case basis, in relation to particular circumstances.

For the purposes of this Statement active integrated management includes:

(a) Integration of management responses across resource management agencies: Recognising that although different agencies have varying functions, powers and duties under the Act, coordination of their actions is necessary to promote sustainable management in the region particularly in areas of shared responsibility.

(b) Integration toward shared environmental outcomes: Recognising that the resolution of key resource management issues which will affect the region’s future will be more effective and efficient if resource management agencies and communities work together for common goals.

(c) Integration of policies, action and decision making needs to be coordinated across regional boundaries: This recognises that there are significant cross boundary issues where the effects of natural and physical resource use cross regional boundaries.

(d) Integration of management responses across resource systems: Recognising that natural and physical resources must be treated as parts of complex and inter-connected bio-physical systems affecting each other and that objectives relating to these resources be considered together in resource management decision making.

(e) Integration of actions across a range of time scales: Recognising that the effects of human activities on the environment can be temporary or permanent, may have already occurred, may be happening now, may happen some time in the future and may be cumulative over time.

(f) Integration of decision-making with community participation: Recognising that the values and beliefs of society, particularly those of iwi, must play an important part in natural and physical resource management.

(g) Integration of methods to be used to implement policies: Recognising that there is usually more than one way of implementing policies in an efficient and effective way.

(h) Integration across individual decisions: Recognising that if each decision about the use of, or effects on, a resource is made in isolation, then by the time the effects accumulate to a point where they must be prevented or mitigated, the trends will be set. In such circumstances, not only will arguments of equity make it difficult to change direction, but the adverse effects of the small decisions will by then have reached a magnitude undermining the justification to resist further pressures. This could result in inefficiencies and uncertainties.
1.8 Issues, Objectives, Policies, Methods and Environmental Results

A resource management issue occurs when an activity, or a natural occurrence such as a natural hazard or a pest, creates an environmental effect requiring some form of intervention. If there is no effect, then there is no issue. The extent to which those issues are significant is dependent on the values held by people and communities in relation to natural and physical resources, activities and the environment.

The purpose of a Regional Policy Statement is to provide an overview of the resource management issues of the region. Section 62 of the Act requires the Statement to set out the significant resource management issues of the region and the matters of resource management significance to iwi authorities. It should also contain ‘objectives’, ‘policies’, ‘methods’ and ‘anticipated environmental results’. These terms are used in this Statement in the following way:

An ‘objective’ is the desired result, end state, situation or condition that is aimed for.

A ‘method’ is the practical action by which a policy is implemented. It is what needs to be done to put the policy into effect.

A ‘policy’ is the course of action to achieve the desirable result. It is what needs to be done to get to the objective.

An ‘anticipated environmental result’ is the intended result or outcome on the environment as a consequence of implementing the policies and methods.

Figure 3 summarises this process.
1.9 Relationship to other Plans and Policies

In addition to not being inconsistent with any National Policy Statement, or the New Zealand Coastal Policy Statement, this Regional Policy Statement cannot be inconsistent with any Water Conservation Order. In addition, section 61(2) of the Act requires that regard be given to:

(1) Management plans and strategies prepared under other Acts. These could include:
   - Park Management Plans under the National Parks Act 1980.
   - Fisheries Management Plans under the Fisheries Act 1983.
   - Civil Defence Plans under the Civil Defence Act 1953.
   - Regional Land Transport Strategies under the Transit New Zealand Act 1989.
   - Annual Plans and Bylaws under the Local Government Act 1974.

(2) Relevant planning documents recognised by an iwi authority affected by the Regional Policy Statement.

(3) Relevant entry in the New Zealand Historic Places Trust Register.

(4) Regulations relating to the conservation or management of taiapure or fisheries.

(5) Regulations made under the Act.

In preparing or changing the Regional Policy Statement the Otago Regional Council must also have regard to policy statements and plans of adjacent regional councils.

1.10 Section 32

Section 32 of the Resource Management Act requires this Council, in preparing this Regional Policy Statement to have particular regard to alternatives that may be available and the reasons for and against options, including their costs and benefits, when determining objectives, policies and methods. Alternatives were considered as part of the development of the Regional Policy Statement through the consultation held with individuals, interest groups, users and agencies. Those alternatives formed the basis for earlier draft versions of the Proposed Regional Policy Statement which were used for consultative purposes. Additional information and material is contained within the Council’s files on alternatives that were considered as part of the policy development.

The Otago Regional Council has considered the requirements of Section 32 in preparing and notifying this Proposed Regional Policy Statement for Otago and is satisfied that the selected objectives, policies and methods are necessary in achieving the purpose of the Resource Management Act and are the most
appropriate means having regard to their efficiency and effectiveness.

The principal reasons for adopting the objectives, policies and methods explain why those objectives, policies and methods have been included in this Policy Statement.

1.11 Methods of Implementation

There is a wide range of alternative methods available to implement the policies of this statement in order to achieve its objectives. These include:

- Providing incentives for people and organisations to achieve the objectives of this Regional Policy Statement.
- Providing information and helping to raise awareness in the community about environmental issues and the effects of activities.
- Providing works and services to directly carry out a required action.
- Providing information on and requiring assessments of environmental effects, consistent with the scale and significance of the activity.
- Encouraging resource users to take responsibility for the management of adverse effects on resources.
- Establishing, monitoring and enforcing rules and performance standards contained in regional and district plans.
- Using a range of economic instruments to enable desired results to be achieved.
- Obtaining ownership of a resource or site, in order to give management control.
- Transferring the responsibility for certain actions and decisions to another organisation by way of a transfer of powers or delegation of functions.
- Advocating changes to government policy.
- Recognising and incorporating industry codes of practice into planning and decision-making.
- Supporting negotiated agreements between parties to environmental issues.
- Undertaking research and monitoring to gain an understanding of natural and physical resources and the effects of activities on the environment, including the assessment of risks.
- Establishing and maintaining inventories of natural and physical resources.
- Recognising, encouraging and where appropriate co-ordinating the restoration of degraded resources, habitat and ecosystems.

The methods identified in each chapter are not intended to be an exclusive all encompassing list. There may be other methods that could be adopted by management agencies during the term of this Statement that will implement the relevant policies in a way that satisfies the requirements of the Act, particularly in regard to the positive obligations of Section 32 to consider alternative means of achieving objectives.

When implementing any of the above methods, including the granting or declining of resource consents, resource management agencies must exercise their discretion within the context of the Resource Management Act and the provisions of the Proposed Regional Policy Statement and any relevant regional or district plans.

The funding and sequencing of the mix of methods will be addressed through regional, district and annual plans of regional and district councils.
1.12 Consultation

The following principles in respect of consultation emerged from the Court of Appeal in *Wellington International Airport v Air New Zealand* (1993) 1 NZLR 671:

- Sufficient information needs to be made available to the consulted party or parties, including further information should this be requested.
- Meetings should be held with the consulted parties and these should be entered into with an open mind.
- Due notice should be taken of what consulted parties have to say.
- The consulting party should wait until all parties have had their say before making its decision.

The development of policies and plans, the undertaking of works and the consideration of resource consents all require a well informed public to have their say. The Otago Regional Council views the process of consultation with the people of Otago as a very important element of its activities.

The Otago Regional Council will actively seek the views of Otago’s communities, and will be guided by the Court of Appeal’s principles in seeking those views. It will seek to use the consultation methods best suited to the particular circumstances and to develop consultation protocols with affected communities. It will provide adequate timeframes, adequate information, and advice to those communities as required to ensure their participation.

1.13 The Review of this Regional Policy Statement

The Regional Policy Statement may remain in operation for 10 years, after which time it must be reviewed. However, circumstances may arise before then to lead the Regional Council to review its contents earlier.

Because this Regional Policy Statement is the first such statement for the Otago region, and because it deals with many resource management issues for the first time, the Otago Regional Council believes it is likely that this document will be reviewed before the 10 year period. It is the intention of the Council to consider the need to undertake a review of this Regional Policy Statement within four years of adoption.
2 Treaty of Waitangi
Two versions of the Treaty of Waitangi exist, the English version that is commonly thought to be the only version and the Maori version.

Maori Version of the Treaty

Ko te tuatahi
Ko nga Rangatira o te Wakaminenga me nga Rangatira katoa hoki ki hai i uru ki taua Wakaminenga ka tuku rawa atu ki te Kuini o Ingarani ake tonu atu te Kawanatanga katoa o o ratou wenua.

Ko te tuarua
Ko te Kuini o Ingarani ka wakarite ka wakaae ki nga Rangatira ki nga Hapu ki nga tangata katoa o Nui Tirani te tino rangatiratanga o o ratou wenua o ratou kainga me o ratou taonga katoa. Otiia ko nga Rangatira o te Wakaminenga me nga Rangatira katoa atu ka tuku ki te Kuini te hokonga o era waahi wenua e pai ai te tangata nona te wenua ki te ritenga o te utu e wakaritea ai e ratou ko te kai hoko e meatia nei e te Kuini hei kai hoko mona.

Ko te tuatoru
Hei wakaritenga mai hoki tenei mo te wakaaretanga ki te Kawanatanga o te Kuini. Ka tiakina e te Kuini o Ingarani nga tangata maori katoa o Nui Tirani ka tukua ki a ratou nga tikanga katoa rite tahi ki ana mea ki nga tangata o Ingarani.

A Literal English Translation Of The Maori Text
(NZ Court of Appeal, 29 June 1987, credited to Professor I H Kawharu)

The First
The Chiefs of the Confederation and all the chiefs who have not joined that Confederation give absolutely to the Queen of England for ever the complete government over their land.

The Second
The Queen of England agrees to protect the chiefs, subtribes and all the people of New Zealand in the unqualified exercise of their chieftainship over their lands, villages and all their treasures. But on the other hand the Chiefs of the Confederation and all the chiefs will sell land to the Queen at a price agreed to by the person owning it and by the person buying it (the latter being) appointed by the Queen as her purchase agent.

The Third
For this agreed arrangement therefore concerning the Government of the Queen, the Queen of England will protect all the ordinary people of New Zealand and will give them the same rights and duties of citizenship as the people of England.

Maori Text version signed by 512 Chiefs and by William Hobson, Consul and Lieutenant Governor.
**English version**

**Article The First**
The chiefs of the Confederation of the United Tribes of New Zealand and the separate and independent Chiefs who have not become members of the Confederation cede to Her Majesty the Queen of England absolutely and without reservation all the rights and powers of Sovereignty which the said Confederation or Individual Chiefs respectively exercise or possess or may be supposed to exercise or to possess over their respective Territories as the sole sovereigns thereof.

**Article The Second**
Her Majesty the Queen of England confirms and guarantees to the Chiefs and Tribes of New Zealand and to the respective families and individuals thereof the full exclusive and undisturbed possession of their Lands and Estates Forests Fisheries and other properties which they may collectively or individually possess so long as it is their wish and desire to retain the same in their possession: but the Chiefs of the United Tribes and the individual Chiefs yield to her Majesty the exclusive right of Preemption over such lands as the proprietors thereof may be disposed to alienate at such prices as may be agreed upon between the respective Proprietors and persons appointed by Her Majesty to treat with them in that behalf.

**Article The Third**
In consideration thereof Her Majesty the Queen of England extends to the Natives of New Zealand Her Royal protection and imparts to them all the rights and Privileges of British Subjects.

English Text version signed by 30 Chiefs and by William Hobson, Consul and Lieutenant Governor.

**Kai Tahu Whanui Perspective**
(Supplied by Roopu Kaitiaki)

**Foundation Document**
The Treaty of Waitangi is the foundation document of New Zealand society, the basis on which the partnership between Maori and the Crown was established.

The Kai Tahu rangatira Kareta and Korako signed the Treaty on behalf of the Otago section of the tribe at Pukekura (Taiao Heads) on 13 June 1840. The Treaty was also signed at three other locations in Te Waipounamu by Kai Tahu; at Akaroa, Ruapuke and Cloudy Bay.

Kai Tahu considered that the Treaty bound the whole tribe of Kai Tahu irrevocably to an agreement which imposed responsibilities on both signatories, the Crown and Kai Tahu alike.

**Kai Tahu Treaty Principle**
Although the principles of the Treaty of Waitangi are being determined by the judiciary, the Waitangi Tribunal and the Government, Kai Tahu offer their own Treaty of Waitangi principle left to them by their ancestors:

This was the command that thy love laid upon these Governors-

- That the law be made as one
- That the commandments be made one
- That the nation be made one
- That the white skin be made one and that it be made just equal with the dark skin........
- And that all might enjoy a peaceable life.

(Petition to the Queen prepared by Matiaha Tiramorehu and the Otago Chiefs, 23 September 1857, when Kai Tahu were pressing the Crown to honour the terms of Kemp’s Deed).
More recently a Kai Tahu elder has expressed the principles of the Treaty as:

**Article One**

“Kawanatanga” or “governorship”, meaning the Crown’s responsibility to make just laws and govern by them and the citizens duty to abide by them.

**Article Two**

“Rangatiratanga” or “chieftainship”, meaning the guarantee of Maori property rights, Maori ownership and control of their own economic resources.

**Article Three**

“Kotahitanga” or “one-ness”, meaning equal rights for all, economic as well as political.

(Rakihi Tau, Tuahiwi Marae)

**Runanga System**

The signing of the Treaty of Waitangi saw the abandonment of the old aristocratic Maori tribal system in favour of a community of equals, a change encouraged also by the missionaries. This adjustment in the interests of equality required by the Treaty is today expressed in the runanga system of community organisation. This reflects the commitment and spirit with which Kai Tahu entered into the new order.

**Kai Tahu Loyalty**

The succeeding generations of Kai Tahu pledged their loyalty to the Treaty and the original commitment their rangatira made to it. The headstones of Chiefs Karetai and Taiaroa at the Otakou urupa bear inscriptions which are witness of their loyalty to the Queen.

The church at the Otakou marae was built in 1940 as a Centennial Memorial to two events, the signing of the Treaty of Waitangi and the establishment of the first christian mission at Waikouaiti, both of which occurred in 1840.

**The Crown**

The Crown has exercised its rights of governorship under Article One since the Treaty was signed in 1840. But the non observance of Kai Tahu rights under Article One and Two of the Treaty since the 1840s form the essence of the Kai Tahu ‘claim’ before the Waitangi Tribunal.

**The Kai Tahu Claim before the Waitangi Tribunal**

The Waitangi Tribunal conducted hearings held throughout the South Island over a two and a-quarter year period, 17 August 1987 to 10 October 1989. The efforts of the claimants, the Crown and the Tribunal’s research teams has resulted in a priceless database with detail on every facet of the ‘claim’. The tribunal produced a 1254 page report on the findings of the “nine tall trees” and a separate report on the fisheries section of the claim. In 1995 a report by the Waitangi Tribunal on the non tribal element of the ‘claim’ was produced, this is known as the ‘Ancillaries Report’.

Quoted from Volume one, page 174 of the Waitangi Tribunal Report in reference to one segment of the Kai Tahu claim “The predominant theme that constantly arises in the findings of the tribunal and indeed almost as constantly conceded by the Crown, is the failure of the Crown to ensure Kai Tahu were left with ample land for their present and future needs”.

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Settlement
The Crown and Kai Tahu concluded negotiations to settle the historic Kai Tahu ‘claim’ with the signing of a Deed of Settlement at Kaikoura on the 21st November 1997.

Partnership
Kai Tahu embrace the ethic of partnership. The principle of sharing is central to Maori sentiment. Kai Tahu recognise the need to work with the wider community to ensure a positive future for all people. Kai Tahu are the Crown’s Treaty partner and as such have a special status. The concept of partnership is fundamental to the compact or accord embodied in the Treaty of Waitangi. Inherent in it is the notion of reciprocity. The Treaty implies a partnership, exercised with the utmost good faith. The test for regional and territorial authorities is how they develop an effective partnership with Kai Tahu. The authorities might like to consider some of the Waitangi Tribunal’s statements on equitable partnership.

Partnership - The Otago Regional Council View
Every person or body exercising functions or powers under the Resource Management Act in relation to managing the use, development and protection of natural and physical resources shall take into account the principles of the Treaty of Waitangi (section 8 of the Resource Management Act). In identifying the principles to be taken into account the Council will be bound by legal decisions and particularly notes the three principles set out by the Court of Appeal in Court of Appeal v Attorney General 1987 CA 54/87:

(i) The principle of partnership.

(ii) The principle of active protection of Maori people in the use of their lands and waters to the fullest extent practicable.

(iii) The principle of utmost good faith in dealings with the other Treaty partner.

The Council will also take into account the perspective of Kai Tahu Whanui in relation to the principles of the Treaty.

In taking account of those principles, there are two broad elements to the partnership requirements to be considered.

The first is related to the ownership of the region’s natural and physical resources. Ownership issues relating to any of Otago’s resources can only be resolved through consultation between the treaty partners - the Crown and Kai Tahu. This Regional Policy Statement cannot consider ownership issues.

The second element is one of partnership over the management of the region’s natural and physical resources. In taking account of the principles of the Treaty, it is appropriate that this Regional Policy Statement outline how local authorities can recognise and provide for partnership with Kai Tahu relating to the management of the region’s resources.
Regional Policy Statement for Otago
3 Regional Description
3.1 Introduction

This chapter provides a descriptive overview of the Otago region in terms of its population, economy, natural and physical features.

The Otago region, as determined by the Local Government Commission in 1989, comprises approximately 32,000sq km or 3,200,000 hectares of land, making it the second largest region in New Zealand. The region also contains New Zealand’s largest city in terms of land area, with Dunedin covering approximately 3,300sq km. The region stretches from the Waitaki River in the north to The Brothers Point in the south, a distance of 480 kilometres, covering approximately 6,650sq km of Coastal Marine Area.

Otago’s geographic area and districts are shown in Figure 2 (p5).

3.2 Regional Population

Just over 177,000 people lived in Otago in 1991, with 64.5% of the population living in the Dunedin urban area. Although the Waitaki District is divided between both the Otago and Canterbury Regions, 90% of its population resides in Otago. Otago’s population is an ageing one, with significant rises predicted in the over-75 age group. Over 7700 people or 4% of Otago’s population indicated Maori ancestry in the 1991 census.

The region’s population is predicted to rise by 3.5% by the year 2016, from 177,600 in 1991 to 183,900 (Department of Statistics, 1993). The projected increase consists of a large rise in the population of the Queenstown-Lakes District (78%) and a small rise in Dunedin City, which offsets projected decreases in the other districts of Otago.

<table>
<thead>
<tr>
<th>Local Authority Area</th>
<th>Population</th>
<th>% Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waitaki District (part)</td>
<td>19,743</td>
<td>11.1</td>
</tr>
<tr>
<td>Central Otago District</td>
<td>14,934</td>
<td>8.4</td>
</tr>
<tr>
<td>Queenstown-Lakes District</td>
<td>9,966</td>
<td>5.6</td>
</tr>
<tr>
<td>Dunedin City</td>
<td>114,276</td>
<td>64.5</td>
</tr>
<tr>
<td>Clutha District</td>
<td>18,189</td>
<td>10.3</td>
</tr>
<tr>
<td><strong>Usually Resident Population</strong></td>
<td><strong>177,129</strong></td>
<td><strong>99.9</strong></td>
</tr>
</tbody>
</table>

Table 1 Usually resident population of the Otago Region (1991), by Local Authority Area.

3.3 Regional Economy

The use of Otago’s natural and physical resources (eg. land and water) has, since the 1860’s, supported primary production activities. Mining, farming, horticulture, viticulture and forestry have formed the basis of Otago’s development and continue to be major sources of revenue.

Statistics NZ’s 1992 data show that Otago has 8.2 million sheep, which is the second highest number for any region in New Zealand. Lambing percentages and wool production are traditionally within the top three regions in New Zealand. The semi-arid hill and high country of Central Otago is the main source of New Zealand’s unique Merino wool production. Fruit production is a key feature of the inland basins. Irrigation is an important facet of production. The better rainfall experienced in the lower altitudes of South and Coastal Otago, plus irrigation in
Central and North Otago, allows intensive high producing crossbred sheep and beef systems, integrated with dairying, forestry, grain and horticulture production, for export and domestic consumption. These resources provide the basis for Otago’s economic activity which recent forecasts estimate contribute over 5% of New Zealand’s total economic activity.

Tourism is becoming increasingly important to the prosperity of Otago’s communities, contributing approximately $168 million to the regional economy for the year ended March 1990. In that year, Otago hosted approximately 464,000 overseas visitors and around 1,010,000 New Zealand visitors. The Queenstown-Lakes District, the fastest growing local authority in New Zealand and one of the country’s major tourist destinations, hosted an estimated 325,000 international visitors who stayed 845,000 person nights and 103,000 New Zealanders who stayed 262,000 person nights during 1994.

Department of Statistics data indicate that the Otago economy has grown slightly in terms of number of business operating units or people employed over the past five years. While a decline has occurred across all business sectors, recent years have seen a more marked decrease in manufacturing, construction and the primary sectors. Otago reflects the national distribution of industry types, with slightly more people employed in the agricultural sector and a slight under-representation in manufacturing. The region also has fewer people employed in business and financial services and a greater number working in the areas of community, social and personal services.

Community, social and personal services are the most important employment sector in the region, employing 30% of the region’s work force in 1994. Health Care Otago alone employed over 3,800 people or approximately 6% of the total Otago labour force. A further 3,000 people were employed in the provision of tertiary education in Dunedin. This includes the University of Otago, Dunedin College of Education and the Otago Polytechnic. Other Government organisations were also major businesses in the region, with local authorities and government departments likely to employ at least a further 5% of the Otago labour force.

Dunedin dominates in terms of the geographical distribution of businesses in the region, with over 60% of jobs located in the city. The number of people employed in businesses within the rest of Otago tends to be fairly evenly spread amongst the other four districts.

Dunedin City provides many of the services to support rural producers, who in turn provide raw materials which are channelled into the city for processing or which pass through the city’s port or other transport networks. There are four locally recognised harbours in Otago (Oamaru, Karitane, Otago and Taieri Mouth) and the region is served by a major shipping port - Port Otago. Port Otago had a Gross Registered Tonnage of 6,098,700 for the year ending 30 June 1994.

Regional development requires an efficient land transport infrastructure to ensure a fast, safe and comprehensive movement of people and products. While some areas of Otago are isolated or relatively uninhabited, regional communication networks are well established and reliable. Otago has an extensive roading network comprising 1,269 km of State Highways, 124 km of special purpose roads and 8672 km of local roads. Otago’s rail networks extends over 290 km. The road network and, to a limited extent, the rail network link the major towns and rural areas.

The Otago region has been targeted as having the potential to become one of the major forestry regions in New Zealand. The Ministry of Forestry estimate that Otago’s total plantation size is in the order of 92,074 ha as at 1 April 1994 with the predominant
share of trees being located in the Clutha District. A steady increase in the supply of timber is expected, reaching a predicted production of 2,340,000 cubic metres in the year 2015. This growth in wood resource is expected to provide the foundation for an export-led expansion of the forest products industry in Otago.

3.4 Natural and Physical Features

A diverse range of landforms, soils, vegetation, climates and water bodies are found within Otago. The character of the land changes significantly from coastal hills and downlands to broad inland basins and block mountains, through to the Southern Alps with their glacial lakes and rugged alpine features.

The distinctive and characteristic parts of Otago include the tussock and tor covered block mountains and dry inland basins, glacial lakes and their mountain settings, the broad grassy valleys fringed with beech forests extending well into the Southern Alps and the dramatic coastlines around the Otago Peninsula and the Catlins. Another special characteristic of the region is its diversity of vegetation, from the lowland podocarp forests of the Catlins, through the dryland, grassland ecosystems of Central Otago to the high rainfall beech and alpine communities of Mount Aspiring National park.

Against this still predominantly natural backdrop, human activity has overlaid further distinctive characteristics such as large and small scale features left by early miners (water races, tailings, stone structures and clusters of buildings that have remained from the goldrush era), the vegetation patterns associated with long-standing pastoral and horticultural activity, hydro lakes, and the historical architecture of Dunedin and Oamaru. Otago’s diverse historical and cultural past is reflected in its heritage resource, such as Maori archaeological sites, middens and ovens, Central Otago’s goldfield tailings and bridges, Arrowtown’s streetscape, the quarries and kilns located in the Clutha district and Dunedin’s terrace housing, amongst others. Many of the results of human activity are in harmony with their surroundings, for example, the vivid autumn colours of the deciduous trees planted in Central Otago have become yet another feature of the region and are appropriate highlights in the tussock and rock landscape.

Otago’s landscape qualities are important to the region as they define Otago’s distinctive character, and add to the settings for the region’s tourist industry and lifestyles.

Otago contains a range of indigenous ecosystems at different stages of modification; some are still relatively unmodified by human influence, such as the indigenous beech forests in Mt Aspiring National Park and the Catlins, while others, such as tussock grasslands, became established after the destruction of forest by fire at least four centuries ago. All have degrees of landscape, cultural and nature conservation values. Many of these unmodified areas are protected as part of the lands administered by the Department of Conservation, including Mount Aspiring National Park. Some further areas are protected by covenants, while conservation, heritage, ecological and scientific values associated with other areas have been recorded in a variety of independent studies. Relatively unmodified areas characteristic of Otago are important components of its identity.

Otago has New Zealand’s largest area of Crown lands, which include vast areas of high country used predominantly for pastoralism. As physical access improves, more people are using these areas for recreation and relaxation, resulting in actual and potential conflicts between property owners and occupiers and those seeking access. Some of these issues have arisen because the land used for pastoralism is predominantly held under Crown pastoral lease and the public do not have an automatic right of
access to such lands, but must seek the approval of the lessee. Issues have arisen between territorial local authorities, landholders and recreationists over access on public roads, especially unformed legal roads, to the coastal marine area, lakes, rivers and other areas. Maintenance of access to these areas is a matter of national importance and must be recognised and provided for.

Development of lifestyle blocks around the Queenstown-Lakes area has also produced conflict with some favouring the retention of this land as economic units while preserving the natural landscape.

Figure 4 shows that only 26% of Otago’s total land resource is arable (able to be cultivated). Only 8% of this land contains high class soils (2.2% of Otago’s total land resource). Arable land is that land classed as Landuse Capability Classes I, II, III or IV. For an explanation of Landuse Capability Classes, see the glossary. Otago’s high class soils are limited to the Taieri Plain, North Otago downlands, South Otago lowlands, parts of Central Otago and the Strath Taieri and along some river margins. The use of these soils can be constrained by external factors such as economics, erosion, natural and human induced hazards, animal and plant pests.

Patterns in Otago’s landuse are changing. Small holdings are becoming a significant feature of rural landuse, particularly near larger urban settlements and viticulture has become increasingly important in areas previously developed for pastoral farming, eg around Queenstown, Wanaka and Alexandra. Horticultural crops continue to be important, particularly in Central Otago, and farm woodlots and windbreaks have become an important alternative source of revenue as well as providing shelter in exposed places.

Landholders are becoming more willing to experiment with alternatives to traditional agricultural practices in order to retain a viable economic base. The use of minimum cultivation techniques and direct drilling on erosion prone soils, the planting of drought tolerant species in drought prone areas and the growing alternative horticultural crops (eg. essential oils) on areas formerly used for grazing may result in less erosion and soil loss.

In response to market trends, some landholders have diversified into areas such as farm stays. This includes development of run country into ski areas or adventure or wilderness holiday destinations while retaining their traditional pastoral use. Complementary landuses such as adventure tourism over pastoral run country, eco-tourism and farm-forestry emphasise the versatility of Otago’s land resource.
Water and land are closely linked. The Clutha River, which originates in the headwaters of Lakes Hawea, Wanaka and Wakatipu, discharges New Zealand’s largest annual volume of water. Hydro-electric power generation makes use of the volume of this water with power stations being located at Clyde and Roxburgh. This significant catchment also includes much of the physical, historical and natural characteristics that comprises Otago’s character and identity. Other significant natural features of Otago’s water systems include the Taieri catchment (incorporating New Zealand’s third longest river and its most developed scroll plain), a string of coastal water bodies and wetlands (including Lakes Waikoloa, Waipori and Tuakitoto) and numerous high altitude wetlands, string bogs and blanket bogs. Landuse, including riparian management, affects the quality and quantity of surface and groundwater. Abstraction from rivers for irrigation increases soil water balance but reduces instream flows which may adversely affect instream life, including fisheries and wildlife.

Water systems throughout the region receive quantities of sewage and industrial effluent discharged from a variety of urban areas and industrial plants. As well as causing cultural concerns, discharges into water bodies have the potential to degrade the quality of the water resource and to detract from the amenity, natural habitat and visual values of the area. Recreational and tourism use of Otago’s water bodies is a significant activity, with some water bodies being extensively used (eg. Shotover River, Kawarau River, Lake Wakatipu, Lake Dunstan).

Otago’s early wealth and development was largely due to gold mining. Today, both alluvial and hard rock mining, such as Macraes mining operation, occurs in the region and contributes to the regional economy. Modern mining practices, if properly managed and controlled, significantly reduce adverse effects on water, air and soil resources in comparison with the old practices. In some instances rehabilitation of mined areas may produce land of higher quality than that which existed prior to mining. While Otago’s economy is heavily dependent on primary industry sectors, the winning and processing of minerals in the region provides further opportunities for diversification and economic development.

Otago’s coastline is scenic and varied, with sand and rock beaches, secluded bays and sheer cliff margins which limit accessibility. All of these features are highly valued by the people of the region but the tourist and recreational potential of Otago’s coast has yet to be fully realised. Significant natural features include the Otago Peninsula, areas of fossil and mineral exposures, archaeological sites, wetlands, estuaries, lagoons and harbours, islands, headlands, peninsulas and habitats. The Moeraki boulders, together with the yellow-eyed penguin and seal populations and the Taiaroa Head albatross colony are important tourist and conservation aspects of Otago’s coast which highlight its distinctive character. The Catlins area has high natural and scenic values including the only area on New Zealand’s east coast with an unbroken natural vegetational sequence from podocarp broadleaf forest at the coast to sub-alpine shrub and tussock-land at higher altitudes.

Global climate change may threaten low-lying coastal areas with rising sea levels which could result in coastal erosion, invasion by the sea of urban or rural areas and contamination of surface and groundwater supplies. Low-lying areas away from the coast would flood more frequently as rivers bank up against rising sea levels. The biodiversity of inland parts of Otago may also be affected due to changes in local climate.

The sustainable management of the region’s resources requires the regional, city and district councils to consider all related issues to achieve an integrated strategy of sustainable regional growth and development. Increasing human demands (urban, industrial, agricultural, horticultural, tourist and recreational) are placing
pressures on resources which require careful management to ensure that future needs can be met.

The sustainable management of Otago’s resources requires that communities develop wise resource management attitudes, preferably through education rather than regulation. Co-operation of individuals towards a long-term sustainable system of resource use will provide regional as well as local benefits.
4 Manawhenua Perspective
4.1 Introduction

This chapter of the Regional Policy Statement has been developed in consultation with Kai Tahu. The matters of resource management significance to Manawhenua within the Otago region, as developed by Kai Tahu and conveyed to the Otago Regional Council are contained in the Issues section of this chapter.

The mythology, traditions, culture and life of the indigenous people of Te Waipounamu, Te Waka O Aoraki (South Island) the Waitaha, Hawea, Rapuwai, Kati Mamoe and Kai Tahu are intricately linked with the Otago region. The present day descendants are known as Kai Tahu whanui (the large family of Kai Tahu), the custodians of the tribal lore and history. The way in which they relate to their environment is influenced by the very earliest of their ancestors and in turn by their actions which will influence the welfare of future generations.

In this document, the use of the term “Kai Tahu” should be considered as inclusive of “Waitaha”, “Hawea”, “Rapuwai” and “Kati Mamoe”. The term “iwi” (tribe) is used in the same context.

For a definition of the Maori terms and phrases, see Table 2. The glossary contains a definition of all Maori terms and phrases used in this document.

Timatatanga (Creation Tradition)
Water is central to all Maori life. Traditionally, life came into being when Maku mated with Mahoranuiatea, another form of water and begat Rakinui, the sky. Rakinui coupled with a number of wives, including Papatuanuku. From Raki’s various unions came vegetation, animals, birds, the mountains and people and a host of departmental atua. For example, Tane is the atua of the forests and creatures within them.

Like other Maori iwi, Kai Tahu claim the same descendancy from Raki and his wives. Whakapapa then, binds Kai Tahu to the mountains, forests and waters and the life supporting them. In this way, all things are considered to have a mauri (life force) and to have a genealogical relationship with each other. People are therefore related to the natural world.

Wairua (Life Principle)
It is this very direct link, the whakapapa (genealogical) relationship with all things, that influences Kai Tahu philosophy. The interconnectedness of all things, the welfare of any part of the environment influences the welfare of people. This is best portrayed by the whakatauki (proverb):

If the marae of Tane (deity of the forests) survives
If the marae of Tangaroa (deity of the sea) survives
The people live on

Mauri (life force)
Kai Tahu maintain that all elements of the environment possess a mauri or “life force”, be they mountain, flora, or fauna, their quality and sanctity is to be carefully protected from degradation. The mauri is an extinguishable value, the loss of which is recognised by its degraded state, the loss of life supporting values, and at worst, irreversible breakdown.

Mauri binds the spiritual and physical elements of resources together, enabling their existence within the bounds of their own creation. When something dies, the mauri is no longer able to bind the physical and spiritual elements together and thereby give life.
Naming the Land
Kai Tahu whanui tradition of settlement is recorded in the names on the landscape. The history is in the names. Such names take their source from the earliest people, creation traditions, incidents, food resources, weather and ancestors to name a few. The names often reflect specific characteristics of a location. The physical presence of the ancestors in every part of Otago is evidenced by the names that survive. Some examples such as Wanaka, Hawea, Otakou (Otago), Waihola, Kaitangata, Owaka, Moeraki, Kawarau, Wakitipu, Makarora, Pounawea, Waitaki and Waikouaiti form part of every day language in Otago. It is the viewpoint of Kai Tahu that many traditional placenames have been displaced by European counterparts, submerged and in many cases lost.

Waahi Tapu (Sacred Places)
Numerous waahi tapu exist in the Otago region. They take a variety of forms and may be important to iwi while others will have special significance to hapu or whanau. The urupa or burial site is the most significant of all waahi tapu; the place where the bones of many ancestors rest: gone but never forgotten. Other waahi tapu may have significance to iwi such as the site where Pukekura pa once stood at Taiaroa Head, a pa whose history and occupants feature in South Island pre-European contact history.

Mahika Kai (Places where food is produced or procured)
The development of a comprehensive system of food and resource use in the Otago region attracted Kai Tahu into all corners of Otago on a seasonal basis. Numerous food resources, for example ducks, weka, eel and moa were sought after inland. Coastal dwelling people relied on eels, fern and ti, ducks and estuarine and offshore fish. Many forest dwelling birds were also harvested. Water was central to all activity, a sustainer of life. Hapu claimed considerable honour, prestige and mana by virtue of their water and associated resources. This system of resource use, to procure or produce a wide range of resources, is known as mahika kai. Annual expeditions were made beyond Otago also to gather or trade goods.

Kohatu Taoka (Treasured Stone Resources)
Stone materials important to the economy of Kai Tahu, such as greenstone, silcrete, porcellanite and schist were gathered in the interior of Otago and basalt and chert from the coast.

Manawhenua (Those with Rangatiratanga)
The manawhenua of Otago, Kai Tahu whanui, relate to the environment in both a spiritual and physical manner. Their long association with Te Waka O Aoraki (one of the earliest names applied to the Island) or Te Waipounamu (a later name), is evidenced by the manner in which tradition links Kai Tahu from the beginning to the present day - from the time of nothingness to the creation of all things - culminating with the arrival of the first people. The placement of names on the landscape further enhanced the link. The history of occupation and travel throughout the region has left many sites of importance to Kai Tahu. These include places of burial, settlement, battles and of mahika kai and stone and timber resources, to name a few. Kai Tahu identity is indelibly intertwined with the entire region. This enduring relationship enjoyed by Kai Tahu is the responsibility of each generation to protect and care for through the exercise of Kaitiakitanga.

Kaitiakitanga (Guardianship)
Kaitiakitanga refers to how people are the guardians and protectors of places, objects and ideas of value to them. Each means of protection is variable to the place or thing being protected. The traditional relationship Kai Tahu share with the land, sea and air are important to them. Of importance to iwi is the opportunity to provide input into resource management, protecting that which is significant to iwi by restoring its mauri and ensuring that sustainable use of the resource is achieved. In this, iwi have a desire to exercise kaitiakitanga in the region. Enhancement programmes and studies of particular resources lead to alternative methods of use and development in areas where co-operation between Kai Tahu and authorities can occur. The regeneration of plants, such as pingao used in cultural handcrafts, is important to iwi. Kai Tahu value conservation for sustainable use purposes
rather than for its intrinsic values alone. This needs to be addressed to achieve mutual understanding and respect.

Kaitiakitanga in the present day brings Kai Tahu into direct contact with all resource users. The transmitting of cultural concepts and methods of resource use and protection requires consultation.

Consultation on the development of resource policy and plans, and in response to resource consents, is a key element in achieving recognition of kaitiakitanga, and provides Kai Tahu with the opportunity to advocate for the sustainable use and management of the natural and physical resources consistent with cultural beliefs and values.

Management
Maintaining the balance between the main elements of kaitiakitanga is central to the objectives of Maori environmental management systems. This is governed by the use of the concepts of:

- Kawa - protocol and customs, learnt from childhood
- Tapu - spiritual protection
- Noa - unrestricted
- Rahui - restrictions for a limited or indefinite period

These elements are an essential component of Te Ao Maori (the maori world) and the belief system of Kai Tahu. Every member of the community understands and shares the responsibility of living by these customs to avoid adverse effects on the environment.

Present day Kai Tahu
The centres of cultural activity for Otago Kai Tahu are the papatipu marae based runanga of Te Runanga O Moeraki at Moeraki, Kati Huirapa Ki Puketeraki Runanga near Karitane, Te Runanga Otakou at Otakou and Te Runaka Hokonui near Gore. The former three Runanga are located on Maori Reserves, land that has never been alienated and is part of the wider tribal runanga network of which there are eighteen papatipu runanga. The re-emergence of traditional runanga may occur in Otago as Kai Tahu return to their papatipu lands. Runanga to the north and south of Otago share an interest over inland areas. The four runanga are principal kaitiaki for Kai Tahu resource management matters in Otago.

The Te Runanga o Ngai Tahu Act 1996 created the body corporate responsible for the collective interests of Kai Tahu whanui, and replaces the former Ngai Tahu Maori Trust Board. The legislation provides Te Runanga o Ngai Tahu with statutory recognition as an iwi authority, representing the whole body of Kai Tahu whanui. Papatipu Runanga, of which there are currently four in Otago, are constituent members of the body corporate. Te Runanga o Ngai Tahu is directed by and receives policy guidance from the member runanga, it does not replace the kaitiaki function of the individual runanga.

Maori Reserves
A number of Maori reserves exist in Otago; areas which were excluded from the land sales of the 1840s. These reserves are steeped in history and association and are a place of belonging. For many Kai Tahu it is their turangawaewae. Remaining reserves are located at Moeraki, Waikouaiti, Otakou, Onumia (Taieri Mouth) and Te Karoro (Kaka Point).

Other categories of Maori land exist at Koputai (Port Chalmers) and Otepoti (Dunedin) where tauraka waka were recognised. In addition, land was held at Manuhaea (Lake Hawea), Aramoana, Clarendon (Taieri Mouth) Tautuku-Waikawa and Glenmorum amongst others. Landing reserves were allocated at Matainaka (Waikouaiti) and the former Lake Tatarai on the Taieri Plains.

Living on the Land
Papakaika housing and the ability to live on ancestral land is important to Kai Tahu. Land was traditionally owned communally. The decision by the Crown in 1860 to enact legislation which created individual title to Maori land led to multiple ownership and eventual fragmentation of land holdings. The original purpose of the retention of these reserves was lost in the process. The exodus
from the land in search of jobs has reduced many reserves to unused land. Large areas are in a natural state, with numerous absentee owners. Attempts by rating authorities to apportion rate demands has in the main failed. The Rating and Amendment Act 1992 allows for a more flexible approach to be taken where multi-owned land is concerned.

Some sites and resources of cultural importance are located on private land, where protection and access requires the co-operation of the landholder. In cases where the whanau or runanga have a particular interest, consultation with the landholder occurs.
Table 2  Glossary of Maori Terms (See also Appendix A)

<table>
<thead>
<tr>
<th>Term</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atua</td>
<td>God</td>
</tr>
<tr>
<td>Hapu</td>
<td>Subtribe, extended whanau</td>
</tr>
<tr>
<td>Inaka</td>
<td>Whitebait, colour of whitebait as in pounamu</td>
</tr>
<tr>
<td>Inaka pounamu</td>
<td>Pale greenstone</td>
</tr>
<tr>
<td>Iwi</td>
<td>Tribe</td>
</tr>
<tr>
<td>Kai Tahu</td>
<td>Descendants of Kai Tahu</td>
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<tr>
<td>Kai Tahu whanui</td>
<td>The large family of Kai Tahu</td>
</tr>
<tr>
<td>Kaitiaki</td>
<td>Guardians</td>
</tr>
<tr>
<td>Kaitiakitanga</td>
<td>Guardianship</td>
</tr>
<tr>
<td>Kohatu Taoka</td>
<td>Treasured stone resources</td>
</tr>
<tr>
<td>Kohanga</td>
<td>Reseeding areas for shellfish</td>
</tr>
<tr>
<td>Koputai</td>
<td>Traditional name for Port Chalmers</td>
</tr>
<tr>
<td>Kotahitanga</td>
<td>Oneness</td>
</tr>
<tr>
<td>Kohi tanga</td>
<td>Unidentified Maori remains</td>
</tr>
<tr>
<td>Mahika Kai</td>
<td>Places where food is procured or produced</td>
</tr>
<tr>
<td>Mahinga mataitai</td>
<td>Places where sea food has been traditionally gathered</td>
</tr>
<tr>
<td>Mana</td>
<td>Authority or influence or prestige</td>
</tr>
<tr>
<td>Manawahenua</td>
<td>Those with rangatiratanga for a particular area of land or district</td>
</tr>
<tr>
<td>Manuhaea</td>
<td>Lake Hawea (site of settlement)</td>
</tr>
<tr>
<td>Marae</td>
<td>Courtyard or meeting place</td>
</tr>
<tr>
<td>Mauri</td>
<td>Life force</td>
</tr>
<tr>
<td>Muru</td>
<td>Confiscate</td>
</tr>
<tr>
<td>Otakou</td>
<td>Kai Tahu settlement on Otago Peninsula</td>
</tr>
<tr>
<td>Otepoti</td>
<td>Dunedin</td>
</tr>
<tr>
<td>Pa</td>
<td>Village or fortified village</td>
</tr>
<tr>
<td>Papakaika</td>
<td>Settlement</td>
</tr>
<tr>
<td>Papatipu</td>
<td>Maori Land</td>
</tr>
<tr>
<td>Papatipu Whenua</td>
<td>Ancestral lands</td>
</tr>
<tr>
<td>Papatuanuku</td>
<td>Earth mother</td>
</tr>
<tr>
<td>Pingao</td>
<td>Fibrous plant used for weaving</td>
</tr>
<tr>
<td>Rahui</td>
<td>Restrictions</td>
</tr>
<tr>
<td>Rakinui</td>
<td>Sky Father</td>
</tr>
<tr>
<td>Rangatiratanga</td>
<td>Chieftainship or authority</td>
</tr>
<tr>
<td>Runanga</td>
<td>Local representative groups or community system of organisation</td>
</tr>
<tr>
<td>Tane</td>
<td>Deity of the forests</td>
</tr>
<tr>
<td>Tangaroa</td>
<td>Deity of the sea</td>
</tr>
<tr>
<td>Taoka</td>
<td>All things highly prized, including treasures, property, a resource or resources or even a person</td>
</tr>
<tr>
<td>Taoka raranga</td>
<td>Prized cultural resource used in weaving, flax, pingao</td>
</tr>
<tr>
<td>Tapu</td>
<td>Sacred</td>
</tr>
<tr>
<td>Te Waipounamu</td>
<td>A traditional name for the South Island</td>
</tr>
<tr>
<td>Te Waka O Aoraki</td>
<td>One of the earliest names applied to the South Island</td>
</tr>
<tr>
<td>Ti Kouka</td>
<td>Cabbage trees</td>
</tr>
<tr>
<td>Timatatanga</td>
<td>Creation tradition</td>
</tr>
<tr>
<td>Tuaki</td>
<td>Cockle</td>
</tr>
<tr>
<td>Tupapaku</td>
<td>Human corpses</td>
</tr>
<tr>
<td>Turangawaewae</td>
<td>Place of belonging through ancestral rights, linked to land</td>
</tr>
<tr>
<td>Wairua</td>
<td>Burial places</td>
</tr>
<tr>
<td>Whanau</td>
<td>Cost</td>
</tr>
<tr>
<td>Utu</td>
<td>Place</td>
</tr>
<tr>
<td>Waahi</td>
<td>Treasured resources</td>
</tr>
<tr>
<td>Waahi Taoka</td>
<td>Sacred places</td>
</tr>
<tr>
<td>Waahi Tapu</td>
<td>Water</td>
</tr>
<tr>
<td>Wai</td>
<td>Coastal waters</td>
</tr>
<tr>
<td>Wai ki tae</td>
<td>Inland waters</td>
</tr>
<tr>
<td>Wai ki uta</td>
<td>Places where water burial was practised</td>
</tr>
<tr>
<td>Wairua</td>
<td>Life principle</td>
</tr>
<tr>
<td>Whakapapa</td>
<td>Genealogy or family tree</td>
</tr>
<tr>
<td>Whakatauki</td>
<td>Proverb</td>
</tr>
<tr>
<td>Whanau</td>
<td>Family</td>
</tr>
<tr>
<td>Whanui</td>
<td>Large or extended</td>
</tr>
</tbody>
</table>
4.2 Roles of Different Agencies

Under the Resource Management Act, every person who exercises functions or powers under the Act in relation to the use, development and protection of natural and physical resources, must take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi) (Section 8 of the Act).

As well, the Act specifies that every person who exercises such functions and powers must recognise and provide for the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu and other taoka as a matter of national importance (Section 6(e) of the Act). Section 7(a) of the Act also requires that every person exercising such functions and powers have particular regard to Kaitiakitanga.

These requirements under the Resource Management Act must be recognised by local authorities when considering policy and plan development, in the carrying out of works and in the consideration of consent applications. This Regional Policy Statement puts in place a framework within which that recognition can be provided for.
## 4.3 Issues

### 4.3.1 Waahi Tapu (Sacred Places)

The importance of waahi tapu, culturally, spiritually and physically, to Kai Tahu requires greater recognition.

The Resource Management Act leaves waahi tapu undefined. A major reason for not defining waahi tapu is that subtle differences to its meaning occur between the various iwi. To Kai Tahu, waahi tapu are places held in reverence according to tribal custom and tradition. Many waahi tapu exist in Otago, some important tribally, while others are important to runanga. For this reason knowledge of the location of waahi tapu may be limited to a small number of individuals such as in cases where the waahi tapu is of significance to a family who protect and care for that site.

### 4.3.2 Waaahi Taoka (Treasured Resources)

Significant cultural loss to Kai Tahu has occurred through the lack of recognition and protection given to Waahi Taoka and its importance to the culture of Kai Tahu.

“Taoka” is defined as meaning “all things highly prized” and is capable of incorporating a range of economic, spiritual and cultural associations. The word “waahi” means place/s. While having different status to waahi tapu, nonetheless consultation with Kai Tahu and Runanga is required before any action is taken involving such sites. Waahi taoka are a range of resources and places that are important to iwi and runanga. Taoka signifies the whakapapa (genealogical) tree of our world; waahi taoka are the various parts of it, the branches of that tree. Waahi taoka are those resources that sustain life and are culturally and historically important to Kai Tahu. In some contexts waahi taoka can be similar to waahi tapu for the purpose of resource management. Waahi taoka are among those resources that require consultation with runanga and iwi by regional and territorial authorities in Otago.

### 4.3.3 Wai (Water)

The mauri of many of Otago’s water bodies has been seriously eroded by pollution discharges and further eroded by land and water management practices.

Water plays a significant part in Kai Tahu traditions and culture. Water is seen as the provider and sustainer of life. The level of water flow, quality of the water, the integrity of the various categories of water traditionally known to Kai Tahu and the health or the mauri of water bodies is important. The mahika kai resources that Kai Tahu depend on are in turn reliant on water.
quality and quantity. The loss of a substantial part of this resource through drainage, pollution and damming has resulted in the material and cultural deprivation of Kai Tahu.

4.3.4 Mahika Kai (Places where food is produced or procured)
The vast majority of mahika kai in Otago has been lost through:
(a) Land clearance;
(b) Water abstraction;
(c) Wetland drainage;
(d) Pollution discharges;
(e) Reclamations;
(f) The removal of access;
(g) Damming of water bodies.

Mahika kai, described as places where food resources could be procured or produced, is the cornerstone of Kai Tahu existence and culture in Te Waipounamu. In the southern half of the South Island Kai Tahu were dependent on their knowledge of mahika kai and their ability to gather such resources from the land, forests, rivers, lakes and sea. Kai Tahu were a highly mobile iwi and the people depended for their survival on hunting and gathering of food resources over vast distances. Kai Tahu would move to an area and there catch and preserve food to be taken back to the more permanent settlements. The seasonal journeys also gave hapu the opportunity to barter with other hapu. Wilful destruction or pollution of mahika kai was avoided with the aid of an elaborate set of rules, restrictions and guidelines which were enforced by concepts such as tapu, rahui, utu and muru. It was through kaitiakitanga that the balance of resource use and protection was operated. The loss to Kai Tahu of the major part of their mahika kai resources is a breach of the Treaty of Waitangi, redress for which is incorporated in the deed of settlement (21/11/97) between Kai Tahu and the Crown, to be passed into legislation. Regional and territorial authorities will need to have regard to the cultural redress elements of the resulting settlement legislation.

4.3.5 Kaitiakitanga (Guardianship)
The manawhenua concept and practice of Kaitiakitanga needs to be recognised or provided for in the management of Otago’s natural and physical resources.

Kaitiakitanga (Guardianship), one of the elements of the social order of Kai Tahu, was arranged in accordance with the natural resources and the exercise of tino rangatiratanga. The necessities and comforts of life were provided by this arrangement, barter and exchange among the various groups being the practical outcome of this cooperation.
4.3.6 Whenua Papakaika (Ancestral Land)

Inappropriate laws controlling papakaika Maori Reserves have resulted in the inability of Kai Tahu to utilise lands in a manner consistent with their cultural, spiritual and economic needs.

Whenua Papakaika are places of traditional settlement. They are ancestral lands available to Kai Tahu for social, economic and cultural development. This is land inherited from the ancestors. It is the life blood of the people and the springboard of the generations that have gone before. It is for the present and future generations to determine the appropriate means by which these resources can benefit the people. Present day papakaika is the remnants of the land reserved from the land sales of the 1840s and other land and reserves subsequently allocated. These resources were and still are, intended to be available to Kai Tahu for their economic, social and cultural security. A series of legislative measures has seen the reduction of this resource to the extent that it now forms an extremely small acreage from which to prosper. The loss of the all-important mahika kai economy the people depended on added to their woes. In the present day much of the papakaika lands are fragmented, multiply owned and unproductive. The people are no longer living on their ancestral land, attributable in part to the laws preventing settlement on multiply owned lands.

People exercising powers and functions of central and local government need to be aware and responsive to the particular requirements of Maori lands when preparing or reviewing legislation, plans and policies in order that the cultural aspirations of Maori in relation to their papatipu lands meet the potential originally intended. What lands remain in the ownership of iwi,
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<th>Other Issues</th>
</tr>
</thead>
</table>

hapu and whanau should receive recognition and appropriate policies to reflect the original purpose of the reserve land. It should be noted that “ancestral lands” is not confined to lands in Maori ownership but may relate to lands and places important to iwi.
4.4 Objectives

4.4.1 Waahi Tapu (Sacred places)
To recognise the spiritual and customary importance of waahi tapu (such as burial places) to Kai Tahu and to recognise and provide for the protection of waahi tapu from physical disturbance, erosion, pollution and inappropriate landuse.

Urupa are the most important of all waahi tapu to Maori. These urupa include those in present use and those used in traditional times. The dead are important to Kai Tahu as they are the link to the past and to the land. By protecting the urupa, the mana of the ancestors and their descendants is remembered. Knowledge of traditional urupa location is often retained by certain individuals within iwi. These individuals are not always willing to divulge the location of urupa for fear of desecration. It may be that the iwi wish to use “silent files” to protect this information. Urupa are generally unmarked sites and may have some distinguishing features such as Ti Kouka (cabbage trees) growing nearby. Many urupa have been disturbed by earthworks in the past and also suffer from pollution. Urupa are given protection under the NZ Historic Places Trust Act 1980, the Maori Affairs Act 1953 and the Resource Management Act. These acts can be over-ridden by other legislation ie. Petroleum Act 1981. Because of this urupa do not have the absolute protection that Kai Tahu require Kai Tahu propose to develop a site location register for all known waahi tapu in order that authorities and resource consent applicants are able to consult with the appropriate Kai Tahu runanga. It will also provide information on procedures to follow in the case of archaeological sites being unearthed. Such culturally important sites should be protected from negative impacts such as pollutants.

4.4.2 Waahi Taoka (Treasured Resources)
To recognise and provide for the special significance that all taoka play in the culture of Kai Tahu.

The following categories of waahi taoka are provided as a guide to the range of resources requiring consultation with iwi and runanga. This should not be seen as the complete listing of waahi taoka but rather as an indicative listing. Individual runanga may have waahi taoka that are particularly important to them.

-Archaeological: Old village sites, occupation or camp sites, earth ovens, rock art, canoe landing sites and quarry sites for stone tools.
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<tr>
<th>Objectives</th>
<th>Explanation and Principal Reasons for Adopting</th>
<th>Policies</th>
<th>See Also Other Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mahika Kai</td>
<td>Places where food has historically been procured or produced.</td>
<td>13.4.1</td>
<td>13.4.4</td>
</tr>
<tr>
<td>Waahi Ana</td>
<td>Important cave areas.</td>
<td>14.4.1 to 14.4.2</td>
<td>15.4.1</td>
</tr>
<tr>
<td>Tuhituhi Nehera</td>
<td>Rock drawing sites.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pa Tawhito</td>
<td>Ancient Pa sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waahi Tohu</td>
<td>Locators and their names within the landscape</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waahi Paripari</td>
<td>Cliff areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waahi Raranga</td>
<td>Sources of weaving material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauraka Waka</td>
<td>Canoe landing sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauka</td>
<td>Mountains</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waahi Kohatu</td>
<td>Rock formations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waahi Rakau</td>
<td>Areas of important trees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urupa</td>
<td>Burial places</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wai</td>
<td>All water</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4.4.3 Wai (Water)
To recognise the principle of wairua and mauri in the management of Otago’s water bodies.

In the traditions of Kai Tahu water has figured as a most important taoka. All life began with the mating of Maku and Mahoranuiatea, who were both forms of water. To Kai Tahu the rainfall that nourishes the earth is associated with Rakinui’s tears of sadness at the forced parting from his loved one, Papatuanuku. The traditions and past practices determine the values Kai Tahu give to water; a tradition built on respect and pragmatism. The prestige of a people is linked to the quantity and quality of the resources available to them and the ability to share with others. As an example Otakou is known throughout the country for the size of tuaki (cockles) that visitors to the marae have enjoyed over the ages. This is a source of mana. The ability to safely continue the tradition of gathering tuaki is dependent on the water quality of the harbour. Traditional values are affected by other users of the water resource. Most Kai Tahu papakaika are situated at the bottom of water catchments, at mouths of rivers and harbours, similar to Otakou.

Customary classification of the water bodies of Te Waipounamu
was established by the Waitaha tribe many centuries ago, from who the descendant tribes of Kai Tahu and Kati-Mamoe in turn derived their customary practices. These water classifications included:
- **Hukawai**: Melt water
- **Repo Raupo**: Wetlands and swamps
- **Wai Tohi**: Ceremonial use
- **Wai Whakaheke Tupapaku**: Water burial sites
- **Wai Mataitai**: Important estuarine waters
- **Wai Maori**: Important fresh water areas
- **Waiora**: Area of water used for healing
- **Wai Puna**: Important springs
- **Wai Mate**: Poor quality water
- **Wai Kino**: Polluted water

Over a long period of time Kai Tahu accumulated an extensive amount of knowledge of water resources and water based food resources (mahika kai). Water and the availability of good quality water determined the siting of villages and the rhythm of their lives. It is the degradation of the values affecting the traditional classifications that concern Kai Tahu.

4.4.4  **Mahika Kai (Places where food is produced or procured)**

To maintain and enhance mahika kai and access to those traditional resources.

The rights and expectations of Kai Tahu in respect of what little customary mahika kai remains in Otago should be recognised and understood by authorities in Otago. This will require greater interaction between Kai Tahu and authorities in the region to achieve an understanding of the relationship of iwi and runanga and their mahika kai. A mix of methods in achieving greater Kai Tahu participation in environmental management will be required in Otago. Access to mahika kai resources of importance to iwi and runanga needs to be maintained and enhanced. It is important to note the role hapu (sub-tribe) play in determining resource use and policy according to local conditions and preferences. Hapu
organise their community and political activities through the runanga community system. Runanga represent the rangatiratanga of the hapu in their district and operate as kaitiaki for their traditional area of interest. The hapu is the primary social and economic unit in Maori society. In some areas, where more than one runanga holds rangatiratanga, there will be a need for consultation with Kai Tahu iwi as well as individual runanga.

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Explanation and Principal Reasons for Adopting</th>
<th>Policies</th>
<th>See Also Other Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.4.5 Kaitiakitanga (Guardianship)</td>
<td>To incorporate the concept and spirit of kaitiakitanga in the management of Otago's natural and physical resources in a way consistent with the values of Kai Tahu.</td>
<td>5.5.1</td>
<td>5.4.1 to 5.4.5</td>
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<td></td>
<td></td>
<td>5.4.1</td>
<td>5.4.1 to 5.4.5</td>
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<td></td>
<td></td>
<td>6.4.1 to 6.4.8</td>
<td>7.4.1</td>
</tr>
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<td></td>
<td></td>
<td>7.5.1</td>
<td>8.4.1 to 8.4.5</td>
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<tr>
<td></td>
<td></td>
<td>8.5.1</td>
<td>9.4.1 to 9.4.3</td>
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<td></td>
<td></td>
<td>9.5.1</td>
<td>10.4.1 to 10.4.3</td>
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<td></td>
<td></td>
<td>10.5.1</td>
<td>11.4.1 to 11.4.4</td>
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<td></td>
<td></td>
<td>11.5.1</td>
<td>12.4.1 to 12.4.3</td>
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<td></td>
<td></td>
<td>13.5.1</td>
<td>14.4.1 to 14.4.2</td>
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<td>15.4.1</td>
<td>15.4.1</td>
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4.4.6 Whenua Papakaika (Ancestral Land)
To recognise the right of Kai Tahu to manage and utilise their whenua papakaika.

The spiritual and traditional role of Kai Tahu in the care and management of the natural environment is borne from hundreds of years of deep and close affinity to the resources. There is a duty to ensure that future unborn generations will enjoy the same connection and benefits. The recognition and provision for the role of kaitiakitanga is of importance to iwi and runanga.

The policies, methods and anticipated environmental results derived from the issues and objectives of the Manawhenua chapter can be found in each of the relevant chapters of this Regional Policy Statement.
5 Land
5.1 Introduction

Much of the prosperity of Otago’s communities has been derived from the land. Maintaining the productive capacity of the land is essential for the continued prosperity of Otago’s communities. Otago’s land resource also gives rise to Otago’s distinctive character, typified by its rugged and varied topography, incised river valleys, the natural landscape, high altitude lakes, significant water bodies and wetlands, diverse vegetation and isolated inner reaches. Large areas of Otago have high landscape, cultural and nature conservation values.

Mining, farming, horticulture and forestry have historically formed the basis of Otago’s development and remain the major sources of revenue. Tourism and recreation are now major areas of economic activity and viticulture is growing in importance.

The productive capacity of land can be limited by physical constraints, knowledge and abilities, floods, droughts, erosion, animal and plant pests and contamination of sites. At the same time, increasing pressures of use are being placed on Otago’s land resource. The use of Otago’s land based resources must be managed within a framework which maximises present and future opportunities.

The sustainable management of Otago’s land resource requires communities to develop wise resource management attitudes. Land owners need to work together on a regional and local basis in order to sustain long-term systems of resource use. A lack of information in some circumstances may constrain the sustainable management of Otago’s land resources. The collection of relevant information and the maintenance and development of existing knowledge bases is therefore an important component in ensuring the continued sustainability of Otago’s land resource.
5.2 Roles of Different Agencies

Several agencies are responsible for the management and the statutory administration of Otago’s land resources.

5.2.1 Central Government

The Minister for the Environment has an overall view and monitoring role and is responsible for:
- The preparation of national policy statements to guide management of the land resource.
- Considering proposals of national significance at a national level.
- The setting of national environmental standards for matters including contaminants, soil erosion and soil quality.

The Commissioner of Crown Lands under the Land Act 1948, administers Crown Lands, including Crown Leases, and also has responsibility relating to the authorisation of fires on these lands.

The Department of Conservation is responsible for the administration of land in Otago held under the Conservation Act 1987 and the National Parks Act 1981 and reserves under the Reserves Act 1977 that are not vested in territorial local authorities. These lands include national and forest parks, conservation areas, wildlife refuges and marginal strips. The department is also responsible in terms of Section 3 of the Reserves Act for ensuring, as far as possible, the preservation of representative samples of all classes of natural ecosystems and landscape. The department’s functions include conservation advocacy in relation to natural and historic values on land it does not administer and it is the agency responsible for the administration of funds available for pest and weed control on un-allocated Crown land. The Department of Conservation also has responsibilities under the Forest and Rural Fires Act 1977 relating to fire control on, and in the vicinity of, the conservation estate.

5.2.2 Otago Regional Council

The Otago Regional Council is responsible for controlling the use of land for the purposes of soil conservation, the maintenance and enhancement of water quality, the avoidance or mitigation of natural hazards and the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation of hazardous substances. The Otago Regional Council is required to establish and implement policies to achieve the integrated management of the natural and physical resources of the region and to prepare policies in relation to actual or potential effects of the use, development or protection of land which are of regional significance.

5.2.3 Territorial Local Authorities

Territorial authorities are responsible for the integrated management of the effects of the use, development and protection of land and associated natural and physical resources within the city or district. This includes the control of subdivision. Territorial authorities complement the role of regional councils in the prevention or mitigation of actual or potential effects of natural hazards and hazardous substances. Territorial local authorities also have responsibilities under the Forest and Rural Fires Act 1977 relating to fire control on rural land.
5.3 Issues

5.3.1 The primary productive capacity of Otago’s high class soils may be compromised by inappropriate use and development.

Soils in many parts of Otago are not being used intensively but are still capable of producing a wide variety of crops. Whether a particular soil can be defined as being of high class or not is determined from soil, land and climatic characteristics. High class soils are defined as “Soils that are capable of being used intensively to produce a wide variety of plants including horticultural crops”. This definition also requires good soil and other resource features that in combination are capable of producing a wide range of crops. It does not include areas that may be suited to one or two specialist crops, largely due to the climate rather than the soil quality. There is a need for the region’s high class soils to be defined on maps to identify their location and extent.

At the same time, urban expansion and other uses incompatible with preservation of the primary productive capacity of high class soils are encroaching onto these high class soils which are limited in extent around Otago.

5.3.2 The primary productive capacity of Otago’s land resource may be compromised by activities which result in one or more of the following:

(a) The loss of vegetation cover; or
(b) The spread of plant and animal pests; or
(c) The degradation of the soil resource; or
(d) Flooding or inadequate drainage.

Sustaining the primary productive capacity of the land is important for Otago. While appropriate land management techniques can enhance productive capacity, it can also be reduced through such practices as the use of drought susceptible pasture species in dry areas of North and Central Otago, the inappropriate removal of vegetation, the use of traditional cultivation practices such as working soil on steep slopes or in dry, windy conditions, the burning of tussock grassland and post burn management where this causes a long term reduction in soil nutrients, or organic carbon, exposure of soil to wind erosion and a greater risk of weed invasion, and other inappropriate land management techniques.
### Issues

Animal and plant pests are a serious risk to the primary productive capacity and well being of the land, its ecosystems and its habitats. Examples within Otago include rabbits, possums, hieracium, nodding thistle and gorse. Soil degradation is defined as “a change in soil properties that causes a long-term decline in primary productive capacity”. Soil erosion is the most severe form of soil degradation but may be preceded by less obvious changes to physical, chemical and biological properties of topsoil and subsoil that affect plant growth and long-term primary productive capacity. These more subtle forms of soil degradation may take the form of topsoil compaction, loss of permeability, loss of fertility, loss of organic matter and declining biological activity.

#### 5.3.3 Otago’s water resources may be adversely affected by land activities.

The use of Otago’s land resources can adversely affect adjacent water resources, causing changes to water quality and quantity which can create downstream impacts. Such effects include increased slope instability leading to increased sedimentation, decreased water quality through land runoff and increased stormwater runoff from paved areas and areas with changed vegetation cover. Beds and banks of water bodies can be destabilised through activities such as gravel extraction and instream mining.

#### 5.3.4 Otago’s outstanding natural features and landscapes are threatened by inappropriate subdivision, use and development.

Much of Otago’s natural character is derived from its natural features and landscapes. The Resource Management Act 1991 requires that in achieving the purpose of the Act, recognition and provision shall be made for the protection of Otago’s outstanding natural features and landscapes from inappropriate subdivision, use and development. This protection is required in order to ensure that those features and landscapes will always be a part of Otago and that they will be there for future generations to enjoy and as the basic resource for recreation and tourism.
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</thead>
<tbody>
<tr>
<td>5.3.5</td>
<td>Landuse activities can adversely affect ecological, amenity and intrinsic values associated with Otago’s significant indigenous vegetation and significant habitat of indigenous fauna.</td>
<td>5.4.1 5.5.1</td>
<td>4.3.1 to 4.3.2 4.3.4 to 4.3.5 6.3.2 6.3.5 6.3.7 to 6.3.9 8.3.1 8.3.5 8.3.7 9.3.1 10.3.1 to 10.3.5 11.3.7 12.3.1 13.3.2 13.3.4 to 13.3.6 14.3.1 to 14.3.5 15.3.1</td>
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<tr>
<td>5.3.6</td>
<td>There is a need to maintain and enhance access opportunities to Otago’s natural and physical land features.</td>
<td>5.4.4 5.5.7</td>
<td>4.3.1 to 4.3.2 4.3.4 to 4.3.5 6.3.9 8.3.4 10.3.1 14.3.1 to 14.3.5 15.3.1</td>
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</table>
5.3.7 Access to mineral resources may be compromised through the inappropriate location of other development activities above or in close proximity to the mineral resource.

Minerals are an important resource for the people and communities of Otago in providing for their present and future well being, both through the direct economic benefits derived from the extraction of gold and other minerals, and through the use of substances such as aggregates, shingle and coal for roading, building and fuel uses. However, unlike other activities which may have a range of locations in which they can be undertaken, minerals are fixed, and therefore the extraction of minerals for use and development is also fixed. Mineral resources can only be utilised in the location in which they are found and their future use and development can be compromised by the location of other land developments.
5.4 Objectives

5.4.1 To promote the sustainable management of Otago’s land resources in order:
(a) To maintain and enhance the primary productive capacity and life-supporting capacity of land resources; and
(b) To meet the present and reasonably foreseeable needs of Otago’s people and communities.

5.4.2 To avoid, remedy or mitigate degradation of Otago’s natural and physical resources resulting from activities utilising the land resource.

5.4.3 To protect Otago’s outstanding natural features and landscapes from inappropriate subdivision, use and development.

Explanation and Principal Reasons for Adopting Policies See Also Other Objectives

In order to meet the present and reasonably foreseeable needs of Otago’s communities, sustained regional growth and development relies inherently on the sustainable management of land resources. Maintaining and enhancing the primary productive capacity and life-supporting capacity of Otago’s land resource is necessary to ensure that the needs of future generations are able to be met while safeguarding existing primary productive systems.

The adverse effects of land activities need to be avoided, remedied or mitigated to ensure the sustainable management of Otago’s natural and physical resources by maintaining or improving the life-supporting capacity of soils, healthy vegetative cover, soil retention, soil health, productivity and moisture holding capacity, and by avoiding the compaction of soils.

The subdivision of land and its use and development can adversely impact on Otago’s outstanding natural features and landscapes. The Resource Management Act requires that, in achieving the purpose of the Act, natural features and landscapes be protected from inappropriate subdivision, use and development. It is important to protect those landscapes and natural features that are outstanding or significant because of their values including their...
5.4.4 To ensure that public access opportunities exist in respect of activities utilising Otago’s natural and physical land features.

The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers is identified under Section 6 of the Resource Management Act as a matter of national importance that must be recognised and provided for. The provision of such access opportunities generally occurs across land and is therefore important in respect of the integrated management of the land resource. In addition, Otago’s natural and physical resources provide a range of use opportunities and it is important that public access to those resources exists, subject to appropriate considerations such as ecological and cultural sensitivity, public health and safety, and the agreement of landholders where access crosses private or Crown leasehold land, being met. Public access to Otago’s natural and physical land features is a significant resource management issue of the Otago region.

5.4.5 To promote the sustainable management of Otago’s mineral resources in order to meet the present and reasonably foreseeable needs of Otago’s communities.

Mineral resources are fixed in their location and therefore can only be used, developed or protected where they are found. Because of this, other development activities establishing over or in close proximity to minerals can adversely impact upon the future use or development of that mineral resource. Taking into account the present and future availability of mineral resources is an important factor in enabling the people and communities of Otago to provide for their well being, and in providing for the efficient use and development of the mineral resource.
5.5 Policies

5.5.1 To recognise and provide for the relationship Kai Tahu have with Otago’s land resource through:

(a) Establishing processes that allow the existence of heritage sites, waahi tapu and waahi taoka to be taken into account when considering the subdivision, use and development of Otago’s land resources; and

(b) Protecting, where practicable, archaeological sites from disturbance; and

(c) Notifying the appropriate runanga of the disturbance of any archaeological site and avoiding, remedying, or mitigating any effect of further disturbance until consultation with the kaitiaki runanga has occurred.

Explanation and Principal Reasons for Adopting

Recognition of tino rangatiratanga incorporates the unique cultural and spiritual affinity iwi and runanga have with their lands and resources. This needs to be taken into account in the management and control of resources to reflect and preserve that relationship. The policy helps achieve recognition of the relationship of iwi and runanga with outstanding natural features landscapes and heritage values. Taoka are a source of personal, collective, emotional and spiritual strength. The Waitangi Tribunal has given broad and flexible descriptions to the term “taoka or taonga”. Local authorities ought not to adopt more restrictive definitions when determining the range of waahi taoka that customary rangatiratanga applies to and how to accommodate iwi and hapu needs.

The development of appropriate ways to protect cultural values may be different for each site. Close consultation with runanga and iwi will be necessary to determine appropriate methods of protection. Some sites may hold varying degrees of importance to iwi or runanga.

Where it is known or suspected that an archaeological site exists, the site’s destruction, damage or modification is illegal pursuant to Section 10 of the Historic Places Trust Act 1993. In such circumstances, the establishment of consultation processes between kaitaiki runanga, the Historic Places Trust, appropriate authorities such as Regional and District Councils, landholders and developers will be essential. Consultation with landholders is particularly important where sites are located on private land and where an appropriate response requires the cooperation of the landholder and respect for the landholder’s occupancy and use values.

Consultation processes could address protocols for dealing with site disturbance, such as points of contact and key contact persons, the timeframes for responding to site disturbance and respective...
5.5.2 To promote the retention of the primary productive capacity of Otago’s existing high class soils to meet the reasonably foreseeable needs of future generations and the avoidance of uses that have the effect of removing those soils or their life-supporting capacity and to remedy or mitigate the adverse effects on the high class soils resource where avoidance is not practicable.

High class soils are limited within Otago and should be retained, as far as practicable, for present and future primary productive purposes in order to protect their primary productive capacity and to meet the needs of future generations.

The retention of high class soils is considered to be a significant resource management issue of the region because of their limited nature, their vulnerability to loss and the importance in productive terms for future generations. Safeguarding their life-supporting capacity and their potential for future generations is essential to integrated management of the regions natural and physical resources and the effects of the use, development and
the protection of land containing high class soils are therefore of regional significance.

The purpose of this provision is to ensure that alternatives are fully considered before high class soils are selected for a use that will result in their loss. The policy is intended to enable Otago to enjoy the benefits of development but also to retain the primary productive and life-supporting capacity of the high class soil resource for future generations. For example, uses which have the effect of removing the soil, its primary productive capacity, or life-supporting capacity, should avoid locations on high class soil where there are alternatives that can accommodate the use within reasonable proximity.

It is recognised however, that there may be other objectives and policies within the Regional Policy Statement that may outweigh the importance of retaining the high class soil resource in a particular circumstance. In these situations, the loss of the high class soils may be unavoidable and the remedy or mitigation of adverse effects on the high class soil resource will be necessary.

5.5.3 To maintain and enhance Otago’s land resource through avoiding, remedying or mitigating the adverse effects of activities which have the potential to, among other adverse effects:
(a) Reduce the soil’s life-supporting capacity
(b) Reduce healthy vegetative cover
(c) Cause soil loss
(d) Contaminate soils
(e) Reduce soil productivity
(f) Compact soils
(g) Reduce soil moisture holding capacity.

The concept of sustainable landuse requires adopting a long-term perspective which allows for today’s needs while providing for those of the future. While Otago has many abundant land resources, today’s resource use must be managed to ensure future generations are not disadvantaged by present day development.

Understanding of resource management issues is the subject of constant change, however the objective should be to achieve improvement.

Maintaining the capacity of the soil to support life requires that soil degradation be minimised. Good soils are the base for maximising the productive potential from an area. Healthy ground cover helps
<table>
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<th>Methods</th>
<th>See Also Other Policies</th>
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</thead>
<tbody>
<tr>
<td>5.5.4 To promote the diversification and use of Otago’s land resource to achieve sustainable landuse and management systems for future generations.</td>
<td>While the existing primary productive use of Otago’s land resource is an important component of Otago’s economy, promoting and encouraging a diversification of use will assist in the development of sustainable systems to ensure that the needs of future generations are met.</td>
<td>5.6.6, 5.6.7, 5.6.8, 5.6.9, 5.6.10, 5.6.12, 5.6.13</td>
<td>10.5.2 to 10.5.3, 14.5.1 to 14.5.8</td>
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<tr>
<td>5.5.5 To minimise the adverse effects of landuse activities on the quality and quantity of Otago’s water resource through promoting and encouraging the: (a) Creation, retention and where practicable enhancement of riparian margins; and (b) Maintaining and where practicable enhancing, vegetation cover, upland bogs and wetlands to safeguard land and water values; and (c) Avoiding, remedying or mitigating the degradation of groundwater and surface water resources caused by the introduction of contaminants in the form of chemicals, nutrients and sediments resulting from landuse activities.</td>
<td>Landuse activities can adversely impact on adjacent water bodies through the runoff of chemicals, nutrients and sediment. The processes that give rise to such effects can be complex. Riparian margins are able to reduce the inflow of these materials into water bodies and help safeguard them from any adverse effects. In the same way vegetation cover can also assist in reducing the inflow of materials. The water quality and river stability objective of well vegetated riparian margins can be achieved without compromising other community objectives, such as flood control and habitat values, through the integration of river management objectives. Riparian margins may also harbour unwanted pests and weeds that may impact further downstream and onto adjoining land.</td>
<td>5.6.3, 5.6.4, 5.6.6, 5.6.7, 5.6.8, 5.6.9, 5.6.10, 5.6.14, 5.6.23</td>
<td>6.5.1 to 6.5.9, 6.5.11, 8.5.5 to 8.5.6, 9.5.1, 9.5.4, 10.5.1 to 10.5.2, 11.5.2, 12.5.2, 13.5.1 to 13.5.8, 13.5.10, 14.5.1 to 14.5.2, 15.5.1 to 15.5.2</td>
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Streamflow characteristics are affected by the surrounding vegetation cover. The cumulative effect of removing vegetation cover, upland bogs and wetlands in catchments, is to reduce water retention and prolong periods of low flows during dry periods. Sustaining the vegetative condition may benefit downstream productive systems that require scarce irrigation water, as well as benefiting aquatic habitats throughout the catchment. It is vital that land management promotes the maintenance and where practicable enhancement of upland bogs, wetlands and vegetation cover that achieve desired water quality and quantity characteristics. This is particularly important in water harvesting catchments such as Deep Stream, a major source of Dunedin’s supply of domestic water.

### Policies

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</tr>
</tbody>
</table>

### 5.5.6 To recognise and provide for the protection of Otago’s outstanding natural features and landscapes which:

- (a) Are unique to or characteristic of the region; or
- (b) Are representative of a particular landform or land cover occurring in the Otago region or of the collective characteristics which give Otago its particular character; or
- (c) Represent areas of cultural or historic significance in Otago; or
- (d) Contain visually or scientifically significant geological features; or
- (e) Have characteristics of cultural, historical and spiritual value that are regionally significant for Tangata Whenua and have been identified in accordance with Tikanga Maori.

Otago’s natural heritage is a finite resource that must be managed in a sustainable way for the benefit of future generations. Its protection from inappropriate subdivision, use and development is a matter of national importance that must be recognised and provided for under Section 6 of the Act. Subdivision of land and its use and development can adversely impact on Otago’s natural features and landscapes which form part of the regions natural and cultural heritage. It is important that natural features and landscapes that are outstanding be protected through regional policy and regional and district plan provisions.

The recognition and identification of outstanding natural features and landscapes should be based on objective criteria and undertaken in consultation with the community or have outstanding or significant values that are substantially recognised by the Otago community.

Features and landscapes that give the Otago region its distinctive character and particular identity include its expansive tussock grasslands and semi arid lowland tor country, the south-east Otago bush remnants and scroll plain wetlands, glacial lakes and block
5.5.7 To promote the provision of public access opportunities to natural and physical land features throughout the Otago region except where restriction is necessary:

(i) To protect areas of significant indigenous vegetation and/or significant habitats of indigenous fauna; or

(ii) To protect Maori cultural values; or

(iii) To protect public health or safety; or

(iv) To ensure a level of security consistent with the purpose of a resource consent or in circumstances where safety and security concerns require exclusive occupation; or

(v) In other exceptional circumstances sufficient to justify the restriction notwithstanding the importance of maintaining that access.

Personal and community well being, health and safety can be dependent on access to natural and physical land resources, as well as to the coast and water bodies. This will require consideration of public access needs in the development of policies, plans and in the consideration of resource consent applications, and the setting aside of access strips to natural and physical land features where it is necessary to do so in order to maintain and enhance public access. In some cases however, it may be necessary to restrict public access in order to protect a resource’s natural or associated cultural values, to protect public health or safety or to ensure a level of security consistent with the purpose of a resource consent. Consultation with and the agreement of the landowner will be required where access across private land is sought.

The maintenance and enhancement of public access to Otago’s natural and physical land features is a significant resource management issue of the Otago region.

5.6.18 6.5.9 to 6.5.10
5.6.22 8.5.1 to 8.5.3
9.5.5 to 9.5.6
14.5.1 to 14.5.8
15.5.1 to 15.5.2
5.5.8 To recognise known mineral deposits and to consider the potential for access to those mineral resources to be compromised or removed by other alternative land development.

Minerals are a finite natural resource that are important to the present and future economic and social well being of Otago’s people and communities. It is important that known mineral deposits are recognised and that resource management in Otago provides for their sustainable management. This requires consideration of the potential for access to mineral resources to be compromised or removed as a result of alternative land development.
5.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

5.6.1 Take into account Kai Tahu cultural values in the management of Otago’s land and mineral resources through:
   (a) Using and recognising iwi resource management plans, where available, as a basis for consultation; and
   (b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s land and mineral resources.

5.6.2 Develop mechanisms, consistent with Kai Tahu Koiwi Tangata policy to notify appropriate elders or runanga on the discovery of human remains.

The methods to be used by the Otago Regional Council include the following:

5.6.3 Develop policies and other means, including rules where appropriate, within the Regional Plan: Land to manage the adverse effects of the use, development or protection of the beds and banks of Otago’s water bodies.

5.6.4 Develop policies and other means necessary, including rules where appropriate, within the Regional Plan: Land to avoid, remedy or mitigate the adverse effects of landuse activities that could degrade Otago’s natural and physical resources, including the mineral resource.

5.6.5 Consider inclusion of conditions on resource consents and consider declining such consents as necessary to ensure sustainability of the land resource.

5.6.6 Promote and use education programmes to improve agency and community awareness and understanding of land issues and sustainable management in Otago.

5.6.7 Provide information on the adverse and beneficial effects associated with land activities.

5.6.8 Recognise and encourage the role of community groups that promote sustainable management of land and associated resources.

5.6.9 Consult with Otago’s communities, including affected landholders, regarding the sustainable management of Otago’s land and mineral resources.

5.6.10 Promote codes of practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups to avoid, remedy or mitigate adverse effects of activities on the land resource.

5.6.11 Prepare maps of high class soils in the region that clearly show their location and extent.

5.6.12 Promote and encourage interagency liaison and cooperation and the development of protocols to ensure integrated and coordinated management of Otago’s land and mineral resources.

5.6.13 Initiate, support and encourage research and monitoring programmes, including self monitoring, to
provide information on issues and solutions relating to Otago’s land and mineral resources.

5.6.14 Coordinate remedial works to mitigate the degradation resulting from landuse activities.

5.6.15 Liaise with city and district councils to enable landuse, development and protection consistent with sustainable management of land resources.

5.6.16 Develop guidelines to promote the use of less productive soils instead of high class soils for urban and industrial development.

5.6.17 Prepare, in conjunction with relevant agencies and in consultation with the community and affected landowners, an inventory of outstanding natural features and landscapes that are regionally significant.

5.6.18 Facilitate mechanisms to maintain and where practicable enhance public access to Otago’s natural and physical land resources.

Methods which may be used by Otago’s territorial local authorities include the following:

5.6.19 Require that all other practicable options be considered before the high class soils within a district are used for any purpose that has the effect of removing the soil, its primary productive capacity or its life-supporting capacity.

5.6.20 Develop policies and other means, including rules where appropriate, to ensure that Otago’s outstanding natural features and landscapes are protected from inappropriate subdivision, use and development.

5.6.21 Consider including provisions and conditions in district plans and on resource consents to avoid, remedy or mitigate soil degradation resulting from the subdivision, use, development or protection of land.

5.6.22 Consider, develop and implement mechanisms to maintain and where practicable enhance public access to Otago’s natural and physical land features.

5.6.23 Consider including provisions or conditions in district plans and on resource consents which seek to avoid, remedy or mitigate the adverse effects of land use activities on water resources.

5.6.24 Develop policies, rules and other means as necessary to manage landuse development that could compromise access to known mineral resources.

Explanation and Principal Reasons for Adopting
A range of agencies play a role in managing Otago’s land resources. There are overlaps between the functions of regional councils and territorial local authorities in terms of the control of the use of land and effective communication and liaison between agencies is essential to achieve the desired objectives. Agencies responsible for resource management have a responsibility to provide guidelines and establish protocols in deciding on resource issues. The methods of implementation outlined above are intended to provide a means whereby the Otago community is included in the decision-making process.
5.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

5.7.1 Otago’s communities are able to utilise the region’s land resources in order to provide for their well being, health and safety, and also for the reasonably foreseeable needs of future generations.

5.7.2 The management of Otago’s land resources takes into account the values of manawhenua.

5.7.3 Otago’s existing high class soils are retained, as far as practicable, for primary productive purposes.

5.7.4 The overall state of Otago’s land resource is maintained or enhanced.

5.7.5 Riparian margins are maintained and where practicable enhanced, along Otago’s water bodies.

5.7.6 Water quality and quantity is maintained and where practicable enhanced as a result of the use, development or protection of land.

5.7.7 Otago’s outstanding natural features and landscapes are recognised and protected from inappropriate subdivision, use and development.

5.7.8 The ecological health of Otago’s land resource is maintained and enhanced.

5.7.9 Public access opportunities to Otago’s natural and physical land features is maintained and enhanced.

5.7.10 Otago’s communities are able to have input into the management of Otago’s land resources.

5.7.11 Otago’s communities are able to utilise the region’s mineral resources for their present and reasonably foreseeable needs.
6 Water
6.1 Introduction

This chapter of the Regional Policy Statement considers only Otago’s fresh water resources, including groundwater. Coastal water issues are considered in the coastal chapter.

Water is an integral part of Otago’s natural environment with part of its distinctive character being derived from the scenic and aesthetic impressions of its lakes and water bodies. Much of Otago’s tourism and recreation is based on water activities and the landscape values inherent in the region’s water bodies.

Approximately 23% of New Zealand’s lake surface area occurs in Otago and the region produces 17% of New Zealand’s total hydro-electric generation. 75% of the total flow of the Clutha River at Balclutha results from the catchments of Lakes Hawea, Wanaka and Wakatipu. The Clutha River drains much of the Otago region and has the largest annual discharge of any river in New Zealand. However, despite the large total water volumes present in the region’s water bodies, many areas of Otago are short of water. Irrigation is an important feature of many areas of Otago and is, in many cases, critical to the continued well being of the people and communities who rely on the primary production it supports.

The region also contains large wetland systems of national significance for wildlife and freshwater fish including the Upper Taieri and Lakes Waipori and Waihola. Lake Tuakitoto and the Pomahaka River have regionally significant values which were recognised by Local Water Conservation Notices that provide for the protection of those values. These areas are now subject to controls under the Otago Regional Council’s Regional Plan which restrict activities on these water bodies in order to protect those values. A Draft Water Conservation Order for the Kawarau River and Tributaries requires that certain values in the area are to be sustained and protected.
6.2 Roles of Different Agencies

Several agencies have responsibility for managing Otago’s water resources.

6.2.1 Central Government

The Minister for the Environment has an overview and monitoring role with some areas of direct resource management responsibility including:
(a) Preparing national policy statements to guide the management of water resources.
(b) Monitoring the effect and implementation of water conservation orders.
(c) Requiring that proposals of national significance be decided at a national level.
(d) Setting national environmental standards for matters including contaminants and water quality.

The Department of Conservation is responsible for the administration of land in Otago held under the Conservation Act 1987, the National Parks Act 1981 and certain reserves under the Reserves Act 1977. These lands include marginal strips and some water bodies entirely within the lands so administered. The Department is the agency responsible for the funds available for pest and weed control on un-allocated Crown lake and river beds. The Department is also responsible for preserving indigenous freshwater fisheries and protecting freshwater fish habitats. The Lake Wanaka Preservation Act 1973 established the Guardians of Lake Wanaka who report and make recommendations to the Minister of Conservation on the preservation of normal water levels and shoreline of Lake Wanaka and the maintenance and enhancement of water quality.

6.2.2 Otago Regional Council

The Otago Fish and Game Council reports to the Minister of Conservation and is the statutory management agency for sports fish (trout and salmon) and game birds (water fowl and upland game) within the Otago Region.

The Otago Regional Council is concerned with the environmental aspects of resource use. Under the Resource Management Act, the Council has primary responsibility for the management of water resources and pollution control. The Regional Council is required to establish and implement policies to achieve the integrated management of the natural and physical resources of the region. The Regional Council is also responsible for the control of land for the purpose of the maintenance and enhancement of the quality and quantity of water in water bodies. The Regional Council will also control the taking, using, damming and diversion of water as well as discharging contaminants or water into water plus the control of any activities in relation to the beds of lakes and water bodies. The Resource Management Act provides for the prohibition of taking and discharging into water unless such activities are expressly authorised. To make such activities authorised requires either a rule in a regional plan to this effect or the obtaining of a resource consent. Specific activities that will be permitted, discretionary, controlled, non complying or prohibited will be specified in the Regional Plan: Water.
6.2.3 Territorial Local Authorities

Many of the functions of territorial local authorities have implications for water management. Territorial authorities are responsible for the control and integrated management of the effects of the use, development or protection of land and associated natural and physical resources within their city or district. They are also responsible for controlling any actual or potential effects of activities in relation to the surface of water in rivers and lakes, and for control of land subdivision.
### 6.3 Issues

<table>
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<th>Policies</th>
<th>See Also Other Issues</th>
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<tbody>
<tr>
<td><strong>6.3.1 Consumptive uses of Otago’s water resources require sufficient quantities of quality water.</strong></td>
<td>6.4.1</td>
<td>6.5.1</td>
<td>4.3.3, 4.3.5, 5.3.3, 9.3.1, 14.3.1 to 14.3.6, 15.3.1</td>
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<td>6.5.3</td>
<td>6.5.4, 6.5.5, 6.5.11</td>
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<td><strong>6.3.2 Insufficient quantities of surface water and groundwater are available for local requirements in some areas of Otago.</strong></td>
<td>6.4.1</td>
<td>6.5.1</td>
<td>4.3.3 to 4.3.5, 5.3.3, 9.3.1, 10.3.1, 10.3.4, 12.3.1 to 12.3.2, 14.3.1 to 14.3.6, 15.3.1</td>
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Water is the life blood on which Otago’s prosperity is largely based. Irrigation, particularly in the drier areas of Otago, is an important use of Otago’s water resources. Commercial and industrial users also require access to water. Water is also required for a variety of reasons by Otago’s communities. Of most importance is the need to have access to suitable quantities of quality water in order to meet the basic needs of human life. Otago’s communities typically receive their water via reticulation schemes which extract water from various Otago water sources and deliver it to each household. These, as well as individual abstractions of water, need to be able to meet the present and reasonably foreseeable needs of those communities.

Adequate supplies of high quality water are vital for regional development in Otago. Dairy units in Otago, the Macraes mining venture, urban areas, irrigation for summer pastoral and horticultural production in dry areas of Otago and frost fighting in the fruitgrowing areas in the Clutha valley all rely on a good supply of quality water. Such uses, as well as industrial and domestic requirements, place significant consumptive demands on Otago’s water resources. With the wide range of demands, as well as seasonal fluctuations in supply and demand, pressure on maintaining water quality and quantity in Otago becomes more significant where water bodies are used for waste disposal. Most inland communities of Otago, which have reticulated sewage schemes, discharge their residual effluent to fresh water bodies. The level of treatment differs from case to case. Other forms of waste are discharged, and non point source pollution of water can also add to difficulties in maintaining suitable water quality. Managing opportunities for development of Otago’s water resources must ensure that future opportunities are not diminished by activities that pollute or deplete those resources.
<table>
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</tr>
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</table>
| There are conflicts in the allocation of water because of competing uses and values. These competing demands on the resource cannot, at times, be satisfied. Water is of importance for: | - Drinking water and other domestic uses  
- Intrinsic, cultural and spiritual values  
- Wildlife values  
- Aesthetic and scenic values  
- Irrigation and other agricultural uses  
- Industrial uses  
- Recreational values including angling  
- A medium for the disposal of wastes. | | | | |
| The Resource Management Act provides that mining privileges for water resources (now called deemed permits) will expire in 2021. Deemed permits have become a significant element of Otago’s water management regime and confer significant benefits upon the region and its communities. They can constrain the opportunities for the setting of minimum flows to provide for instream uses and values and can also constrain the re-allocation of water for other consumptive users off-site. | | | | | |
| 6.3.3 Inefficient uses of water and wastage of water can occur. | Irrigation requires large quantities of water, and significant wastage can occur through inefficient practices. Inefficient water use often occurs when people are unaware of wasteful practices. Industrial and domestic urban water use may also contain many inefficiencies, including losses from reticulation services through to inefficiencies by the consumer. It is also of concern that where water resources are in short supply they be used in the most beneficial way for the region.  
Efforts to reduce wastage of water need to be encouraged and built upon. | 6.4.1 | 6.4.3 | 6.5.1 | 4.3.2 to 4.3.5  
5.3.3  
10.3.1  
12.3.1 to 12.3.2  
14.3.1 to 14.3.6  
15.3.1 |
6.3.4 There is a need to maintain Otago’s generally high standard of water quality and to improve degraded areas.

Otago has some of New Zealand’s highest quality water in its natural state. This quality is an important element of the overall character of the region and supports a diversity of ecosystems and uses. The health of people and communities can be adversely affected by contaminated water. Tourism and recreation are becoming significant aspects of Otago’s economy and are dependent on water of high quality. Freshwater bodies which provide sources of food and primary productive uses of the water resource also rely on the water being of a high standard. Areas of poor water quality however, require remedial action to bring about improvement to an acceptable standard.

6.3.5 Otago’s existing surface water quality is compromised by the adverse effects of:

(a) Contamination from point source and non point source discharges;
(b) Landuse activities;
(c) Activities within the beds and on the banks of water bodies; and
(d) Reduced flows through abstractions or diversions.

Water quality can be compromised by point source discharges of industrial, agricultural, and community wastes. The direct discharge of contaminants to surface water, for example industrial waste, sewage effluent and urban stormwater can seriously compromise water quality. Recreational pressures can also impact on water quality. Water quality also can be a useful indicator of the state of the land. Some land management activities such as vegetation clearance, working soil on steep slopes, grazing riparian margins and applying fertiliser have mobilised sediments and nutrients into Otago’s water bodies and have degraded aquatic habitats. Stormwater runoff from urban settlement often contains undesirable contaminants.

Instream activities, such as excavation and gravel removal, can also result in degradation of the water resource through increased sediment loading and the smothering of instream habitats. Discharges from domestic, commercial and industrial land uses, such as sewage and industrial effluent, can result in contamination of water resources. Such degradation of water bodies reduces opportunities for utilising the water resource for recreation, food gathering, tourism, production or consumption uses, and for the
6.3.6 Otago’s groundwater resources may be adversely affected by landuse activities and contamination.

Groundwater resources have varying rates of recharge and may be affected by drainage of wetland areas, the diversion of water bodies and the removal of vegetation in catchment areas. The quality of groundwater varies depending on geology and land management activities occurring in the vicinity of the supply. Extractions of groundwater must not exceed the rate of recharge. Contamination through discharges from landfills, chemical spraying, effluent disposal and other activities is difficult to reverse in areas where groundwater flows are slow and quantities are small.

6.3.7 Ecological, amenity and intrinsic values associated with Otago’s wetlands are compromised by:
(a) Reductions in instream flows and surface water availability through damming, diversions, drainage and abstractions;
(b) Degraded water quality;
(c) Adverse effects of activities in and around wetlands.

The ecological importance of wetlands has been increasingly recognised over recent years and the preservation of their natural character, and protection from inappropriate subdivision, use and development, is identified as a matter of national importance in Section 6(a) of the Act. The major ecological values associated with wetlands are hydrological and habitat values, although wetlands may also have significant landscape values, such as the wetlands of the Upper Taieri scroll plain. The hydrological values of wetlands include water storage capacity, which can buffer low flows in water short areas, and contribution to water quality through nutrient absorption; for example, many land based sewage disposal systems use artificial wetland systems. Wetlands also provide significant, remnant habitat for indigenous flora and fauna, particularly fish and bird species, and also provide habitat for a wide range of non indigenous animal species, such as ducks and swans. Wetlands have been identified as being particularly...
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<td>Use and development pressures in and around Otago’s lakes, rivers and other freshwater bodies may compromise:</td>
<td>The use and enjoyment of Otago’s water resources is important to Otago’s communities as these areas often have high visual appeal, are important habitats for both indigenous and introduced wildlife and offer a wide range of recreational opportunities. Many of Otago’s fresh water bodies still retain their natural character and form an integral part of the Otago landscape, eg parts of the Clutha and Taieri rivers. The use of the water resource and adjacent land areas, can result in adverse effects on the ecological, amenity, intrinsic and habitat values associated with those water resources. The quality of the water is important in maintaining those values and the quantity of instream flows and the availability of surface water are also important factors to consider when making use of the water resource. The adverse effects of activities need to be avoided where necessary and otherwise remedied or mitigated so that the natural character of water bodies may be preserved and outstanding landscape features and significant habitat protected. It is noted that natural instream river flows during times of water shortage may be enhanced by the release of water storage from dams.</td>
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<td>Public access to and along the margins of some of Otago’s water bodies is limited and development, landuses and other activities have the potential to further reduce public access to and along these margins.</td>
<td>The provision of public access to and along the margins of Otago’s water bodies is important to many of Otago’s citizens. Development and landuses alongside those water bodies have the potential to reduce that access. Section 6 of the Resource Management Act requires the maintenance and enhancement of public access as a matter of national importance. The provisions of the Act in respect of access cannot impose public access over privately owned land and</td>
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<td>6.3.10 Flooding and riverbank erosion threaten land resources adjacent to some of Otago’s water bodies.</td>
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<td>Otago has always faced the threat of flooding from its major water bodies. The protection of Otago’s land resource from flooding has been an ongoing and continuing activity for over a century. Major urban areas, such as Balclutha and areas of primary production, such as the lower Taieri and Clutha plains, have benefited from these works. Bank instability can also adversely affect land areas adjacent to Otago’s water bodies.</td>
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<td>permission still needs to be sought from landholders, including Crown pastoral lessees. However, the Act does provide for the creation of esplanade strips, esplanade reserves and for access strips at time of subdivision in order to maintain and enhance public access to and along lakes and rivers. There will also be times when access to water bodies may be restricted for reasons including the need to protect sensitive areas, habitats and sites of cultural importance from adverse effects.</td>
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6.4 Objectives

6.4.1 To allocate Otago’s water resources in a sustainable manner which meets the present and reasonably foreseeable needs of Otago’s people and communities.

Explanation and Principal Reasons for Adopting Policies See Also Other Objectives

To be able to meet the economic, social and cultural well being of Otago’s people and communities, the present and reasonably foreseeable needs of those people and communities for suitable quantities of quality water will have to be met. The demands placed on available water resources are increasing and must be managed to ensure that sufficient water of high quality is available for the future needs of the Otago region. In some cases, where water is in short supply, this will require careful allocation decisions.

6.5.1 4.4.2 to 4.4.5 6.5.2 5.4.1 6.5.3 9.4.1 6.5.4 12.4.1 to 12.4.3 6.5.11 13.4.1 9.4.1 6.5.11 14.4.1 to 14.4.2 15.4.1

6.4.2 To maintain and enhance the quality of Otago’s water resources in order to meet the present and reasonably foreseeable needs of Otago’s communities.

Otago’s water resources are generally of high quality. The use, protection and development of Otago’s water resources requires careful consideration of the different values and expectations of water users while recognising that water management issues interrelate with other resource issues such as landuse activities and discharges of wastes and stormwater. Related issues must be considered in an integrated manner to ensure that water quality is not compromised.

6.5.1 4.4.2 to 4.4.5 6.5.5 5.4.2 6.5.7 8.4.2 6.5.11 8.4.4 9.4.1 6.5.11 9.4.3 10.4.1 to 10.4.2 11.4.4 12.4.1 to 12.4.3 13.4.1 13.4.4 14.4.1 to 14.4.2 15.4.1

6.4.3 To safeguard the life-supporting capacity of Otago’s water resources through protecting the quantity and quality of those water resources.

The life-supporting capacity of a water resource refers to its ability to support life. Life-supporting capacity can be adversely affected by chemical, biological, physical and thermal contamination. The safeguarding of this capacity requires that the water resource be protected from the adverse effects of activities which could result in contamination or depletion to the extent that its ability to support life is threatened.

6.5.1 4.4.2 to 4.4.5 6.5.2 5.4.1 to 5.4.2 6.5.3 5.4.5 6.5.4 8.4.2 6.5.5 8.4.4 6.5.6 9.4.1 6.5.7 9.4.3 10.4.1 to 10.4.3 6.5.7 11.4.4 6.5.8 12.4.1 to 12.4.3 6.5.9 13.4.1 6.5.10 13.4.4 6.5.11 14.4.1 to 14.4.2 15.4.1
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<td><strong>6.4.4</strong> To maintain and enhance the ecological, intrinsic, amenity and cultural values of Otago’s water resources.</td>
<td>The ecological, intrinsic, amenity and cultural values of Otago’s water resources are important elements of those water resources which must be recognised in the management of those resources. They provide much of the character of the water resource. The Otago community and visitors to the region readily identify with Otago’s water areas as integral elements of Otago’s landscapes. Tourism relies on the inherent quality of the water resources in Otago. These resources must be protected or enhanced for the benefit of the region’s economy as well as for the aesthetic advantages they provide.</td>
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<td><strong>6.4.5</strong> To avoid, remedy or mitigate degradation of water resources resulting from the use, development or protection of the beds and banks of Otago’s water bodies and of adjacent land areas.</td>
<td>The use, development or protection of the beds and banks of Otago’s water bodies and adjacent land areas can result in adverse effects which can degrade the water resource. Reducing these adverse effects as far as practicable will assist in maintaining the overall quality of Otago waters.</td>
<td><strong>6.5.7</strong> 4.4.2 to 4.4.5 5.4.1 to 5.4.3 5.4.5 9.4.1 9.4.3 10.4.1 10.4.3 11.4.4 13.4.1 13.4.4 14.4.1 to 14.4.2 15.4.1</td>
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<td><strong>6.4.6</strong> To mitigate the threat of flooding and riverbank erosion resulting from the use, development or protection of Otago’s water bodies and lake beds.</td>
<td>Many activities undertaken within the beds and banks of water bodies and on land areas adjacent to water areas can help in mitigating the adverse effects of flooding and riverbank erosion. The clearing of dense stands of trees in water bodies can reduce the risk of flood waters banking up behind them. At the same time, trees are useful means of providing improved habitat and for reducing riverbank erosion by binding and holding the bank soil in place. Different approaches will be required in different areas.</td>
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<td>6.4.7 To maintain and enhance public access to and along the margins of Otago’s water bodies.</td>
<td>Otago’s water bodies provide a range of use opportunities, including recreation, tourism, scientific and educational opportunities. It is important that public access to water bodies exists and is enhanced wherever possible, subject to appropriate considerations such as ecological and cultural sensitivity, public health and safety, and the agreement of landholders where access crosses private or Crown leasehold land.</td>
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<td>6.4.8 To protect areas of natural character, outstanding natural features and landscapes and the associated values of Otago’s wetlands, lakes, rivers and their margins.</td>
<td>Otago’s lakes, rivers and wetlands are made up of a variety of different landscapes and natural features which make them unique. People appreciate the natural beauty and character of these water bodies and wish to retain that character. The preservation and protection of the natural character and the outstanding natural features and landscapes of lakes, rivers, wetlands and their margins is a matter of national importance under Section 6 of the Resource Management Act and important in achieving integrated management of the region’s water resources.</td>
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6.5 Policies

6.5.1 To recognise and provide for the relationship Kai Tahu have with the water resource in Otago through:

(a) Working toward eliminating human waste and other pollutants from entering all water bodies; and
(b) Consulting with Kai Tahu over any application that would result in the mixing of waters from different water bodies and the setting of water flows and levels.

6.5.2 To allocate water in areas of Otago where there is or potentially will be insufficient water supplies through:

(a) Considering the need to protect instream amenity and habitat values; and
(b) Considering the needs of primary and secondary industry; and
(c) Considering Kai Tahu cultural and spiritual values; and
(d) Considering the extent to which adverse effects can be avoided, remedied or mitigated.

Explanation and Principal Reasons for Adopting

These policies recognise the essential relationship iwi and runanga have with the water resources of Otago. All facets of water resource management are integral to the relationship iwi have with the water resource of Otago. The health of the water bodies reflects directly the health of the surrounding catchment. The degradation of the water resource is a great source of concern to Kai Tahu. The many classifications of water known to Kai Tahu require consideration from planners and resource managers when policy and resource consents are under consideration.

Water is required for many uses within Otago and within some areas the supply of water is limited. In these areas it will be necessary to allocate water on the basis of considering the importance of competing needs. The Resource Management Act already requires that the domestic and stock drinking water requirements of communities be met where this does not have an adverse effect on the environment. The needs of primary and secondary industry are of importance as are instream amenity and habitat values. They are important to the continued ecological well being of any water resource and to the social, economic and cultural needs of those communities that use those resources for recreational or other purposes. These competing needs will need to be considered together, while also considering the cultural and spiritual values that Kai Tahu place on that water resource.

Methods

See Also Other Policies

6.6.1 5.5.1
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6.6.4 7.5.1
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10.5.1 to 10.5.2
12.5.2
14.5.1 to 14.5.8
15.5.1 to 15.5.2

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6.5.3 To promote efficient consumptive water use through:
(a) Promoting water use practices which minimise losses of water before, during and after application; and
(b) Promoting water use practices which require less water; and
(c) Promoting incentives for water users to use less water.

Traditional management techniques and methods of irrigation or reticulation, including urban and rural domestic uses, may not provide the most efficient method of water use. Casual attitudes towards water conservation may not encourage efficient use, further reducing the amount of available water among competing users.

Attitudes towards water wastage will eventually impact on the ability of Otago’s water supplies to meet the needs of future generations.

6.5.4 To investigate and, where appropriate, set minimum flow levels and flow regimes for Otago water bodies and maximum and minimum lake levels to protect any of the following:
(a) The needs of Otago’s communities;
(b) Kai Tahu cultural and spiritual values;
(c) Lake margin stability;
(d) The natural character of the water body;
(e) Habitats of indigenous fauna and flora;
(f) Amenity values;
(g) Intrinsic values of ecosystems;
(h) Salmon or trout habitat;
(i) Outstanding natural features or landscapes.

In some water short areas, it may be necessary to establish minimum flow levels and flow regimes for rivers and water bodies to protect significant values associated with them. Minimum and maximum lake levels may similarly need to be set. The setting of such levels and regimes will depend on the particular water resource and the values associated with it.

In investigating the need or otherwise to set and apply minimum flows through the Regional Plan: Water, recognition will be given to the effects of Mining Privileges for water resources (now called deemed permits) and the options available for addressing any adverse effects. Because Mining Privileges will expire in 2021, provision will need to be made to manage this change through the implementation and review of the Regional Plan: Water.

6.5.5 To promote a reduction in the adverse effects of contaminant discharges into Otago’s water bodies through:

Otago’s existing water quality is generally high but there are areas, such as the lower reaches of some rivers and in water bodies such as Lake Hayes, where degradation has occurred. Maintaining high

Regional Policy Statement for Otago
(a) Adopting the existing water quality of Otago’s water bodies as a minimum acceptable standard; and

(b) Investigating and where appropriate, enhancing water quality so that as a minimum standard it is suitable for contact recreation and aquatic life where:

(i) There is a high public interest in, or use of the water; or
(ii) There is a particular Kai Tahu interest in the water; or
(iii) There is a particular value to be maintained or enhanced; or
(iv) There is a direct discharge containing human sewage or wastes from commercial or industrial activities; and

(c) Requiring that all discharges into Otago’s water bodies maintain the standard for the receiving waters after reasonable mixing; and

(d) Promoting discharges to land where practicable and where there are no significant adverse effects on groundwater or surface water resources, or soil; and

(e) Preparing contingency responses for accidental pollution spills; and

(f) Investigating and addressing the effects of diffuse source discharges on water quality; while considering financial and technical constraints.

water quality is important for human consumption, community health, and aquatic ecosystems. In order to maintain water quality that is of an acceptable standard and to enhance it in degraded areas, discharges of contaminants will have to be treated to a level which ensures that the quality of the receiving waters is not degraded after reasonable mixing has occurred. Areas where degraded water quality is of concern will result in conflict between differing users. In such cases, a higher standard may be set to bring about an improvement, over time, in the quality of that water for human consumption, community health and aquatic ecosystems. Priorities for the investigation of water bodies requiring improved water quality include the lower Clutha and lower Taieri catchments, the Tokomairiro and Waikouaiti Rivers and urban streams such as the Kaikorai in Dunedin. However, in any case where sufficient concern arises about water quality, investigation should be undertaken to determine whether water quality should be enhanced. All discharges will need to meet the applicable standard for the receiving waters after reasonable mixing. Discharges to land, provided they do not result in adverse effects greater than the same discharge to water, will be promoted wherever practicable.

Accidental spills of contaminants, such as diesel or chemicals, have the potential to cause significant damage to water bodies. The preparation of suitable response strategies is necessary so as to minimise the damage they may cause.

The effects of land uses adjacent to Otago’s water bodies also need to be considered with respect to water quality. Sometimes pollution from diffuse sources resulting from land use practices, septic tanks and urban run off cause as much harm as pipe discharges.

The requirements of Otago’s communities and the financial and technical constraints relating to any particular discharge are relevant matters to be considered in order to meet the social, economic and cultural well being of Otago’s communities.

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6.5.6 To protect Otago’s remaining significant wetlands from the effects of any activity except:
(a) Where such activities can be shown to have no significant adverse effects on:
   (i) Community needs; or
   (ii) Kai Tahu cultural and spiritual values; or
   (iii) The natural hydrological characteristics of the wetland; or
   (iv) The natural character of the water body; or
   (v) Habitats of indigenous fauna; or
   (vi) Amenity values; or
   (vii) Intrinsic values of ecosystems; or
   (viii) Salmon or trout habitat; or
(b) Where alternative habitats of a similar or improved nature are provided in compensation for any loss of habitat.

Water bodies and wetlands contain natural features such as vegetation and fauna habitats and ecosystems which depend on reliable supplies of water for their existence. Extraction of water or land reclamation may adversely impact on ecosystems if such activities are not correctly managed. Until the identification of Otago’s significant wetlands is completed careful consideration will need to be given to determine whether or not a particular activity affecting a wetland would have adverse effects on matters (a) (i) to (viii) of this policy. Where an alternative, compensatory wetland is provided in accordance with the provisions of (b) of this policy, it will automatically become entitled to the same degree of protection as an original wetland under (a).

6.5.7 To maintain and where practicable enhance existing well vegetated riparian margins and, where necessary, to promote the creation of further such margins:
(a) To provide for the preservation of the natural character of wetlands, rivers, lakes and their margins; and
(b) To maintain and enhance water quality; and
(c) To maintain and enhance ecological, amenity, intrinsic and habitat values; while considering the need to reduce threats posed by flooding and erosion.

Well vegetated riparian areas help to minimise the adverse effects associated with runoff from adjacent landuses and add stability to the banks of the water bodies. They also provide important habitats for a variety of Otago’s fauna. At the same time, overgrown riparian areas can result in an increased risk of flooding as a result of water build up behind them. Riparian vegetation may also harbour unwanted pests which can spread to adjacent land. Such areas need to be actively managed to ensure that valuable habitats are maintained and pest problems managed while reducing the risk of flooding.

6.5.8 To allow the extraction of alluvial material from Otago’s rivers provided:
(a) The stability of structures, riverbanks and beds within the river system is not reduced; and

The extraction of alluvial material, such as silt, sand, gravel and boulders, from Otago’s water bodies is an important activity for the construction and residential needs of Otago’s communities. While...
(b) The maintenance and, where practicable, enhancement of instream amenity and habitat values is considered and provided for; and

(c) The adverse effects on water quality are avoided, remedied or mitigated.

6.5.9 To allow for the community’s use, development or protection of the beds and banks of Otago’s water bodies provided:

(a) Any adverse effects on:

(i) Kai Tahu cultural and spiritual values; or

(ii) The natural character of the water body; or

(iii) Habitats of indigenous fauna; or

(iv) Amenity values; or

(v) Intrinsic values of ecosystems; or

(vi) Salmon or trout habitat; or

(vii) Outstanding natural features or landscapes;

are avoided, remedied or mitigated, and that the life-supporting capacity of the water body is maintained and, where practicable, enhanced; while

(b) Considering the maintenance and, where practicable, enhancement of the natural functioning of river systems; and

(c) Considering the need to provide mitigation to lessen the threat posed by flooding and riverbank erosion.

The use, development and protection of the beds and banks of Otago’s water bodies all have potential impacts on the many important values associated with the resource. These values include natural, cultural and intrinsic value. The use and development may include such practices as cultivation, grazing or vegetation disturbance along the beds or banks of water bodies, gravel extraction, mining, channel modification and the building of defences against water. These practices may cause off-site effects such as siltation and erosion, which impact on water quality and aquatic habitat. Steps can be taken to avoid, remedy or mitigate adverse effects, for example, facilitating the passage of fish over instream obstructions. There is also a need to consider adverse impacts arising from the use, development and protection of river beds and banks, upon important physical resources such as transport, energy, communication and water management structures and the need to provide for the mitigation of natural hazards.
Policies

6.5.10 To maintain and enhance public access to and along the margins of Otago’s water bodies through:

(a) Encouraging the retention and setting aside of esplanade strips and reserves and access strips to and along the margins of water bodies which will enhance access; and

(b) Identifying and providing for other opportunities to improve access; except where restriction is necessary:
   (i) To protect areas of significant indigenous vegetation and/or significant habitats of indigenous fauna,
   (ii) To protect Maori cultural values,
   (iii) To protect public health or safety,
   (iv) To ensure a level of security consistent with the purpose of a resource consent; or
   (v) In other exceptional circumstances sufficient to justify the restriction notwithstanding the national importance of maintaining that access.

Explanation and Principal Reasons for Adopting

All agencies with responsibilities under the Resource Management Act 1991 will need to provide for the access needs of Otago’s communities to and along the margins of Otago’s water bodies, which are highly valued for recreation and other purposes. Section 6 of the Resource Management Act requires the maintenance and enhancement of public access as a matter of national importance. It is also considered to be a significant resource management issue of the region because it has aroused widespread concern throughout the region, because it is a matter of resource management significance to Manawhenua, both in terms of maintaining access and of protecting valued areas, and because it is essential, in terms of achieving integrated management that the policy statement give effect to Section 6.

This will require consideration of access needs in the development of policies, plans and any other means and in the consideration of resource consent applications, and the setting aside of esplanade strips, esplanade reserves and access strips to and along the margins of Otago’s water bodies where it is necessary to do so in order to maintain or enhance public access. Access can also be provided for under other legislation, such as the provision of marginal strips under the Conservation Act 1986 and the provision of public road reserves under the Local Government Act 1974. These means should also be considered, and either created or retained as appropriate, in order to maintain and enhance public access. In some cases however, it may be necessary to restrict public access in order to protect the water margins, or the water body itself, and associated cultural values, to protect public health or safety or to ensure a level of security consistent with the purpose of a resource consent. Aside from these reasons, public access should not be restricted unless the circumstances are exceptional and can be justified when measured against the maintenance and enhancement of public access as a matter of national importance.

Methods

See Also Other Policies

6.6.1 5.5.1
6.6.14 5.5.7
6.6.15 8.5.1
6.6.21 8.5.3
6.6.23 9.5.4 to 9.5.6
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<td>6.5.11</td>
<td>To promote the allocation of groundwater within the sustainable yield of the particular water body having regard to its recharge capability and the possibility of sea water intrusion.</td>
<td>Many people rely on groundwater resources for water. Over abstraction can result in loss of supply to other users, and in some locations sea water intrusion. By keeping abstraction within recharge rates these problems can be avoided.</td>
<td>6.6.2 6.6.3 6.6.4 6.6.7 6.6.11 6.6.12 6.6.14 6.6.16 6.6.17 6.6.18 6.6.22 6.6.23 6.6.24 6.6.25 6.6.26</td>
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6.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

6.6.1 Take into account Kai Tahu cultural values in the management of Otago’s water resources through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s water resources.

The methods to be used by the Otago Regional Council include the following:

6.6.2 Develop policies and other means, including rules where appropriate, within the Regional Plan: Water for the management of the region’s water resources.

6.6.3 Develop policies and other means, including rules where appropriate, within the Regional Plan: Water to avoid, remedy or mitigate the adverse effects of the use, development or protection of the beds and banks of Otago’s water bodies.

6.6.4 Consider including conditions on resource consents or consider declining such consents as necessary to maintain and where practicable enhance the quality of Otago’s water resources.

6.6.5 Consider including conditions on resource consents or consider declining such consents as necessary to protect Otago’s significant wetlands.

6.6.6 Investigate and identify the region’s significant wetlands as part of the preparation of the Regional Plan: Water.

6.6.7 Initiate, support and encourage research and monitoring programmes, including self monitoring, to provide information on Otago’s water issues and solutions.

6.6.8 Encourage and, where necessary, require the inclusion of research, management and enhancement programmes for any affected flora or fauna in any major developments utilising Otago’s water resources.

6.6.9 Promote, encourage, and, where necessary and practicable, require the creation of habitats of a similar or improved nature in compensation for any loss of habitat resulting from development utilising Otago’s water resources.

6.6.10 Promote, encourage and, where necessary and practicable, require the creation, retention and enhancement of riparian margins.

6.6.11 Establish systems for the allocation of surface water and groundwater while considering:
(a) The need to protect instream amenity and habitat values; and
(b) The needs of primary and secondary industry.

6.6.12 Establish and implement programmes to monitor water yield, water usage and the quality of water in Otago.
6.6.13 Where necessary, actively manage the beds and banks of Otago’s water bodies to mitigate the threat of flooding and riverbank erosion.

6.6.14 Provide resource information and educate about means available for better resource use and management.

6.6.15 Facilitate develop and implement mechanisms to maintain and where practicable enhance public access to and along the margins of Otago’s water bodies.

6.6.16 Support water user groups where they exist to implement water restrictions.

6.6.17 Consult with Otago’s communities regarding the management of Otago’s water resources.

6.6.18 Take enforcement action to address unauthorised water use activities.

6.6.19 Promote, encourage and coordinate remedial works to mitigate the degradation of Otago’s water resource resulting from contaminants.

6.6.20 Develop contingency plans and a response capability to deal effectively and efficiently with accidental spills of environmentally damaging substances into water bodies.

6.6.21 Promote and encourage interagency liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s water.

6.6.22 Promote user cooperation in the allocation and reallocation of water for consumptive use.

6.6.23 Use education programmes to improve community awareness and understanding of water issues and sustainable management in Otago.

6.6.24 Provide information on the adverse effects associated with water activities.

6.6.25 Recognise and encourage the role of community groups that promote sustainable management of water and associated resources.

6.6.26 Promote codes of practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of activities on the water resource.

6.6.27 Through the implementation and review of the Regional Plan: Water:
- Identify water bodies in Otago where significant resource conflicts occur;
- Set minimum flows, investigate and monitor the effects of abstraction; and review minimum flows where appropriate;
- Identify the methods and strategies to be used to achieve an orderly transition from Mining Privileges to Water Permits under the Resource Management Act.

Methods which may be used by Otago’s territorial local authorities include the following:

6.6.28 Consider including conditions on resource consents or consider declining such consents as necessary to maintain and where practicable enhance the quality of Otago’s water resources.
6.6.29 Consider including conditions on resource consents or consider declining such consents as necessary to protect Otago’s significant wetlands.

6.6.30 Consider controls within district plans necessary to protect Otago’s wetlands and water resources.

6.6.31 Promote, encourage and, where necessary and practicable, require the creation, retention and enhancement of riparian margins.

6.6.32 Promote and educate about mechanisms available to reduce or prevent inefficiencies in water use.

6.6.33 Facilitate develop and implement mechanisms to maintain and, where practicable, enhance public access to and along the margins of Otago’s water bodies.

Explanation and Principal Reasons for Adopting
Water is an essential resource which no individual or community can survive without. Sufficient quantities of high quality water are required by many groups or individuals for a range of uses. Such a key regional resource must be protected and allocated in order that future options are not disadvantaged by current activities. The methods of implementation outlined above are intended to provide for today’s requirements while allowing for future needs.
6.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

6.7.1 Otago’s people and communities have access to suitable supplies of high quality water for their present and reasonably foreseeable needs.

6.7.2 The management of Otago’s water resources takes into account the values of manawhenua.

6.7.3 The views of Otago’s communities are taken into account in the management of Otago’s water resources.

6.7.4 Otago’s water resources are allocated to a level which does not degrade the resource.

6.7.5 The quality of Otago’s water resource is maintained and enhanced.

6.7.6 Ecological, amenity and intrinsic values associated with Otago’s rivers, lakes, wetlands and freshwater habitats are protected.

6.7.7 Otago’s available water resources are used efficiently.

6.7.8 Public access is maintained and enhanced both to and along the margins of Otago’s water bodies.
7 Air
7.1 Introduction

The issues of air can be grouped into two major categories: those that are global in scale but where regional air quality management can make an important contribution and those that result in specific local effects on the environment. Unlike other resources in the region, air is not constrained by physical boundaries - just influenced by them. It is, however, a finite resource.

Problems associated with unacceptable air quality can be categorised into two main groups. Firstly, environmental or health risks which relate not only to human health and welfare but also the well being of all ecosystems; secondly, aesthetic problems which whilst not necessarily serious, affect an individual’s enjoyment of the environment through undesirable odour, visibility or general amenity values.

The Otago region is predominantly rural in nature with centres of urban development. Otago enjoys a generally high standard of air quality, considered by many residents of Otago to be one of the region’s great assets. The National Institute of Water and Atmospheric Research station is based in the Lauder area because of the clean air and high optical quality of the surrounding environment. This is due to the low population of the region relative to land area and the relatively frequent flushing of the region’s air mass. However, there are some localised air quality problems within the region including emissions from industrial, domestic and rural activities and localised urban air pollution problems.
7.2 Roles of Different Agencies

7.2.1 Central Government
The Minister for the Environment has an overview and monitoring role and is responsible for:
- The setting of national environmental standards for matters including contaminant discharges into the air and air quality.
- The preparation of national policy statements and guidelines.
- The provision of funding and subsidies to Regional Councils so that they can undertake functions of policy, monitoring and education with respect to the management of the air resource.

7.2.2 Otago Regional Council
The Otago Regional Council is concerned with promoting the sustainable management of the air resource pursuant to the Resource Management Act 1991. The Regional Council is responsible for:
- The preparation of objectives, policies and methods of implementation, including the setting of standards.
- The consideration of discharge permits where they are required.
- The monitoring of the quality of the air resource.
- The policing of unauthorised discharges into the air.
- The implementation of national policies and standards.

7.2.3 Territorial Local Authorities
Territorial local authorities are concerned with the management of discharges under the Resource Management Act, the Building Act 1992 and other legislation including the Health Act. Responsibilities include:
- Ensuring that contaminated air is disposed of in a way which avoids causing a nuisance or hazard to people and other property.
- The consideration of impacts on air quality in preparing plans and considering resource consents, even though a discharge permit may not be required.
7.3 Issues

7.3.1 Otago’s existing air quality, including visual appearance, may be compromised by the adverse effects of discharges to air from activities such as:

- The combustion of fuels; and
- Industrial activities; and
- Waste disposal practices; and
- Land management practices.

Otago’s air resource can be affected by a variety of pollution sources including stationary point sources (such as industrial and domestic emissions), stationary diffuse sources (such as vegetative burnoffs and wind blown dust) and moving point sources (such as vehicle exhaust emissions and spray and chemical drift from agricultural or horticultural operations).

The burning of combustible fuels such as coal, wood and petroleum products create the majority of the nation’s air pollution issues. Avoiding,remedying or mitigating these adverse effects is often difficult as the burning typically occurs at a variety of both stationary and moving sources. Discharges to air from industrial processes typically occur in identified locations and are more easily recognised and controlled. Waste disposal practices include backyard burning, the incineration of wastes and discharges from landfill tips. All of these discharges have the potential to adversely affect Otago’s air quality.

7.3.2 Otago’s environment may be compromised by the adverse effects of the global emission of greenhouse gases and ozone depleting substances.

Greenhouse gases, such as water vapour, carbon dioxide, methane and nitrous oxide trap a proportion of the sun’s energy, warming the Earth. These gases have increased in concentration over the last 130 years, largely due to worldwide population increases and technological changes which have increased the demand for energy. The most significant source of additional greenhouse gas is carbon dioxide from the burning of fossil fuels such as oil and coal. Another significant greenhouse gas is methane, produced both from animals and anaerobic decomposition of refuse landfills. Scientists predict that increasing concentrations of greenhouse gases may lead to sea level rise and climate changes. This may result in changed weather patterns eg. greater frequency and intensity of storms in some regions and droughts in others. There is still considerable uncertainty about these predictions since

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scientific understanding is still developing.

As set out in “Information for the Guidance of Local Authorities on Climate Change 1993”, provided to local authorities by the Ministry for the Environment, New Zealand has two objectives with regard to the discharge of carbon dioxide. The first objective is to stabilise net carbon dioxide emissions at 1990 levels by the year 2000, and maintain them at that level beyond then. If possible, however, the Government’s ultimate objective is to reduce net carbon dioxide emissions 20% below their 1990 levels by 2000, subject to a number of conditions for the measures likely to be required. A long term goal is a reduction of all greenhouse gas emissions, not just carbon dioxide.

The ozone layer, at 15 to 50 kilometres above the Earth’s surface, screens out harmful ultra-violet radiation. Chloro-fluorocarbons and halons are considered to be responsible for a depletion of the ozone layer and the appearance of the ozone hole which has been measured over both poles and a consequential increase in the amount of radiation reaching the Earth’s surface. These ozone depleting substances are put to a variety of uses such as refrigerants, the manufacture of foam plastics, as propellants in aerosols and as industrial cleaners. Due to the ozone hole and the increased radiation levels, ozone depletion is a major concern in the southern lying countries such as New Zealand, parts of South America, South Africa and Australia.
7.4 Objective

7.4.1 To maintain and enhance Otago’s existing air quality, including visual appearance and odour.

The maintenance and enhancement of Otago’s existing air quality is important for the continued well being of Otago’s communities and its attractiveness for visitors. Discharges of contaminants to air have the potential to have an impact upon the environment including the health of the community. Given the dynamic nature of the air resource (originating outside the region and passing across the region and onto other areas) the maintenance and enhancement of the air resource is also important for surrounding areas. This requires that all persons “Think Globally Act Locally” over Otago’s air resource.

Explanation and Principal Reasons for Adopting

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7.5 Policies

7.5.1 To recognise and provide for the relationship Kai Tahu have with the air resource in Otago.

The discharge of pollutants to air can have significant adverse effects on the cultural and spiritual relationship Kai Tahu have with Otago’s natural and physical resources. This policy recognises the relationship of runanga and hapu to their places and resources of cultural importance and provides for their role in the management of Otago’s waste stream.

7.5.2 To avoid, remedy or mitigate any discharges which have adverse effects on the air resource including effects on human health, the environment, visual impacts and odour.

New developments will be necessary within Otago if the region’s community is to continue to prosper. Many of these developments will include discharges of contaminants to air. Such developments will only be permitted if the adverse effects of the discharge are avoided, remedied, or mitigated, including effects on the human health of the community in which it is located. Similarly the assessment must include consideration of alternatives.

Existing discharges should also meet these same criteria as their consents are considered for renewal.

7.5.3 To promote and encourage improvements to existing discharges in order to reduce the amount and toxicity of contaminants released.

There are ongoing developments in new technologies and processes world-wide that improve both the efficiency of fuels used and the discharges from processes. The Otago community has a responsibility for the environment to ensure that existing processes are upgraded as far as practicable to reduce the adverse effects of discharges to air.
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<tr>
<td>7.5.4</td>
<td>To promote and encourage activities and methods that avoid, remedy or mitigate the production and discharge of greenhouse gases and ozone depleting substances.</td>
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<td>7.5.5</td>
<td>To encourage the use of fuels and combustion processes that have minimum adverse effects on the environment.</td>
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International agreements such as the Montreal Protocol include national obligations on greenhouse gases and ozone depleting substances. In New Zealand the Ozone Layer Depletion Act is in place. The Otago Regional Council supports initiatives aimed at reducing greenhouse gases and ozone depleting substances.

Present day fuel usage produces air contaminants at rates which can lead to the environment’s carrying capacity being exceeded. The region should be encouraging non or low polluting fuels such as hydrogen, biomass and solar fuels to reduce the discharges of contaminants into the region’s air resource.

Approximately 46% of New Zealand’s CO₂ emissions result from the combustion of transport fuel. Any transport plan for the region should encourage a reduction in CO₂ emissions as a matter of high priority.
7.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

7.6.1 Take into account Kai Tahu cultural values in the management of Otago’s air resources through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s air resources.

7.6.2 Develop policies and other means, including rules where appropriate, within the Regional Plan: Air to avoid, remedy or mitigate the adverse effects of the region’s air discharges.

7.6.3 To consider the development of air quality standards within the Regional Plan: Air.

7.6.4 Consider including conditions on resource consents or consider declining such consents as necessary to maintain and where practicable enhance the quality of Otago’s air resources.

7.6.5 Take enforcement action to address unauthorised air discharges.

7.6.6 Assess the communities’ expectations over air quality in relation to odours and visual appearance.

7.6.7 Develop an ongoing regional inventory of Otago’s air pollution sources.

7.6.8 Address air quality concerns in the development of the regional land transport strategy.

7.6.9 Actively collect, prepare and make available information on Otago’s air quality and air management requirements.

7.6.10 Initiate, support and encourage research and monitoring programmes to provide information on Otago's air issues and solutions.

7.6.11 Advocate to Central Government on air management issues of importance to Otago, and the need for a National Policy Statement on greenhouse gas emissions including CO₂ reduction targets and methods.

7.6.12 Promote and encourage liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s air resources.

7.6.13 Consult with Otago’s communities regarding the management of Otago’s air resources.

7.6.14 Support and encourage research into and conversion to the use of alternative fuels.

7.6.15 Educate about and promote practices which reduce the use of ozone depleting substances.
7.6.16 Promote mechanisms which mitigate the production of greenhouse gases, eg tree planting in appropriate circumstances.

7.6.17 Use education programmes to improve community awareness and understanding of air issues and sustainable management in Otago.

7.6.18 Provide information on the adverse effects associated with air activities.

7.6.19 Recognise and encourage the role of community groups that promote sustainable management of air and associated resources.

7.6.20 Promote codes of practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of activities on the air resource.

Methods which may be used by Otago’s territorial local authorities include the following:

7.6.21 Review the control of nuisance associated with domestic incineration and open air outdoor burning of rubbish, including vegetation, and private solid fuel heating appliances and installations, in accordance with the provisions of the Health Act 1956.

Explanation and Principal Reasons for Adopting
Air is an essential resource to all life on the planet. Sufficient quantities of high quality air are required by all individuals and communities so that they can carry on with everyday life. Air as a regional resource must be protected and managed. The methods of implementation outlined are intended to provide for the sustainable management of today’s requirements so that we may enjoy the resource in the future.
7.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

7.7.1 Otago’s communities have suitable supplies of acceptable quality air for their present and reasonably foreseeable needs.

7.7.2 The management of Otago’s air resources takes into account the values of manawhenua.

7.7.3 The quality of Otago’s air resource is maintained to existing standards and where practicable enhanced.

7.7.4 The adverse effects of Otago’s air pollution discharges are avoided, remedied or mitigated.

7.7.5 Air quality in urban environments is improved in respect of public health, visual appearance and odour.
8 Coast
8.1 Introduction

The coastal area of Otago has historically been managed in a piecemeal and fragmented manner. Managing the coastal environment involves the integrated management of the various components of the coastal environment to ensure the sustainability of the coast’s resources. These components include:

- The natural physical processes that act to shape Otago’s coastline;
- The ecological communities that are an integral part of Otago’s coastal character;
- The built environment (including urban areas, roads and structures) and the activities within and around the coastal area;
- The cultural connections made with the coast.

New Zealand has international obligations with respect to the coastal environment relating to marine pollution. These have been implemented through the enactment of the Maritime Transport Act, by which the discharge and dumping of harmful substances from ships is regulated by central government.

The Resource Management Act establishes a framework for the sustainable management of Otago’s coastal area. The key elements of this are shown in Figure 5.

The New Zealand Coastal Policy Statement puts in place national priorities and direction to guide the use, development and protection of New Zealand’s coastal environment. This Regional Policy Statement cannot be inconsistent with the New Zealand Coastal Policy Statement. The Regional Policy Statement is the only sub-national mechanism that provides for the integrated management of the coastal environment, extending across the mean high water mark. While the Regional Plan: Coast considers the coastal marine area, which extends from the mean high water spring mark out to the limits of the territorial sea (12 nautical miles or 22.2 kilometres), the Regional Policy Statement considers the entire coastal environment. This includes the coastal marine area as well as the land and river components which can be classed as being part of the coastal environment.

The coastal environment is the geographic area in which the coast is usually the significant part or element. This includes the coastal marine area as well as the land and river components within which activities directly affect, or are affected by, matters occurring in the

Figure 5 New Zealand’s Coastal Management Framework
coastal marine area. The extent of this geographic area will therefore vary from place to place.

The Otago coastal environment exhibits a variety of natural features, flora, and fauna found elsewhere on New Zealand’s coastline, while containing many distinguishing characteristics. Such features include the Moeraki Boulders, spectacular headlands and stacks such as those at the Nuggets, Cape Wanbrow and Otago Peninsula, the isolated sand beaches in the Catlins backed by lowland podocarp forests, deep water off Otago Peninsula feeding an array of wildlife, and numerous beaches and estuaries accessible and popular with people and wildlife alike.

Elements of Otago’s coastal environment, which reflect our national coastal environment, are the mixed sand and gravel beaches created by alluvial rivers, the areas of significant erosion, the vast stretches of relatively uninhabited coastline and the high proportion of the population living a small distance from the coast. The majority of Otago’s people (approximately 73%) live adjacent to the coast in the major urban areas of Dunedin and Oamaru along with the smaller settlements such as Moeraki, Karitane, Warrington and Owaka. The presence of Otago’s communities reflects our historical and continuing interaction with the coast.
8.2 Roles of Different Agencies

The management of Otago’s coastal environment is the responsibility of a number of agencies:

8.2.1 Central Government
The Minister of Conservation oversees the management of the coast from a national perspective and develops the New Zealand Coastal Policy to provide national direction for the way the coast is managed and used.

The Minister is also responsible for issuing coastal consents for activities which would cause significant or irreversible impacts on the coastal marine area. These activities are termed restricted coastal activities.

The Department of Conservation is also responsible for the administration of the Marine Reserves Act (1971) and the Marine Mammals Protection Act (1978).

The Ministry of Fisheries is responsible for the conservation and management of fisheries in the coastal marine area under the Fisheries Act 1983. This Act extends to the management, conservation, protection and allocation of fishing rights to Maori.

The Ministry for the Environment is responsible for regulating discharges and dumping from ships and offshore installations into the coastal environment. The Regional Council must enforce such regulations.

8.2.2 Otago Regional Council
The Otago Regional Council, in conjunction with the Minister of Conservation, is responsible for the sustainable management of the coastal marine area (from mean high water spring mark out to the 12 nautical mile limit). As part of that responsibility, the Otago Regional Council must develop a regional coastal plan for the coastal marine area of the Otago region. This sets the framework within which all coastal activities occur, providing a basis for the allocation of the coastal space and for the control of the effects of any use. The role of the Otago Regional Council does not however, extend to the control of fishing activities in the coastal marine area. This is provided by the Fisheries Act 1983. The Otago Regional Council also issues coastal permits for activities within the coastal marine area.

Provision also exists under the Harbours Act 1950 for the Otago Regional Council to take on the functions, responsibilities and roles of a Harbour Board for the entire coastal space, being safety and navigation functions. These functions are separate from its resource management functions under the Resource Management Act 1991.

8.2.3 Territorial Local Authorities
Otago’s district and city councils are responsible for controlling the adverse effects of landuses, primarily through the provisions of their district plans and through the issuing of landuse consents for land activities.
8.3 Issues

8.3.1 Use and development pressures within Otago’s coastal environment may compromise:

(a) The natural character;
(b) Estuarine areas;
(c) Significant habitats of indigenous flora and fauna;
(d) Outstanding natural features and landscapes;
(e) Areas of Significant Conservation Value;
(f) Amenity values;
(g) Water quality.

Otago’s communities want to be able to use and enjoy the coastal environment. Some activities can only locate in the coastal environment and some of these activities are essential to community well being (eg ports, roads, marinas). Other activities have adverse effects which are inappropriate in the area (eg developments having a high visual impact in a pristine coastal environment). The adverse effects of all activities need to be avoided, if possible, or remedied or mitigated, so that the environmental quality of the coastal environment is maintained and where possible enhanced. There are some particular attributes, identified in the issue itself, that are more susceptible than others to the adverse effects associated with activities.

8.3.2 The continual action of dynamic coastal processes along the boundary between the land and the sea is resulting in erosion and accretion along Otago’s coastline.

The natural action of coastal processes on the interface between the land and the sea can result in erosion of some areas and the building up (accretion) of others. Natural processes that result in erosion or accretion are considered a natural hazard when there are human structures or values associated with the areas that are threatened by those natural actions. Within Otago there has been concern over erosion such as at New Haven in the Catlins River estuary, at Aramoana, along Te Rauone Beach, at the Tokomairiro River mouth and along the North Otago coastline, particularly around Oamaru and Waitaki Boys High School. Areas that are accreting include Blueskin Bay and other bays to the north of Otago Peninsula and areas south of the Pleasant River.

8.3.3 Otago’s communities and natural and physical resources are threatened by possible sea-level rise in the long term.

Estimates of possible sea-level rise resulting from the gradual warming of the earth vary. What is known is that any rise in sea-level will result in the inundation of low lying coastal areas with salt water.
<table>
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<tr>
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<th>Policies</th>
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<tr>
<td>8.3.4</td>
<td>Public access to some areas of Otago’s coastline is limited and development, landuses and other activities have the potential to further reduce public access to and along the coastal marine area.</td>
<td>Maintaining existing public access to and along the coast, and enhancing access where this is restricted, is important to many of Otago’s citizens. Developments and landuses within the coastal environment have the potential to reduce that access. Section 6 of the Resource Management Act requires the maintenance and enhancement of public access as a matter of national importance. However there may be some exceptional circumstances sufficient to justify imposing restrictions on public access.</td>
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<td>8.3.5</td>
<td>Some space within Otago’s coastal marine area is currently occupied by exclusive uses and further exclusive use may be sought in the future.</td>
<td>The coastal marine area is generally in public ownership. However, there are occasions where use of the coast requires that exclusive occupation rights be given to an individual or group in order that they are able to carry out their activities (eg. port activities, marinas and defence activities). Decisions to grant such exclusive use over parts of the coast are likely to be of high public interest given the general view of the coast being available for all. It is also important however, to recognise that facilities such as ports and marinas of necessity require space allocation in certain areas of the coastal marine area.</td>
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<td>8.3.6</td>
<td>Discharges to the coastal environment may create adverse environmental effects which are of concern to Otago’s communities.</td>
<td>Discharges and rubbish from urban, industrial and rural areas, and from vessels into the coastal environment can have significant adverse effects, are culturally abhorrent to manawhenua, and are opposed by many. The Otago community has asked that alternatives to coastal discharges be investigated or that the quality of existing discharges be improved.</td>
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<td>8.3.7</td>
<td>The discharge of ballast water into Otago’s coastal marine area has the potential to result in contamination and in the introduction of exotic unwanted organisms.</td>
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<td>8.3.8</td>
<td>Otago’s coastal environment is threatened by pollution spills both on the land and in the water and by maritime shipping disasters.</td>
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<td>8.3.9</td>
<td>Excess noise within Otago’s coastal environment can adversely affect community and ecological values.</td>
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8.4 Objectives

8.4.1 To promote the sustainable management of Otago’s coastal resources in order to meet the present and reasonably foreseeable needs of Otago’s people and communities.

Otago’s communities make use of the coastal environment for a variety of industrial, commercial and recreational uses. These uses help provide for the social, economic and cultural well being of Otago’s communities. The management of the coastal environment needs to recognise the importance of these uses and the need for them to be sustainable.

8.4.2 To maintain and enhance the health and diversity of Otago’s existing coastal ecology.

The life-supporting capacity of Otago’s coastal ecosystems is to a large extent dependent on their continuing health and diversity. That life-supporting capacity is also important to Otago’s communities who variously derive economic, social and cultural rewards from having a healthy and diverse coastal system.

8.4.3 To recognise and understand the action of natural physical coastal processes affecting the natural and physical resources within Otago’s coastal environment.

Otago’s coastal environment, as with all of New Zealand’s coastal environments, is subject to natural processes which shape the physical structure of the coast. Currents and wave action can result in scouring of bays, movement of sediments, erosion and accretion. Recognising the nature and effect of these and other natural coastal processes is required in the management of the coastal environment.
### Objectives

<table>
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<tr>
<th>Objective</th>
<th>Explanation and Principal Reasons for Adopting</th>
<th>Policies</th>
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<tr>
<td>8.4.4 To seek to maintain existing water quality within Otago’s coastal waters and where water quality is degraded, to seek to achieve water quality suitable for contact recreation and the eating of shellfish.</td>
<td>Water quality varies along Otago’s coastline. Where water quality is not degraded, it is important that this standard is maintained. Some of Otago’s coastal water is degraded but there is insufficient information at present with which to base water quality classes. In order to ensure that this information is collected, this objective seeks to achieve water quality classes suitable for contact recreation and shellfish gathering.</td>
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<td>8.4.5 To protect areas of natural character, outstanding natural features and landscapes and their associated values within the coastal environment.</td>
<td>Otago’s coastline is made up of a variety of different landscapes and natural features which make it unique. People appreciate the natural beauty and character of the coast and wish to retain that character. The preservation and protection of natural character, outstanding natural features and landscapes in the coastal environment is a matter of national importance under Section 6 of the Resource Management Act and is important in achieving integrated management of the coastal resource.</td>
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<td>8.4.6 To maintain and enhance public access to and along Otago’s coastal marine area.</td>
<td>Otago’s coastal environment provides a range of use opportunities, including recreation, tourism, scientific and educational activities. It is important that public access to the coast exists and is enhanced wherever possible, subject to appropriate considerations such as ecological and cultural sensitivity, public health and safety and the agreement of landholders, where access crosses private or Crown leasehold land.</td>
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8.5 Policies

8.5.1 To recognise and provide for the relationship Kai Tahu have with Otago’s coast through:
(a) Identifying in conjunction with Kai Tahu priority areas and mechanisms for upgrading mahika kai and for protecting waahi tapu, waahi taoka and places of cultural importance;
(b) Facilitating, where practicable, the maintenance and enhancement of access for Kai Tahu to waahi tapu, waahi taoka and mahika kai and places of cultural importance; and
(c) Protecting the characteristics of the coastal environment of special value to tangata whenua.

Kai Tahu are the kaitiaki of the Otago coastal environment which includes the harbours and linking systems. The coastal environment has many features and values that are important to the culture of Kai Tahu and these should be protected. Mahika kai, places for the gathering of food, are an important cultural element of the coastal environment and coastal marine area and their sustainable management is important to Manawhenua. It is also important that access be available to mahika kai and other important sites such as waahi tapu and waahi taoka. In some cases however, access may also have to be restricted in order to protect cultural values and special characteristics of the coastal environment.

8.5.2 To recognise uses within the coastal environment through:
(a) Accepting the continuation of lawfully existing uses;
(b) Allowing for the maintenance and where practicable enhancement of existing infrastructure; and
(c) Allowing for activities requiring a coastal location; subject to avoiding, remedying or mitigating the adverse effects of any activity.

The management of Otago’s coastal environment is regarded as one of the significant resource management issues of the region and therefore needs to be provided for through the Regional Policy Statement, which must also provide the policies necessary to achieve integration between the coastal marine area and adjoining land, water and air resources.

The Otago community already makes use of the coastal environment, establishing facilities such as recreational sites, homes and buildings. The continuation of that use is important to the social, cultural and economic well being of the region. The coast is also the site of significant existing infrastructural assets such as road, rail and communication links which have to be maintained. Some activities, such as commercial port operations, marinas and fishing bases have to be located on the margin. Within Otago, these occur at Oamaru, Moeraki, Kaitame, Otago Harbour, Taieri Mouth and the Nuggets. While these activities have to be recognised and provided for in the management of the coast, the adverse effects of those activities must be avoided, remedied or mitigated to reduce the impact on the coastal environment. Specific

See Also Other Policies

<table>
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<th>Methods</th>
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<td>also provide the policies necessary to</td>
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<td>achieve integration between the coastal</td>
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<td>infrastructural assets such as road, rail</td>
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<td>provided for in the management of the coast,</td>
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<td>the adverse effects of those activities must</td>
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<td>be avoided, remedied or mitigated to reduce</td>
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<td>the impact on the coastal environment. Specific</td>
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8.5.3 To maintain and enhance public access to and along Otago’s coast through:
(a) Identifying areas where access is not meeting community expectations; and
(b) Providing for the retention and setting aside of esplanade strips and reserves or access strips along the coastal margin which may enhance access; and
(c) Identifying and providing for other opportunities to improve access; except where such restriction is necessary;
   (i) To protect areas of significant indigenous vegetation and/or significant habitats of indigenous fauna; or
   (ii) To protect Maori cultural values; or
   (iii) To protect public health or safety; or
   (iv) To ensure a level of security consistent with the purpose of a resource consent; or
   (v) In other exceptional circumstances sufficient to justify the restriction notwithstanding the national importance of maintaining that access.

8.5.4 To recognise and provide for the preservation of the natural character of Otago’s coastal environment and to protect outstanding natural coastal features and landscapes from inappropriate subdivision, use and development through identifying and protecting:
(a) Estuarine areas, salt marshes and lagoons;
(b) Significant habitats of indigenous flora and fauna;

Activities which will be permitted, discretionary, controlled, non-complying or prohibited, based on the effects that those activities have, is specified in the Proposed Regional Plan: Coast.

In order to preserve Otago’s natural coastal character (as required by section 6 of the Resource Management Act), the areas which constitute that character have to first be identified and agreed to. The elements that contribute to Otago’s natural coastal character include:
- Wetlands, estuaries, coastal lagoons, salt marshes and harbours, eg. Aramoana Salt Marsh, Waitati Estuary, Papanui Inlet.
(c) Areas of significant conservation value;
(d) Important coastal physical features; and
(e) Areas of cultural, historic, spiritual, recreational and scientific significance in Otago.

- Dunes and dune slacks, eg. Tahakopa Bay and Crystal’s Beach.
- Significant landforms, eg. Karitane Headland, Moeraki Peninsula, Shag Point, Nugget Point.
- Significant islands and stacks, eg. Maukiki Island, Goat Island.
- Marine mammal and bird colonies, eg. Jacks Bay yellow-eyed penguin colony.
- Areas of coast backed by significant indigenous vegetation, eg. the Catlins.

Significant areas of Otago’s coastal environment contribute to the natural character of the coast and provide important ecological communities for coastal flora and fauna. Their need for protection is due to the potential adverse effects associated with the use of the coast, including cumulative effects. Consultation with the public is required to identify significant areas and to educate about the values of those areas. Once identified, the effects of activities will be restricted to ensure the preservation of those areas.

The protection of the coastal environment and outstanding natural features and landscapes from inappropriate subdivision, use and development is a matter of national importance that must be recognised by all agencies managing the coastal environment (Section 6 of the Resource Management Act). In order to protect these elements, areas susceptible to the effects of inappropriate subdivision, use and development will be identified and controls developed to manage the effects of those uses in those areas. In addition to the elements identified above, these areas will include scenic, recreational and historic areas, areas of spiritual and cultural significance and scientific and landscape features.

Until the identification of Otago’s outstanding natural coastal features and landscapes is completed, careful consideration will need to be given as to whether a particular outstanding natural coastal feature or landscape falls within criteria (a) to (e) of this policy.
8.5.5 To maintain and where practicable enhance the physical and ecological quality of the coastal environment through:

(a) Protecting the life-supporting capacity of coastal ecosystems; and
(b) Avoiding as far as practicable, or remedying or mitigating the adverse effects, including cumulative effects, of land and water based activities on the coastal marine area through appropriate methods.

The physical and ecological quality of the coastal environment is important in order to sustain the life-supporting capacity of coastal areas and in order to meet the present and reasonably foreseeable needs of Otago’s communities.

Decisions made with respect to the land resource can potentially impact upon the quality of the coastal environment. Activities with potential for such impacts include urban subdivision and development, sand and aggregate extraction and reclamation. There is therefore a need to control land use effects on the quality of the coastal environment, in conjunction with territorial local authorities.

8.5.6 To promote a reduction in the adverse effects of contaminant discharges into Otago’s coastal waters through:

(a) Adopting the existing water quality of Otago’s coastal waters as a minimum acceptable standard; and
(b) Investigating and where appropriate, enhancing water quality so that as a minimum standard it is suitable for contact recreation and shellfish gathering where

(i) There is a high public interest in, or use of the water; or
(ii) There is a particular Kai Tahu interest in the water; or
(iii) There is a particular value to be maintained or enhanced; or
(iv) There is a direct discharge containing human sewage or wastes from commercial or industrial activities; and
(c) Requiring that all discharges into Otago’s coastal water quality varies along the Otago coastline. In order to maintain the water quality in areas where it has not been degraded, the existing water quality has to be adopted as the minimum acceptable standard. This also prevents further degradation in areas where the quality of water has already been lowered. Areas where degraded water quality is of particular concern will need to be identified. In such cases, a higher standard may be set to bring about an improvement, over time, in the quality of that water. One example, which has recognised problems in terms of water quality in some areas, is the Otago harbour. Although the Dunedin City Council already has a programme in place to remove all sewage discharges from the harbour, and other discharges which require a consent are being progressively improved, there is still a need to address areas of poor water quality, particularly in respect of non point source discharges.

All discharges will need to meet the applicable standard for the receiving waters after reasonable mixing. Discharges to land, provided they do not result in adverse effects greater than the same discharge to water, will be promoted wherever practicable.
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<th>Explanation and Principal Reasons for Adopting</th>
<th>Methods</th>
<th>See Also Other Policies</th>
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<td>coastal waters maintain the standard for the receiving waters after reasonable mixing; and</td>
<td>Accidental spills of contaminants such as oil along the coastline and within harbours have the potential to pollute water for long periods of time. The preparation of suitable response strategies is necessary so as to minimise the damage they may cause.</td>
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<td>(d) Promoting discharges to land where practicable and where there are no significant adverse effects on groundwater or surface water resources, or soil; and</td>
<td>The effects of land uses within the coastal environment also need to be considered with respect to water quality. Sometimes pollution resulting from landuse practices, septic tanks and urban run off cause as much harm as pipe discharges.</td>
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<td>(e) Preparing contingency responses for accidental pollution spills; and</td>
<td>The requirements of Otago’s communities and the financial and technical constraints relating to any particular discharge are relevant matters to be considered in order to meet the social, economic and cultural needs of Otago’s communities.</td>
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<td>(f) Investigating and addressing the effects of diffuse source discharges on coastal water quality;</td>
<td>Human interaction with coastal processes can act to minimise or aggravate the effects of those processes. Identifying those areas subject to active coastal processes, and requiring the building of relocatable structures or the avoidance of any structures in these areas reduces the effect of those processes on human systems. These options may not be feasible for some existing infrastructure or structures, such as roading and ports, and coastal protection works may be required. In cases where coastal protection works are required, an assessment of the effects of that work on the environment will be required in order to identify the method with the least adverse effect.</td>
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<td>8.5.8 To recognise and provide for sea-level rise through requiring that the best available international estimate of the possible rise be incorporated into planning for the coastal environment and in the design and building of structures.</td>
<td>The possibility of sea-level rise is a threat that coastal developments will be required to incorporate into their designs. District and regional plans will also be required to incorporate the best available estimate of sea-level rise, in recognition of the threat of adverse effects on Otago’s coastal margins. International estimates at 1995 of possible sea-level rise as a result of greenhouse warming of the Earth, indicate a rise of 0.2 metres (range 0.1 - 0.3 metres) by year 2050 (International Panel on Climate Change). This possible rise needs to be considered in today’s planning and management.</td>
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<td>8.5.9 To control the emission of noise within the coastal environment consistent with the adjacent Territorial Local Authority noise controls and the New Zealand noise standards.</td>
<td>The Otago Regional Council is responsible for noise control in the coastal marine area, while territorial authorities have that responsibility on the land components. Unrestricted noise sources have the potential to adversely affect the amenity and intrinsic values of an area. In considering the generation of noise within the coastal environment, regard must be had to any noise control provisions stated in any relevant district plan. Regard will also be had to the standards established by the Standards Association of New Zealand applicable to the generation of noise.</td>
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8.5.10 To prohibit the passage of nuclear armed or powered vessels, vessels carrying nuclear material for use in nuclear power plants or weapons or vessels carrying nuclear wastes other than for medical or research purposes within Otago’s coastal marine area.

The potential adverse effects on Otago’s coastal environment and hinterland from an accident involving a nuclear powered or armed vessel or a vessel carrying nuclear material is unacceptable to the people of Otago. Areas of the coastal environment could become contaminated with nuclear material that would persist for many years. Although the risk of an accident may be small, the effects of any accident are such that the risk should be avoided.
8.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

8.6.1 Take into account Kai Tahu cultural values in the management of Otago’s coastal resources through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s coastal resources; and
(c) Identifying and protecting Kai Tahu values in the Proposed Regional Plan: Coast.

The methods to be used by the Otago Regional Council include the following:

8.6.2 Develop the Otago Regional Plan: Coast in accordance with the requirements of the Resource Management Act.

8.6.3 Develop and implement mechanisms within the Regional Plan: Coast, requiring that the best available international estimate of possible sea-level rise be incorporated into the design and building of structures within the coastal marine area.

8.6.4 Consider including conditions on resource consents or consider declining such consents as necessary to maintain and where practicable enhance the quality of Otago’s coastal environment.

8.6.5 Educate about the complexities of the coastal environment and promote the need for everybody to play their part.

8.6.6 Initiate, support and encourage research and monitoring programmes to provide information on Otago’s coastal issues and solutions.

8.6.7 Consult with Otago’s communities regarding the management of Otago’s coastal environment.

8.6.8 Develop protocols and procedures with local authorities to ensure the joint processing of applications for coastal use, development or protection that require consents on both sides of the line of mean high water spring.

8.6.9 Facilitate, develop and implement mechanisms to maintain and where practicable enhance public access to and along Otago’s coastline.

8.6.10 Advocate to Central Government on coastal management issues of importance to Otago.

8.6.11 Liaise with all parties with a coastal management responsibility.

8.6.12 Take enforcement action to address unauthorised coastal activities.

8.6.13 Coordinate remedial works to mitigate the degradation of Otago’s coastal marine area from land and water based activities.
8.6.14 Promote and encourage interagency liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s coast.

8.6.15 Consult and negotiate with landowners adjoining the coastal marine area regarding opportunities to improve public access to the coast.

8.6.16 To review all permits to discharge into the coastal marine area, and review the conditions of those permits where necessary.

8.6.17 Develop contingency plans and a response capability to deal effectively and efficiently with accidental spills into the coastal environment of environmentally damaging substances.

8.6.18 To support the establishment of marine reserves which are selected following full community consultation, and which have community support.

8.6.19 To support the establishment of taiapure which are selected following full community consultation, and which have community support.

8.6.20 Use education programmes to improve community awareness and understanding of coastal issues and sustainable management in Otago.

8.6.21 Provide information on the adverse effects associated with coastal activities.

8.6.22 Recognise and encourage the role of community groups that promote sustainable management of the coast and associated resources.

8.6.23 Promote codes of practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of activities on the coast.

8.6.24 Prepare, in consultation with relevant agencies, the community and affected landowners, an inventory of outstanding natural coastal features and landscapes that are regionally significant, including scenic, recreational and historic areas, areas of spiritual and cultural significance and scientific and landscape features.

Methods which may be used by Otago’s territorial local authorities include the following:

8.6.25 Consider including conditions on resource consents or consider declining such consents as necessary to maintain and where practicable enhance the quality of Otago’s coastal environment.

8.6.26 Develop and implement mechanisms within the district plans that restrict or control subdivision and building in areas susceptible to inundation from sea-level rise based on the best available international estimate of possible sea-level rise.

8.6.27 Control subdivision and building within coastal hazard areas.

8.6.28 Facilitate, develop and implement mechanisms to maintain and where practicable enhance public access to and along Otago’s coastline.
Explanation and Principal Reasons for Adopting
The effective management of the coastal environment involves management initiatives throughout the Otago region. The coast is, in many cases, the final receiving environment for the adverse effects associated with resource use practices throughout the region. Close liaison with territorial authorities over the need to avoid, remedy or mitigate the adverse effects of land based activities on the coastal environment is required because of the interactions between the land and the sea.

Activities within the coastal marine area will be subject to the policies and rules within the Otago Regional Plan: Coast which will seek to ensure the sustainable management of Otago’s coastal areas. Conditions on resource consents will be able to restrict the adverse effects on the coast from all activities.

The management of the coast is also a responsibility of the Otago community, as it is the results of their actions which can improve or degrade the coast.
8.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

8.7.1 Otago’s communities are able to utilise the region’s coastal environment for their present and reasonably foreseeable needs.

8.7.2 The management of Otago’s coastal environment takes into account the values of manawhenua.

8.7.3 The existing ecological and physical quality of Otago’s coastal environment is maintained and enhanced.

8.7.4 Public access is maintained and enhanced, both to and along the coastal environment.

8.7.5 The natural character of Otago’s coastal environment is preserved.

8.7.6 The region’s significant coastal wildlife, scenic and landscape values are protected.
9 Built Environment
9.1 Introduction

In simple terms, the built environment can be considered as those man-made facilities and structures which form part of the physical resources of the region. However, in reality the built environment is far more complex, involving the relationship between people and communities and the facilities and structures they construct, use and develop to fulfil their needs and wants.

A definition of built environment is not provided in the Act. Within this Regional Policy Statement, the term refers to:

“Those man-made facilities and structures, including urban environments and their associated amenity values, that are utilised by Otago’s communities for their social, economic and cultural well being, and the relationships that exist between them.”

The built environment is made up of such things as urban and rural settlements, telecommunications, radiocommunications and electricity networks, road and rail links, sewerage and water systems, port and airport facilities, dams and flood control structures and recreational facilities.

The well being, safety and health of people and communities is closely linked to the built environment. The built environment meets basic human needs such as shelter and warmth, provides a system of mobility and access to services, infrastructure for economic activity, contributes to the community’s quality of life and protects its assets. For this reason, it is essential that the built environment is managed in a sustainable way for current and future generations.

The nature and character of Otago’s built environment has evolved from a diverse range of factors such as:

- The heritage and cultural resources of the region’s people;
- The natural and physical resource base of the region, enabling the development of economic activities such as agriculture, forestry and manufacturing;
- Technological advances allowing the expansion of the region’s infrastructure and human settlement;
- The nature of Otago’s topography and landforms, and the constraints it has placed on the pattern of settlement;
- The community’s controls on landuse activities and structures.
9.2 Roles of Different Agencies

Under the Resource Management Act, a number of agencies have key planning roles in relation to the built environment. They include:

9.2.1 Central Government
Central Government has two important roles in regard to the built environment. It is responsible for preparing national policy statements and environmental guidelines which may affect the way the built environment can be used or developed. Central Government also has a significant role in managing parts of the built environment through its ownership and control of physical resources such as state highways, dams and state housing. Other government agencies are responsible for protecting natural and physical resources, such as the Historic Places Trust which promotes the identification and conservation of the historical and cultural heritage of New Zealand.

9.2.2 Otago Regional Council
The Otago Regional Council is concerned with the regionally significant environmental consequences of decisions affecting the use, development and protection of the built environment. This strategic role is augmented by primary responsibility for soil and water concerns, coastal marine areas, hazards and discharge of contaminants into the environment. Regional plans can be prepared to cover these specific areas of responsibility.

The Otago Regional Council also has responsibilities under transport legislation for the development of a regional land transport strategy identifying the future transport needs of the region and the best means to achieve them. Other responsibilities include the planning and funding of public transport services.

9.2.3 Territorial Local Authorities
Under section 31, district and city councils have the primary responsibility for managing and controlling the use, development and protection of land, including the control of any potential or actual adverse effects.

City and district councils also own and manage parts of the built environment such as local roads, water and sewerage systems, and pensioner housing.

Territorial local authorities also have major responsibilities under the Building Act 1991. These include safeguarding public interest in health, safety, amenity and protection of other property as it is affected by the construction and maintenance of all buildings.
9.3 Issues

9.3.1 The adverse effects of urban development and settlement can impact upon the quality of the built environment and on the use of natural and physical resources.

The quality and character of the built environment contributes to the community’s appreciation of it as a place to live. For example, the quality of Dunedin’s built environment as a place to live is bound up with its distinctive heritage cityscape - very few tall new buildings, a range of open spaces, recreational facilities, topography and climate. Similarly, Otago’s smaller settlements provide a range of qualities and characteristics that make them attractive places in which to live and visit.

It is important that a balance is achieved in maintaining the quality of the built environment as a place to live, while providing opportunities for economic change and growth and residential choice.

Urban development and settlement patterns have a pervasive influence on the use and development of natural and physical resources within the region. Resources are used both in the expansion and maintenance of urban areas (such as land and energy), or are affected by emissions and discharges associated with urban land use (such as air and water). While dramatic changes in settlement patterns within Otago are unlikely over the next 10 years, the changes and pressures associated with urban development and settlement are readily apparent, particularly within inner Dunedin, and on the periphery of Queenstown, Cromwell and Alexandra. The issues associated with urban development and settlement include:

- Adverse effects resulting from discharges into the atmosphere such as industrial processes, domestic home heating and backyard burning, and motor vehicles;
- Loss of productive land and landscape values to urbanisation and expansion of settlement;
- Contamination of water bodies from industrial and domestic
9.3.2 **Otago is dependent on an efficient network of utilities to provide for the social, economic and cultural well being of Otago’s communities.**

Utility networks are important for the continued well being of Otago’s communities. The costs of maintaining and developing infrastructure such as water supply, sewerage and roading is an ongoing concern for urban and rural communities within Otago. In many cases the costs will be borne by a small and declining population base. Their concerns include:

- The high costs of extending services and utilities such as roads and water supplies;
- The lack of coordination amongst network utility operators in the provision of infrastructure;
- Under-utilised buildings and services and a general lack of investment in existing infrastructure;
- The high dependence on non-renewable resources (eg. Fossil fuels) for some activities and services (eg. transport, heating) in the built environment which is not efficient in the long-term;
- The maintenance and development of infrastructure for long-term sustainable use.

9.3.3 **Otago is dependent on an efficient transport network to utilise its resources, and to provide mobility and access for its people and communities.**

The dispersed pattern of Otago’s population and activities and the often rugged nature of its topography place a high dependence on an efficient transport network for utilising the region’s resources, and providing mobility and access for its people and communities. Otago’s transport network includes an extensive roading system, rail links to adjacent regions, a major sea port on the Otago harbour and two major air ports, Dunedin airport at Momona and Queenstown airport at Frankton. The issues affecting Otago’s land
transport network are both global and local in nature and include:

- The increasing use of non-renewable energy in the transport sector;
- The adverse effects of transport systems including air and water pollution, noise, visual intrusion, dust and local ecological damage;
- The maintenance and enhancement of the transport network to meet the needs of the regional community; and
- The adverse effects of landuse activities on the transport network, especially adjacent landuse activities which would otherwise reduce safety and efficiency.
9.4 Objectives

9.4.1 To promote the sustainable management of Otago’s built environment in order to:

(a) Meet the present and reasonably foreseeable needs of Otago’s people and communities; and

(b) Provide for amenity values, and

(c) Conserve and enhance environmental and landscape quality; and

(d) Recognise and protect heritage values.

The well being, safety and health of people and communities is dependent, to a greater or lesser degree, on the constraints and benefits afforded by the built environment. The built environment must be sustainably managed for the present and future needs of Otago’s communities. This will be achieved by promoting sustainable patterns of urban development and settlement while allowing for amenity values.

9.4.2 To promote the sustainable management of Otago’s infrastructure to meet the present and reasonably foreseeable needs of Otago’s communities.

Roading and rail networks, power generation and transmission systems, water and sewage reticulation and telecommunication systems are all important in ensuring that the needs of Otago’s communities are able to be met. They provide an infrastructure for urban development and settlement, economic activity and for the distribution of goods and services within the region. Their sustainable management is required to ensure that they will continue to meet the needs of Otago’s communities.

9.4.3 To avoid, remedy or mitigate the adverse effects of Otago’s built environment on Otago’s natural and physical resources.

Urban development and settlement, and economic activities undertaken within the built environment, may have adverse effects on Otago’s natural and physical resources. These adverse effects include, amongst others, increasing air and water pollution from emissions and discharges, increasing energy use for transport, domestic and industrial uses, the taking of land for urban development, particularly the threat of urban expansion on high class soils, the loss of, or damage to landscapes and heritage resources, and the loss of amenity values.
9.5 Policies

9.5.1 To recognise and provide for the relationship Kai Tahu have with the built environment of Otago through:
(a) Considering activities involving papatipu whenua that contribute to the community and cultural development of Kai Tahu; and
(b) Recognising and providing for the protection of sites and resources of cultural importance from the adverse effects of the built environment.

9.5.2 To promote and encourage efficiency in the development and use of Otago’s infrastructure through:
(a) Encouraging development that maximises the use of existing infrastructure while recognising the need for more appropriate technology; and
(b) Promoting co-ordination amongst network utility operators in the provision and maintenance of infrastructure; and
(c) Encouraging a reduction in the use of non-renewable resources while promoting the use of renewable resources in the construction, development and use of infrastructure; and
(d) Avoiding or mitigating the adverse effects of subdivision, use and development of land on the safety and efficiency of regional infrastructure.

Explanation and Principal Reasons for Adopting

This policy gives heightened opportunity for runanga and hapu to develop their communities through housing projects and building of marae. The policy recognises the role of runanga and hapu in the management and control of the built environment and gives effect to the provisions of the Treaty of Waitangi.

It is acknowledged that land provides a strong source of cultural and spiritual identity to Kai Tahu and that this relationship has not been adequately recognised by authorities in the past. Many cultural sites and values have been lost to the development of the built environment. Such development in future will have regard to such cultural values.

One means of achieving the sustainable use of infrastructure is to emphasise consolidation and improved use of existing infrastructure prior to extensions or new development. This approach will help reduce the costs to the community for providing and maintaining infrastructure and promote its more efficient use in the long term.

Methods

See Also Other Policies

9.6.1
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6.5.9 to 6.5.10
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8.5.1 to 8.5.4
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10.5.1
11.5.2 to 11.5.4
12.5.2 to 12.5.3
14.5.1 to 14.5.8
15.5.1 to 15.5.2
9.5.3 To promote and encourage the sustainable management of Otago’s transport network through:

(a) Promoting the use of fuel efficient modes of transport; and

(b) Encouraging a reduction in the use of fuels which produce emissions harmful to the environment; and

(c) Promoting a safer transport system; and

(d) Promoting the protection of transport infrastructure from the adverse effects of landuse activities and natural hazards.

Maintaining the transport network is essential for meeting the mobility and access needs of Otago’s communities. The adverse effects on transport infrastructure that undermine its ability to function efficiently and effectively also need to be considered. These include traffic demands of landuse activities which are not appropriate for the function of the road, developments which impede access to sea ports, the effects of hazards such as slipping or earth movement and erosion. However, the adverse effects of that network (which include pollution, reliance on non-renewable energy sources, congestion, road accidents, difficulties in using the network due to cost or disability and urban sprawl) must be balanced against the benefits of mobility and access. A long-term coordinated viewpoint based on the sustainability of Otago’s natural and physical resources is required.

9.5.4 To minimise the adverse effects of urban development and settlement, including structures, on Otago’s environment through avoiding, remedying or mitigating:

(a) Discharges of contaminants to Otago’s air, water or land; and

(b) The creation of noise, vibration and dust; and

(c) Visual intrusion and a reduction in landscape qualities; and

(d) Significant irreversible effects on:
   (i) Otago community values; or
   (ii) Kai Tahu cultural and spiritual values; or
   (iii) The natural character of water bodies and the coastal environment; or
   (iv) Habitats of indigenous fauna; or
   (v) Heritage values; or
   (vi) Amenity values; or
   (vii) Intrinsic values of ecosystems; or
   (viii) Salmon or trout habitat.

Managing the built environment in a sustainable way requires that adverse effects that arise through its existing use, or from the extension of urban areas, or in change of the use in either urban or rural settings, are avoided or lessened. These effects may be the direct result of the ongoing use and development of the built environment and would include most forms of pollution, loss of land to urban development and increased energy consumption. The effects may also be indirect and result from the built environment’s influence on landuse, accessibility to facilities and safety. They may be local or global in impact and all impose costs on the community.
9.5.5 To maintain and, where practicable, enhance the quality of life for people and communities within Otago’s built environment through:

(a) Promoting the identification and provision of a level of amenity which is acceptable to the community; and

(b) Avoiding, remedying or mitigating the adverse effects on community health and safety resulting from the use, development and protection of Otago’s natural and physical resources; and

(c) Avoiding, remedying or mitigating the adverse effects of subdivision, landuse and development on landscape values.

There are important features, qualities and values of the built environment which contribute to the community’s quality of life. These should be conserved and enhanced and accorded appropriate recognition in planning by local and Central Government. Agencies such as district and city councils and the Historic Places Trust are encouraged to identify and protect these features and values at the local level. The health of the community is influenced by a wide range of public and private agencies, in addition to the quality of the built environment.

9.5.6 To recognise and protect Otago’s regionally significant heritage sites through:

(a) Identifying Otago’s regionally significant heritage sites in consultation with Otago’s communities; and

(b) Developing means to ensure those sites are protected from inappropriate subdivision, landuse and development.

Otago has many heritage sites which serve to reinforce the region’s identity and cultural past. These include features as diverse as archaeological sites, Victorian buildings and historic gold field tailings. Heritage sites should be identified and protected to preserve the tangible links to Otago’s past and to enable them to be understood and appreciated by subsequent generations.
9.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

9.6.1 Take into account Kai Tahu cultural values in the management of Otago’s built environment through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s built environment.

The methods to be used by the Otago Regional Council include the following:

9.6.2 Develop a Regional Land Transport Strategy to provide a strategic overview for the management of Otago’s land transport system identifying:
(a) Future transport needs of the region; and
(b) The most desirable means of responding to those needs in a safe and cost effective manner; and
(c) The effect the transport system is likely to have on the environment; and
(d) The appropriate role for each transport mode.

9.6.3 Assist in the identification of Otago’s regionally significant heritage sites in consultation with relevant agencies and Otago’s communities and promote and encourage their protection.

9.6.4 Investigate the potential use of the heritage order provisions under the Resource Management Act to protect heritage values of regional significance.

9.6.5 Consult with Otago’s communities regarding the management of Otago’s built environment.

9.6.6 Advocate to Central Government on built environment issues of importance to Otago.

9.6.7 Promote and encourage interagency liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s built environment.

Methods which may be used by Otago’s territorial local authorities include the following:

9.6.8 Utilise means to identify and protect regionally significant heritage sites within their district.

9.6.9 Consider the effects of extensions to existing infrastructure or new developments, and the adverse effects of subdivision, use and development of land on the safety and efficiency of regionally significant infrastructure.

9.6.10 Provide the means to protect significant landscapes within their district from inappropriate subdivision, use and development where those landscapes contribute to the quality of life for those within the built environment.

9.6.11 Use education programmes to improve community awareness and understanding of issues associated with the built environment and sustainable management in Otago.
9.6.12 Provide information on the adverse effects associated with activities in the built environment.

9.6.13 Recognise and encourage the role of community groups that promote sustainable management of the built environment and associated resources.

9.6.14 Promote codes of practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of activities on the built environment.

Explanation and Principal Reasons for Adopting
These methods are designed to encourage agencies and where relevant, the community, to recognise and meet their responsibilities under the Resource Management Act and other relevant Acts, by adopting the concept of sustainable management of the built environment and the avoidance of adverse effects on the environment. Consultation with the community on matters relating to the built environment will form an integral part of this process. These matters include the significant resource management issues identified in 9.3 and the means to address them.
9.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

9.7.1 The built environment meets the present and reasonably foreseeable needs of Otago’s communities.

9.7.2 The management of Otago’s built environment takes into account the values of manawhenua.

9.7.3 The use, development and protection of infrastructure is managed in a sustainable way.

9.7.4 A relative reduction is achieved in the use of non-renewable resources in the transport sector.

9.7.5 Heritage sites of regional significance are protected and enhanced.

9.7.6 Amenity values are provided at a level acceptable to Otago’s communities.
Biota
10.1 Introduction

The term “Biota” describes the living components of the environment. Although humans are part of Otago’s living environment, this chapter does not deal with them expressly. It considers the animals and plants found within Otago and the interactions between them, and recognises the interactions with humans. Some examples of these interactions include the importance of healthy and diverse ecosystems to sustain economic uses such as primary production and tourism and also to sustain healthy communities through access to the recreational, aesthetic, educational, scientific and other opportunities associated with habitat and biota. The chapter addresses both indigenous and introduced species, whether they are harmful or useful to Otago’s economy. It is important to consider all species and the way in which they affect each other in a complex web of interactions.

Otago’s biota is in a dynamic state, with change occurring all the time. It is the nature of the change and the impact of human actions on it that give rise to the issues that need to be considered in this Regional Policy Statement. Change can be influenced through management aimed at promoting results that are generally considered beneficial.

Part of Otago’s character is derived from its biota, which contributes to the region’s unique landscapes and ecological communities. Some examples of Otago biota are:

- Royal albatrosses and yellow-eyed penguins;
- Skinks and Cromwell’s chafer beetles;
- Native forests in the Catlins;
- Downlands of South Otago;
- Tussock grasslands;
- The alpine fellfields of the block mountains and Mount Aspiring National Park;
- The Sinclair wetlands;
- The Sutton salt lake community.

The biota of Otago is diverse and generally readily accessible to all. But the loss of any component of that biota would mean a reduction in the quality of Otago’s environment. A loss of a species through displacement, extinction or disease within the region would mean a reduction in diversity of Otago’s living environment and the reduction of future options.

Animal and plant pests, as well as hazards and inadvertent or even deliberate modification by humans, can threaten many of the species, ecosystems or the primary production systems of agriculture, horticulture, food gathering, etc. An ecosystem’s ability to survive is due to its resilience and this depends on its biological diversity. Similarly, Otago’s economy will be more resilient if there is a wide, diverse economic base to it. A monoculture crop is at the mercy of a single threat such as falling prices or disease. A farmer or forester who diversifies has a potentially more resilient and sustainable system.

In practical terms, diversity within biota generally improves its capacity to sustain itself in the long-term. However, the introduction of a pest, while temporarily increasing the diversity, would usually result in a net loss given time. For example the introduction of the rabbit to Otago (which increased biodiversity by one species) has been a key factor in the widespread modification of dryland ecosystems, reducing the nature and extent of palatable species.

Biodiversity is generally in decline as species become extinct. Otago makes an important contribution to national and global biodiversity. It is important to manage the dynamics of the region’s biota to ensure a long-term sustainable balance.

Biota = All Living Components of the Environment (excluding humans)
10.2 Roles of Different Agencies

All agencies and persons exercising functions and powers under the Resource Management Act have to recognise and provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna as a matter of national importance (Section 6). They are also required to have particular regard to the intrinsic values of ecosystems and the protection of the habitat of trout and salmon (Section 7). More specifically, the roles of the various agencies are:

10.2.1 Central Government
The Department of Conservation is responsible for the administration of land in Otago held under several statutes and for the purpose of protecting the habitats and interactions of species and the functioning of natural ecosystems. It is the role of the department to ensure, as far as possible, the survival of all indigenous species of flora and fauna in their natural communities and habitats, and the preservation of representative samples of all classes of natural ecosystems.

The Otago Fish and Game Council also reports to the Minister of Conservation and is the statutory management agency for sports fish (trout and salmon) and game birds (waterfowl and upland game) within the Otago region.

Other government departments such as the Ministry of Agriculture and Fisheries and Ministry of Forestry are closely involved with primary production and implementing policies to increase efficiency and reduce threats to productive biota.

The Otago Regional Council believes that all landowners and occupiers, whether the Crown or private, should have the same obligation to control pest animals and plants on the land under their control. However, in respect of the management of pests, Central Government agencies are not bound as other landowners are by the Biosecurity Act but can agree to be bound through Order in Council.

The Otago Regional Council will seek the binding commitment of Government agencies, through this mechanism, to the funding of pest management on their land.

10.2.2 Otago Regional Council
The Otago Regional Council has a lead role in the coordination of efforts to reduce the adverse effects on the biota of Otago. Much of this role has historically been focused on pests under legislation such as the Agricultural Pest Destruction Act 1967 and the Noxious Plants Act 1978. These responsibilities will now be carried out under the Biosecurity Act 1993 which replaces those previous pieces of legislation.

The Otago Regional Council also has other roles including those under the Resource Management Act 1991 that affect biota and its habitats, such as influencing riparian and river bed use and management, controlling waste discharges to ensure environmental damage is minimised and advocating appropriate landuse practices which maintain and enhance soil and water values.

10.2.3 Territorial Local Authorities
Through district planning, territorial local authorities have the opportunity to reduce the adverse effects of development on desirable habitats.

City and district councils have the responsibility, similar to landowners and occupiers, of controlling pest animals and plants on land they own or control, such as local reserves and roadside verges.
10.3 Issues

### 10.3.1 Otago’s significant indigenous vegetation and the significant habitats of indigenous fauna, trout and salmon may be threatened by the adverse effects of the use, development and protection of Otago’s natural and physical resources.

<table>
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<tr>
<th>Explanation</th>
<th>Objective</th>
<th>Policies</th>
<th>See Also Other Issues</th>
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<tr>
<td>Otago’s significant indigenous vegetation and areas which form significant habitat for indigenous fauna and trout and salmon, help form part of the character of Otago and are an integral part of the biodiversity of the region.</td>
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Urban and rural development can modify landscapes which may in some cases lead to reduction in remaining native vegetation or habitats for native species and trout and salmon. Within Otago, this can be seen in the values of areas such as:

- The wetlands of Lakes Waihola and Waipori which are affected by silt accumulation and eutrophication;
- Lake Hayes where the original ecosystem has been degraded as a result of nutrient inputs from the surrounding catchment;
- Red and snow tussock communities in Otago’s high country which are under pressure from farming practices;
- The indigenous forest in the Catlins, the only significant indigenous lowland forest on New Zealand’s east coast, which is under pressure from the creation of new pasture land.

Works undertaken to protect Otago’s resources from the effects of land instability or flooding can also result in a loss of indigenous habitats such as wetlands and the degradation of the habitat of wildlife such as trout and salmon.

The use, development and protection of Otago’s natural and physical resources can adversely effect these important ecosystems and habitats. The potential for adverse effects and the need to maintain and enhance such ecosystems and habitats wherever practicable is an important component of the management of these areas. As the retention of significant indigenous vegetation, and of significant indigenous fauna, is dependent on New Zealand habitat, the protection of both vegetation and habitat is recognised as a matter of national importance by the Resource Management Act.
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<td>10.3.2 Plant and animal pests threaten the diversity and productivity of Otago’s natural ecosystems and primary production.</td>
<td>Both plant and animal pests threaten existing natural ecosystems by displacing various species and areas of primary production by reducing the productivity of the land. Landscapes can be modified as a result of grazing, browsing or soil disturbance by animal pests and the displacement of native and traditional pasture species by plant pests. This can adversely affect recreational and tourism opportunities, as well as the ability of Otago’s communities to meet their own needs. The main animal pests of concern within Otago include rabbits in the semi arid areas of Central Otago, possums, goats and deer in bush areas and rooks in agricultural areas. The major plant pests within Otago include hawkweeds, nassella tussock, old mans beard, broom and gorse and, in the water bodies, the growth of lake weed which threatens indigenous habitats as well as the region’s tourism and recreation potential. In some areas, wilding conifers are also becoming a problem.</td>
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<td>10.3.3 The introduction of new species or the movement of existing species to new areas can threaten the diversity and productivity of Otago’s natural ecosystems and primary production.</td>
<td>New organisms can be deliberately or inadvertently introduced. Last century possums, rabbits, gorse and stoats were deliberately introduced. The stoat was brought in for rabbit control. This so-called “biological control” is more desirable to many than the use of pesticides, herbicides or shooting and trapping, however, there are potential problems associated with it. The introduction of thoroughly tested biological control agents may have advantages where there are no foreseeable adverse environmental effects. However, new introductions of animals, plants or other organisms designed to bring about a benefit to a region, district or property, may in fact prove to have harmful effects in the long-term on other species, both locally and elsewhere. This is because long-term cumulative effects are sometimes slow to show up or because the introduced species may take a while to find a niche to thrive in. An example is the stoat, which has had a profound effect on the country’s ground-dwelling birdlife.</td>
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<td>10.3.4 There continues to be a danger of native species being lost from Otago.</td>
<td>Some of Otago’s native species of flora and fauna are in danger of being lost from Otago as a result of the adverse effects associated with many activities carried out within Otago. For example there is evidence that Otago’s two species of giant skinks do not survive for long when their habitat is modified for exotic pasture establishment. The yellow-eyed penguin population on the coast of Otago is precarious and has been brought to that state at least partly as a result of the removal of breeding habitat. There are only a handful each of kiwi, kaka and blue duck in Otago, and the ranges of species such as yellowhead, kea, falcon and jewelled gecko are shrinking. There have already been local extinctions of plants, e.g. the early botanists reported that Otago’s special salt-tolerant flora once covered square kilometres but they now cover only square metres in a few places.</td>
<td>10.4.1</td>
<td>10.5.1</td>
<td>4.3.2 to 4.3.5 5.3.5 6.3.4 to 6.3.5 6.3.7 to 6.3.9 7.3.1 8.3.1 8.3.3 8.3.7 to 8.3.9 9.3.1 9.3.3 11.3.1 11.3.7 12.3.1 13.3.2 13.3.4 to 13.3.6 14.3.1 to 14.3.6 15.3.1</td>
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<tr>
<td>10.3.5 Otago’s biodiversity needs to be maintained.</td>
<td>Part of the Otago environment’s ability to withstand events such as long-term droughts is linked to its biological diversity. A greater diversity gives flora and fauna an improved ability to withstand adverse events because they are less dependent on any one variable. The cumulative loss of individual species can result in ecosystems losing the capacity to survive. Estuaries, wetlands and small lakes are particularly susceptible to the impacts of development. In Otago, saline soil communities have all but disappeared, and some tussock grasslands are threatened by wilding trees, hawkweeds and pasture grasses. The majority of wetlands have been drained and clearance of indigenous lowland forest goes on.</td>
<td>10.4.1</td>
<td>10.5.2</td>
<td>4.3.2 to 4.3.5 5.3.5 6.3.7 to 6.3.8 7.3.1 8.3.1 8.3.7 9.3.1 11.3.1 11.3.7 12.3.1 13.3.2 13.3.4 to 13.3.6 14.4.1 to 14.4.6 15.3.1</td>
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## 10.4 Objectives

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<tr>
<th>Objective</th>
<th>Explanation and Principal Reasons for Adopting</th>
<th>Policies</th>
<th>See Also Other Objectives</th>
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<tbody>
<tr>
<td><strong>10.4.1 To maintain and enhance the life-supporting capacity and diversity of Otago’s biota.</strong></td>
<td>Otago’s biota must be maintained and enhanced to ensure that the ecological diversity and the productive potential of the region is sustained for the benefit of Otago’s future generations. This diversity is in terms of the variability within species, between species and of ecosystems. Stability and balance depends on the size of habitats, their biodiversity and the health of all the things that make up the ecosystem. In productive systems, economic stability and balance comes about through maximising production while minimising the effects of threats to productivity such as diseases and pests. The enhancement of biodiversity in Otago’s biota systems will be achieved in consultation with Otago’s communities. The maintenance and enhancement of Otago’s ecosystems will require a recognition of the natural dynamics inherent in any ecosystem and any threats to this. These natural dynamics will result in natural change over time and must be taken account of.</td>
<td>10.5.1 4.4.2 to 4.4.5</td>
<td>10.5.2 5.4.1 to 5.4.2 10.5.3 6.4.2 to 6.4.5 10.5.4 6.4.8</td>
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<td><strong>10.4.2 To protect Otago’s natural ecosystems and primary production from significant biological and natural threats.</strong></td>
<td>Biological and natural threats include such things as plant and animal pests, diseases and natural hazards. The cultural, social and economic well being of Otago’s communities depends, in many respects, on a sound and diverse biota, both in terms of natural ecosystems and the primary productive base of the region. Primary production, tourism, recreation, mahika kai and landscape aesthetics are but some of the values that benefit.</td>
<td>10.5.1 4.4.2</td>
<td>10.5.2 4.4.4 to 4.4.5 5.4.1 to 5.4.2 10.5.3 6.4.2 to 6.4.4 10.5.4 6.4.6 6.4.8 8.4.1 to 8.4.2 8.4.5 11.4.1 to 11.4.2 11.4.4 13.4.4 14.4.1 to 14.4.6 15.4.1</td>
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<td><strong>10.4.3 To maintain and enhance the natural character of areas with significant indigenous vegetation and significant habitats of indigenous fauna.</strong></td>
<td>Section 6(c) of the Resource Management Act provides for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Indigenous vegetation is an important part of Otago’s natural character and landscapes and</td>
<td>10.5.1 4.4.2</td>
<td>10.5.2 4.4.4 to 4.4.5 5.4.2 to 5.4.3 10.5.3 6.4.3 to 6.4.6 10.5.4 6.4.8</td>
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<td>Objectives</td>
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<td>therefore an integral part of the region’s biodiversity and natural heritage. As is the case throughout New Zealand, most of Otago’s indigenous fauna is endemic to this country and some species, such as the Otago skink and the Cromwell chafer beetle, are found only in Otago. Such fauna has been threatened by the removal and modification of indigenous vegetation and habitat, and also by biological and natural threats. It is therefore important that those significant habitats which remain are protected, in order that indigenous fauna species may be sustained for future generations to experience and appreciate.</td>
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<td>8.4.2 to 8.4.5</td>
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10.5 Policies

10.5.1 To recognise and provide for the relationship Kai Tahu have with mahika kai in Otago through:
(a) Working towards eliminating the disposal of human wastes and pollution into or onto mahika kai; and
(b) Facilitating the maintenance and enhancement of access to places of traditional gathering of mahika kai; and
(c) Recognising the need to maintain and enhance mahika kai.

10.5.2 To maintain and where practicable enhance the diversity of Otago’s significant indigenous vegetation and the significant habitat of indigenous fauna, trout and salmon which are:
(a) Covered under a statute or covenant for protection; or
(b) Habitat or vegetation that support the maintenance or recovery of indigenous species that are uncommon or threatened with extinction (rare, vulnerable or endangered) regionally or nationally; or
(c) Vegetation that contains associations of indigenous species which are rare or representative regionally or nationally; or
(d) Vegetation that contains a substantially intact, uninterrupted ecological sequence of indigenous species which are rare or representative regionally or nationally; or
(e) Important for soil and water values or have functions in natural hazard mitigation; and to promote and encourage, where practicable, the retention, enhancement and re-establishment of indigenous ecosystems within Otago.

Explanation and Principal Reasons for Adopting

This policy recognises the importance of mahika kai to runanga and hapu and provides opportunity for enhancement of mahika kai and involves runanga and hapu in the decision making and resource consenting process.

Methods

| 10.5.1 | 5.5.1 |
| 10.6.1 | 5.5.3 to 5.5.7 |
| 10.6.2 | 6.5.1 to 6.5.2 |
| 10.6.3 | 6.5.4 to 6.5.10 |
| 10.6.4 | 7.5.1 |
| 10.6.6 to 10.6.16 | 8.5.1 to 8.5.7 |
| 10.6.6 to 10.6.16 | 9.5.1 to 9.5.4 |
| 10.6.6 to 10.6.16 | 11.5.1 to 11.5.2 |
| 10.6.6 to 10.6.16 | 12.5.2 |
| 10.6.6 to 10.6.16 | 13.5.1 to 13.5.10 |
| 10.6.6 to 10.6.16 | 14.5.1 to 14.5.8 |
| 10.6.6 to 10.6.16 | 15.5.1 to 15.5.2 |

See Also Other Policies

The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna is a matter of national importance (section 6 of the Resource Management Act) and is required of all persons exercising functions under the Act. The maintenance and enhancement of Otago’s indigenous vegetation and habitat is also considered to be of regional significance and essential to integrated management for reasons of sustainable management, intrinsic value and maintaining biodiversity.

While some of Otago’s significant indigenous ecosystems are already protected through having park or reserve status, or through the use of covenants or other voluntary methods, there are other areas that may warrant protection as well. These areas need to be identified in consultation with Otago’s communities and be given appropriate protection. Until the identification of Otago’s significant vegetation and significant habitats of indigenous fauna, trout and salmon is completed, careful consideration will be required to determine whether or not a particular area of vegetation or a particular habitat falls within the scope of Policy 10.5.2.

The enhancement of biodiversity in Otago’s indigenous ecosystems will be achieved in consultation with Otago communities.
10.5.3 To reduce and where practicable eliminate the adverse effects of plant and animal pests on Otago’s communities and natural and physical resources through:
   (a) Developing strategies to effectively manage Otago’s plant and animal pests; and
   (b) Educating about the responsibilities of all parties in the management of Otago’s plant and animal pests; and
   (c) Adopting the most practicable method of pest control while safeguarding the environment.

The Biosecurity Act 1993 establishes a framework within which plant and animal pests are to be managed, principally through the development of pest management strategies which will establish how particular plant and animal pests will be dealt with. The aim of animal and plant pest management is to keep Otago’s biota in a state of balance and minimise undesirable changes and threats. Where pests can be successfully eradicated, this is the best avenue to pursue. However, if eradication is not achievable, then population levels should be lowered to a level where the adverse environmental effects are insignificant or acceptable.

Community and land owner/occupier participation in establishing priorities, levels and funding arrangements is instrumental in bringing about cooperative arrangements and wider understanding of opportunities and objectives. Pest management can, in some instances, make use of nature. Threats may be reduced through biological control or by allowing natural succession, for example of native woody species through a gorse canopy which may result in the eventual eradication of the plant pest gorse, or allowing vegetation to shade out weeds, for example a closed tussock cover may reduce hieracium vigour. Methods using native species may have other benefits, such as biodiversity, landscape and aesthetic benefits.

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<th>Policies</th>
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<th>Methods</th>
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<td>10.5.3</td>
<td>To reduce and where practicable eliminate the</td>
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<td>adverse effects of plant and animal pests on</td>
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<td>(a) Developing strategies to effectively</td>
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<td>manage Otago’s plant and animal pests; and</td>
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<td>(b) Educating about the responsibilities of</td>
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<td>all parties in the management of Otago’s plant</td>
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<td>and animal pests; and</td>
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<td>(c) Adopting the most practicable method of</td>
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<td>pest control while safeguarding the</td>
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<td><strong>10.5.4</strong> To reduce the adverse effects associated with introductions and movements of undesirable new species into and around Otago through:</td>
<td>Both accidental and planned introductions of species into Otago can have adverse effects on existing flora and fauna. Accidental introductions of new species, such as Lagarosiphon to Otago’s water bodies, have the potential to have lasting effects. Every person needs to be made aware of the potential for damage to Otago’s primary productive base and natural ecosystems from the introduction of undesirable species. Where undesirable introductions do occur, there is a need to have an ability to be able to respond quickly and effectively in an effort to eliminate the threat posed by those introductions. Eradication, where possible, is the ultimate aim.</td>
<td>10.6.2</td>
<td>5.5.5 to 5.5.6</td>
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<td>(a) Promoting and educating about methods to reduce the spread of plant and animal pests; and</td>
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<td>10.6.4</td>
<td>8.5.5 to 8.5.6</td>
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<td>(b) Being able to respond quickly to any new introduction or movement; and</td>
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<td>(c) Eradicating, where practicable, undesirable new species.</td>
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<td>10.6.7</td>
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10.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

10.6.1 Take into account Kai Tahu cultural values in the management of Otago’s biota through:
   (a) Using and recognising iwi resource management plans as a basis for consultation; and
   (b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s biota.

The methods to be used by the Otago Regional Council include the following:

10.6.2 Develop and implement pest management strategies under the provisions of the Biosecurity legislation.

10.6.3 Consider the development of policies and other means including rules where appropriate, within the Regional Plan: Land, Regional Plan: Water and Regional Plan: Coast to protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna, trout and salmon.

10.6.4 Consider including conditions on resource consents or consider declining such consents as necessary to protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna, trout and salmon and/or minimise the threat of pest and weed invasion.

10.6.5 Identify and protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna, trout and salmon, in consultation with relevant agencies and with Otago’s communities.

10.6.6 Initiate, support and encourage research and monitoring programmes to provide information on Otago’s biota diversity and condition and pest issues and solutions.

10.6.7 Promote and encourage, where practicable, the retention, enhancement and re-establishment of indigenous vegetation and habitat within Otago.

10.6.8 Consult with Otago’s communities regarding the management of Otago’s biota.

10.6.9 Advocate to Central Government on biota management issues of importance to Otago.

10.6.10 Recognise and encourage community groups that promote:
   (a) The effective management and control of plant and animal pests; and
   (b) The re-establishment of vegetative areas; and
   (c) The protection of significant indigenous vegetation and significant habitat of indigenous fauna, and trout and salmon.

10.6.11 Promote and educate about methods to reduce the spread of plant and animal pests.

10.6.12 Promote and encourage interagency liaison and cooperation and the development of protocols to ensure integrated and coordinated management of Otago’s biota.
10.6.13 Consider and assess environmental impacts when developing means necessary to protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna, trout and salmon and to effectively manage and control pests.

10.6.14 Use education programmes to improve community awareness and understanding of biota issues and sustainable management in Otago.

10.6.15 Provide information on the adverse effects associated with activities that impact on biota.

10.6.16 Promote Codes of Practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of activities on Otago’s biota.

Methods which may be used by Otago’s territorial local authorities include the following:

10.6.17 Consider including conditions on resource consents or consider declining such consents as necessary to protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna, trout and salmon.

10.6.18 Develop controls within district plans necessary to protect Otago’s significant indigenous vegetation and significant habitat of indigenous fauna and of trout and salmon.

10.6.19 Meet their responsibilities as a landowner or occupier for the control of plant and animal pests.

10.6.20 Promote and encourage, where practicable, the retention, enhancement and re-establishment of indigenous vegetation and habitat within the district.

Central Government Agencies will continue to be asked by the Regional Council to:

10.6.21 Assist in the identification of Otago’s significant indigenous ecosystems.

10.6.22 Assist in the management of Otago’s plant and animal pests.

10.6.23 Meet their responsibilities as a landowner or occupier for the control of plant and animal pests.

Explanation and Principal Reasons for Adopting

All of these methods are aimed at the sustainable management of Otago’s resources, whether through the management of threats or through the protection of indigenous biota. The methods deal with threats to living resources, as well as biota threatening other natural and physical resources. The most important aspect of this is to do with prioritising and focusing efforts to deal with the significant threats. These efforts depend on how people perceive the significance or acceptability of the many changes that take place in Otago’s biota. It is appropriate for the Regional Council to take a lead role in the establishment of such priorities and the coordination of research and monitoring to ensure effectiveness, as well as the clarification of the various roles of territorial local authorities, and regional and central government agencies. The Regional Council can take a lead role in the lobbying of Central Government initiatives that could affect regional biota.
10.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

10.7.1 Otago’s people and communities benefit from having a healthy diversity of biota within the region.

10.7.2 The management of Otago’s biota takes into account the values of manawhenua.

10.7.3 Otago’s biodiversity is maintained or enhanced.

10.7.4 Otago’s significant ecosystems and endangered species are protected.

10.7.5 The adverse effects of Otago’s plant and animal pests are reduced or eliminated.

10.7.6 The life-supporting capacity of Otago’s ecological communities is safeguarded.

10.7.7 Ecological, amenity and intrinsic values associated with Otago’s ecosystems are protected.
11 Natural Hazards
11.1 Introduction

Natural hazards are those naturally occurring events that threaten human life, property or other aspects of the environment. Human activities may aggravate or even cause the hazards (for example where inappropriate land management adversely affects stability or runoff characteristics) or they may have no effect.

Section 2 of the Resource Management Act 1991 defines natural hazards as:

“Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire or flooding) the action of which adversely affects or may adversely affect human life, property or other aspects of the environment”.

The types of events or processes that give rise to natural hazards in Otago include the following.

- Atmospheric (weather effects such as floods, high winds, snowfalls and droughts, el Nino conditions or windborne smoke and large fires).
- Marine (tides, tsunami, wave action, storm surge, sea level rise).
- Seismic (crustal movement causing earthquakes).
- Land (unstable geology or fragile soils leading to instability or erosion and sediment release).
- Coastal processes (eg. sediment blocking a river mouth).
- Vegetation (insufficient ground cover leading to exposure of soils or excess dry matter providing conditions for a fire).
- Extra-terrestrial factors (eg. comets, meteorites).
- Solar conditions (eg. ultra-violet radiation).
- Noxious invasions (eg. diseases, pests, plants etc carried by wind or ocean currents).

They may occur in isolation from one another or interact and combine to create a greater hazard. They may also be visible from the outset or remain hidden until their effects are felt. The Abbotsford land slip of 1979 is an example of a natural hazard which resulted from a number of factors including underlying geology, weather effects and land disturbance.

Common natural hazards in Otago include floods, droughts and grassland fires. Floods are a very serious threat to Otago people and communities, and it is essential to avoid or mitigate the threat through appropriate means including defenses against water which need on-going maintenance. It is also important however to consider the adverse impacts of flood mitigation works on natural and physical resources and to avoid, remedy or mitigate these impacts.

It is the impact of the events or processes on human activities or on the Otago environment which creates a hazard situation. A rainstorm in Otago which results in flooding within the region is a hazard, whereas a rainstorm in a remote unvisited part of Fiordland is not perceived as a hazard. When the natural event affects something of value to us, it is thought of as a hazard. Human activities have the potential to aggravate and worsen the effect or magnitude of some natural events. For example, a Fiordland-type rainstorm on land no longer protected by the type of thick vegetation found in Fiordland could result in hundreds of years of soil establishment being washed away, destroying the economic base of a community.

Natural hazards are a factor to be considered in terms of all land use options, and are affected by the characteristics and behaviour of natural and physical resources. It is essential to ensure that recognition be given to the interactions that occur between human
land use activities and natural hazard occurrence when any plans are prepared that affect land use, such as district plans.

The risk of a natural hazard event or process can be assessed on how likely it is to occur and on its magnitude or size. An event of low probability but high impact (such as a tsunami in the densely populated South Dunedin area) may be more disastrous to Otago’s well being than an event of high probability but low impact (such as a flood in a remote, high rainfall area). The ability to predict the occurrence of any particular event, combined with an understanding of its possible magnitude, helps to determine our response to it. Our response to the likelihood of a natural hazard occurring can take one of three forms:

1. We can avoid the hazard by separating the conflicting elements. An example of this would be the movement of people and buildings away from areas under threat of flooding or coastal erosion or to prohibit development in those areas.

2. We can mitigate and lessen the impact of the hazard by reducing its effects. An example of this would be the construction of floodbanks to contain floodwaters in times of high flow.

3. We can endure the event and clean up and restore afterwards. Examples of this would be the preparation of civil defence arrangements (civil defence and emergency services) by communities to help in responding to any event or people taking out individual insurance policies.

The choice an individual makes depends on how they perceive the hazard and how much they accept it or are prepared to tolerate it. Choice is very important in the consideration of the degree of risk people will accept. People build or farm in certain places because of the benefits involved. For example, flood-prone river and coastal plains are often the most fertile lands or the most convenient places for transport networks. Thus people make the choice, weighing up the benefits of a certain place against the risk of being threatened by a natural hazard event. For example, a community decision was made that the West Otago township of Kelso had too high a degree of flood risk for any individual to remain, resulting in the community effectively relocating.

While the reasons for particular events and hazards may be well documented, they may not be understood with certainty. The hazard management problem for the region is in predicting, then preventing, controlling or avoiding the actual phenomenon. The method or combination of methods used will depend on the nature and extent of the risk and its magnitude and on the costs and benefits to the community. For example, weather-related events are able to be predicted to a degree by forecasters and the region is able to prepare itself for an event like the 1980 Taieri flood or a worsening of the dry conditions in North Otago. Predictions can be made about the probability and extent of damage from a landslide into Lake Dunstan or of a certain sized flood occurring in the next ten years. However, many of the gradual processes that result in risks to life, property and Otago’s heritage may go undetected, unpredicted or unassessed.
11.2 Roles of Different Agencies

Under the Resource Management Act, responsibility for controlling the use, development or protection of land for the purposes of avoiding or mitigating natural hazards is jointly held by the Otago Regional Council and Otago’s territorial authorities. Territorial local authorities are also responsible for subdivision approval. Land stability and the ability to protect that land from the consequences of land instability are matters that are considered by those authorities. At the same time, both the Otago Regional Council and Otago’s territorial authorities have responsibilities under the civil defence legislation and a number of specific responsibilities provided for under other legislation including:

- The Soil Conservation and Rivers Control Act 1941. Regional Councils are responsible for conserving soil resources, for preventing damage by erosion and for providing flood protection. This may involve investigating, constructing, maintaining and reviewing river and flood control schemes, which protect communities from floods and soil conservation work to protect land from erosion hazards.

- The Building Act 1991. Territorial local authorities have to be able to provide a project information memorandum relating to a specific site, which contains details of any natural hazards affecting the site. This is also required under the Local Government Official Information and Meetings Act 1987 as a Land Information Memorandum. A “restrictive covenant” can also be registered on the land title, which can inform prospective buyers of a land instability problem.

Other agencies and groups are also involved in the planning for and response to natural hazards, including emergency services, the Electricity Corporation of New Zealand, the Red Cross and volunteer organisations. A coordinated and cooperative approach is required to ensure that Otago’s communities are ready and able to respond to any natural hazard.

Section 62 (1) (ha) of the Resource Management Act requires that the Regional Policy Statement state the responsibilities of local authorities for the control of the use of land for the avoidance or mitigation of natural hazards. Where no responsibility is identified, the section states that it is the regional council who shall retain primary responsibility. Within the Otago Region, the following responsibilities for the control of the use of land will apply.

11.2.1 Natural Hazard Investigation

The Otago Regional Council will investigate and provide information to all agencies on regionally significant natural hazards such as flooding, droughts, coastal hazard zones, soil erosion and land instability problems. The Regional Council will make available information it holds relating to natural hazards.

Territorial local authorities are required to prepare information on site specific and localised natural hazards that may affect any component of Otago’s built environment under the Building Act. They will be the first point of contact for initial public enquiries regarding individual sites or areas.

11.2.2 Natural Hazard Avoidance or Mitigation by Control of Land Use

Territorial Local Authorities

Each territorial local authority will be responsible for the development of objectives, policies and rules relating to the control of the use of land:

- That is affected by a natural hazard in its district, and
Where the effect of development could be to exacerbate a natural hazard situation. Means that may be used to achieve this include district planning methods such as special hazard zones or rules, general building or development controls or criteria, or designations; and by assisting with establishing responsibilities for controlling land use for natural hazard avoidance or mitigation.

Otago Regional Council

Within the Regional Plan: Land, the Otago Regional Council will develop objectives, policies, rules and other methods, as appropriate, relating to the control of the use of land for the avoidance or mitigation of natural hazards as follows:

(i) The preparation of objectives and policies with respect to:
- hazard mitigation works which may have effects of regional significance;
- land that is affected by:
  - inundation;
  - erosion;
  - sedimentation;
  - landslip or subsidence;

(ii) The preparation of objectives, policies and methods with respect to:
- hazard mitigation works which may impact on habitat values and natural character; and
- any natural hazard issue crossing a territorial local authority boundary, or Mean High Water Springs;

(iii) The preparation of objectives, policies, rules and other methods with respect to activities that may exacerbate:
- inundation;
- erosion;
- sedimentation;
- landslip or subsidence.

Responsibilities for Land Use Controls Related to Natural Hazard Exacerbation

Determination of specific roles and responsibilities concerning the exacerbation of natural hazards will need to be carried out in response to each specific natural hazard, in order to ensure the most efficient and effective mechanisms are used. This may be facilitated through regional plans that address natural hazards, such as those for land, water and coast. The allocation of particular land use control responsibilities for the exacerbation of particular natural hazards will provide the opportunity to take into account factors which may include the following:
- the capability of the various local authorities;
- acceptability of responsibility;
- efficiency factors;
- the avoidance of duplication;
- the minimising of community costs;
- the scale of effects.

11.2.3 Natural Hazard Avoidance or Mitigation by Community Works

The Otago Regional Council will enable community responses to flood hazard where necessary, subject to the Resource Management Act’s requirements. This may involve the Otago Regional Council carrying out works or services, subject to the Resource Management Act, to avoid, remedy or mitigate effects of natural hazards such as maintaining and reviewing river control schemes, involvement with the construction of new schemes, and assisting in the timely carrying out of river works.
11.2.4 Natural Hazard Response

The Otago Regional Council will prepare and update a regional civil defence plan in accordance with this Regional Policy Statement and civil defence legislation.

Territorial local authorities will prepare and update district civil defence plans and take full first-line responsibility for dealing with the impact of a disaster in their area, in accordance with this Regional Policy Statement and civil defence legislation.
### 11.3 Issues

#### 11.3.1 Natural hazards have the potential to adversely affect Otago’s communities and resources.

Natural hazards can from time to time threaten the communities and natural resources of Otago. Natural hazards that have occurred in Otago in the past include adverse weather events such as droughts, floods and heavy snow falls, coastal erosion, landslips and other forms of instability, earthquakes and fires. The potential for natural hazards to occur must be recognised and understood in the management of Otago’s communities and resources.

#### 11.3.2 There is a need for improved public awareness of natural hazard risks, causes and response measures.

Self-reliance and preparedness would be improved if the public had a better understanding of natural hazard processes and events and the ways of dealing with them. A lack of such understanding can lead to a failure to recognise hazards and factors that could worsen them and to prepare adequately for them.

#### 11.3.3 The values and expectations of Otago’s communities over acceptable levels of risk need to be incorporated into natural hazard planning and response.

Rather than relocate away from a known natural hazard (for example an area that is prone to flooding), some individuals may prefer to put up with some degree of risk associated with that particular hazard, accepting that they are never totally safe from it. This may be because of social, economic and cultural benefits and activities that can be pursued by the community in those places, which the individual or community feels outweigh the risks associated with the areas. Hazard management should take into account the level of risk that the individual or community is prepared to accept when considering hazard planning or response measures. Decisions by individuals on where to locate their activities should take into account the potential cost for the community should a hazard event occur.

### Table

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</table>
11.3.4 There are risks to existing developments which can only be dealt with through mitigation or response means.

Where a hazard situation is identified and a development such as a building or a farm is already in place, the means to deal with the problem involves such work as establishing or maintaining structures or vegetation to afford some protection or perhaps the taking out of insurance policies to offset losses. Alternatively the hazard can be avoided by physically moving the structure or activity out of its way.

11.3.5 There are risks associated with new developments in hazard prone areas that should be avoided before the development is established.

New developments are often proposed with inadequate information on hazards, while some of the most desirable locations for development may occur in the most hazard-prone places. New subdivisions can avoid the effects of hazards by avoiding hazard prone areas completely or, if the benefits of a location outweigh the protection costs, by ensuring that buildings:

- Are designed to be secure (for example ensuring floor heights are above flood level); or
- Are relocatable so that they can be moved if threatened by a hazard, such as land movement or coastal inundation; or
- Are provided with other protection systems (for example water storage dams for fighting forest fires).

Alternatively, new developments may be built where adequate knowledge exists of the risk posed by the hazard, and where the developer accepts all risk of potential adverse effects on the development.

11.3.6 The intensity and frequency of natural hazards can be increased through inappropriate human activities.

Some activities which use Otago’s natural and physical resources can result in the increased intensity and frequency of natural hazards. Examples of this include the effect of landuse activities on water retention characteristics of land areas which may worsen the downstream situation.
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<td>11.3.7 Physical works for hazard mitigation and other hazard mitigation measures can have significant adverse effects on natural and physical resources.</td>
<td>In the past, protection against natural hazards, particularly flooding, has tended to focus on physical works and these works have in some instances had significant adverse effects on natural ecosystems and landscape values; for example, the destruction of the habitat of indigenous species and the loss of mahika kai and of the natural character of river systems through works such as channelling and stopbank construction. Although it is important to protect people, communities, and resources from the adverse effects of natural hazards, it is also important that the impacts of protection mechanisms be taken into account in order that they can be avoided, remedied or mitigated.</td>
<td>11.4.4</td>
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11.4 Objectives

11.4.1 To recognise and understand the significant natural hazards that threaten Otago’s communities and features.

In natural hazard management there is first a need to identify and assess potential threats from hazards. Once identified planning and response mechanisms can be put in place to deal with their potential and actual adverse effects. Flood-plain mapping and coastal hazard and drought hazard assessment are examples of this type of identification process.

11.4.2 To avoid or mitigate the adverse effects of natural hazards within Otago to acceptable levels.

The potential adverse effects of a natural hazard, once identified, may be able to be avoided or at least mitigated. The system of floodbanks in the lower Clutha and Taieri River areas are designed to avoid or mitigate the adverse effects of heavy rainfalls by ensuring that the waters do not flood adjacent land. Wherever practicable, natural hazards should be avoided or mitigated to levels acceptable to Otago’s communities.

11.4.3 To effectively and efficiently respond to natural hazards occurring within Otago.

Where an unacceptable risk cannot be reduced or avoided, preparations must be made to deal with the event should it occur. Civil defence plans, local adverse climatic response plans and individual plans are ways of responding to a variety of natural hazards.
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<tr>
<td>11.4.4 To avoid, remedy or mitigate the adverse effects of hazard mitigation measures on natural and physical resources.</td>
<td>The design of natural hazard protection measures should take into account the potential impact of those measures upon natural and physical resources, including ecological values, habitat and natural character, and seek to avoid, remedy or mitigate such impacts.</td>
<td>11.5.1 11.5.2</td>
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11.5 Policies

11.5.1 To recognise and provide for Kai Tahu values in natural hazard planning and mitigation.

Kai Tahu have a role in the determination process for mitigating natural hazards. This role is consistent with the practice of kaitiakitanga and acknowledges Kai Tahu concern over the possible loss of cultural and spiritual sites from the occurrence of natural hazards, as well as from the effects of natural hazard avoidance or mitigation.

11.5.2 To take action necessary to avoid or mitigate the unacceptable adverse effect of natural hazards and the responses to natural hazards on:
(a) Human life; and
(b) Infrastructure and property; and
(c) Otago’s natural environment; and
(d) Otago’s heritage sites.

The Resource Management Act requires local authorities to control landuse as necessary to guard the environment against the effects of natural hazards. This includes consideration of effects on new and existing developments and on places where people have chosen to locate in spite of a hazard, as well as on components of the natural environment and their intrinsic values.
11.5.3 To restrict development on sites or areas recognised as being prone to significant hazards, unless adequate mitigation can be provided.

- Avoiding developments in hazard areas reduces the risks and costs associated with them. However, adequate geographical information databases which identify hazard areas are required so that communities and potential developers can be made aware of risks.
- Once identified, a variety of methods can be used to influence development in those areas or, through the use of Land Information Memoranda, adequately informed land owners can choose to accept responsibility for the natural hazard at their own risk.

11.5.4 To avoid or mitigate the adverse effects of natural hazards within Otago through:

(a) Analysing Otago’s natural hazards and identifying their location and potential risk; and
(b) Promoting and encouraging means to avoid or mitigate natural hazards; and
(c) Identifying and providing structures or services to avoid or mitigate the natural hazard; and
(d) Promoting and encouraging the use of natural processes where practicable to avoid or mitigate the natural hazard.

- A comprehensive hazard management programme to deal with threats to new and existing development and valued features of the environment would involve all of these activities. It would require maintenance of information systems, protection works and services. Protection works need not be structures, but can comprise vegetation management to provide land and streambank stability, shelter belts and sediment traps. Measures for the avoidance of drought hazard may include/involve land management techniques such as increasing soil organic content, shelter belts and shade trees, as well as the storage of water. The use of mitigation measures using natural systems such as tree planting is likely to have additional benefits such as improving aesthetic or wildlife values.
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| **11.5.5** To provide a response, recovery and restoration capability to natural hazard events through:  
(a) Providing civil defence capabilities; and  
(b) Establishing procedures and responsibilities to ensure quick responses to any natural hazard event; and  
(c) Identifying agency responsibilities for assisting recovery during and after events; and  
(d) Developing recovery measures incorporated into civil defence plans. | Maintaining such a hazard response framework will ensure the smooth operation of services that would involve many different agencies and volunteer groups. For example, it is vital to reopen communication links such as roads without delay. Such a hazard response framework would need to include rescue and recovery plans for people and stock in the rural areas. | **11.6.4**  
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15.5.1  
15.5.2 |
| **11.5.6** To establish the level of natural hazard risk that threatened communities are willing to accept, through a consultative process. | To be effective, this policy requires a well informed community to make its own choices, which depends on accurate hazard information and two-way communication. Such consultation would provide knowledge for targeting of appropriate works. | **11.6.1**  
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9.5.5 to 9.5.6  
14.5.1 to 14.5.8  
15.5.1  
15.5.2 |
| **11.5.7** To encourage and where practicable support community-based responses to natural hazard situations. | All agencies with functions related to natural hazards should promote community-based responses to natural hazard situations, involving individual land owners and occupiers where possible. Education to promote awareness and self-reliance will help individuals and local communities recognise hazards and how their own activities may assist, worsen or even inadvertently create a hazard. Through this process a community can inform others about the degree to which they choose to accept a certain level of risk. Expertise from the agencies and from the individuals on the spot needs to be brought together to ensure all ways of reducing the effect of a hazard are investigated. | **11.6.1**  
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6.5.7 to 6.5.9  
8.5.7 to 8.5.8  
9.5.1  
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14.5.1 to 14.5.8  
15.5.1  
15.5.2
11.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

11.6.1 Take into account Kai Tahu cultural values in the management of Otago’s natural hazards through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s natural hazards.

The methods to be used by the Otago Regional Council include the following:

11.6.2 Identify and analyse the threat from regionally significant natural hazards, including hazards that cross territorial local authority or regional council boundaries, and make that information publicly available through the use of hazard registers.

11.6.3 Consider the development of policies and other means, including rules where appropriate, within the Regional Plan: Land, Regional Plan: Water and Regional Plan: Coast to avoid or mitigate natural hazards.

11.6.4 In consultation with territorial local authorities, determine specific roles and responsibilities for each natural hazard situation, in order to ensure the use of the most efficient and effective mechanisms for avoidance or mitigation of the hazard.

11.6.5 Consider including conditions on resource consents or consider declining such consents as necessary to avoid or mitigate the threat of natural hazards.

11.6.6 Investigate, construct, maintain and review river and flood control schemes and coastal protection works which protect communities from flood and erosion hazards.

11.6.7 Promote and encourage the revegetation and the retention and enhancement of vegetative cover and the retention and enhancement of wetland areas, as natural methods of managing natural hazards.

11.6.8 Provide a flood warning capability where required within Otago.

11.6.9 Maintain and review as required communication channels for alerting those at risk from flooding.

11.6.10 Promote and encourage cooperation between agencies and groups involved in natural hazard planning and response and the development of protocols.

11.6.11 Initiate, support and encourage research and monitoring programmes to provide information on Otago’s natural hazards.

11.6.12 Recognise and encourage community groups to develop community based responses to natural hazard situations.

11.6.13 Consult with Otago’s communities regarding the management of Otago’s natural hazards.
11.6.14 Advocate to Central Government on natural hazard issues of importance to Otago.

11.6.15 Promote and encourage interagency liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s natural hazards.

11.6.16 Consider including conditions on resource consents or consider declining such consents as necessary to avoid, remedy or mitigate the adverse effects of works for hazard mitigation.

11.6.17 Use education programmes to improve community awareness and understanding of natural hazard issues and sustainable management in Otago.

11.6.18 Provide information on the adverse effects associated with natural hazards and their management.

11.6.19 Promote Codes of Practice agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to assist in the management of Otago’s natural hazards.

Methods which may be used by Otago's territorial local authorities include the following:

11.6.20 Identify and analyse natural hazard threats related to particular sites or developments and make that information publicly available through the use of hazard registers. Compile this information from existing sources or where such information is unavailable for specific sites or developments, the territorial local authority may require developers to supply this information.

11.6.21 Consider including conditions on resource consents or consider declining such consents as necessary to avoid or mitigate the threat of natural hazards.

11.6.22 Provide controls within district plans necessary to avoid or mitigate the threat of natural hazards.

Explanation and Principal Reasons for Adopting

This mix of methods relies on open consultation and the ready availability of clear information for landowners and potential developers. Much of the above is already implemented to a degree by the various agencies. The achievement of greater consistency will lend certainty to hazard management and improve efficiency. Money or effort would not be spent on work resulting in an unnecessarily high degree of protection. The use of mitigation measures using natural systems will have additional benefits such as to aesthetic or wildlife values.

Recovery measures must address arrangements for reopening communication networks when they are breached by a hazard event. For example, territorial local authorities and Transit New Zealand respond quickly to reopen roads they are responsible for. A reopened road is an essential prerequisite for subsequent recovery measures to be brought to those in need.
11.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

11.7.1 Human life, infrastructure, property, heritage sites and the natural environment are protected from natural hazard events to a level acceptable to the community.

11.7.2 The planning for and response to Otago’s natural hazards takes into account the values of manawhenua.

11.7.3 Structures and services established to deal with hazards are maintained and enhanced where necessary.

11.7.4 The awareness of Otago’s communities is raised about the location, risk and likely effects of natural hazards.

11.7.5 Otago communities at risk from natural hazards have developed their own response plans.
12 Energy
12.1 Introduction

Otago is a hydro-electric power producing region and a major ‘exporter’ of electricity in New Zealand today. The two large existing hydro-electric schemes in the region, Roxburgh (320 MW) and Clyde (432 MW), combined with the large number of other medium and small size schemes, bring the region’s total capacity to 859 MW. However, only partial exploitation of Otago’s hydro-electric resources has occurred to date and subject to water allocation decisions, considerable potential remains for further development of the renewable water resource.

The Electricity Corporation of New Zealand (ECNZ) is conducting ongoing investigations into further stations at Lake Hawea outlet, Luggate and Queensberry on the upper Clutha River and at Tuapeka Mouth on the lower Clutha River. Electricity supply authorities and other developers may also have options for further hydro-electric development in the region. The potential total capacity of hydro-electric schemes in Otago is estimated at 2,222 MW, of which 1,020 MW is considered by the Ministry of Commerce to have “attractive” potential. As such, 13% of New Zealand’s most “attractive” remaining hydro resource potential is located in Otago (see Figure 6).

Otago also has a range of other conventional energy resources which could offer future development opportunities (eg. the sub-bituminous coal and lignite fields at Kaitangata, St Bathans and Roxburgh). Major coal resources exist in the Otago region and this energy is important to local industry and consumers. However, less conventional energy sources such as biogas, solar, cogeneration and wind power are increasingly recognised as acceptable long-term energy sources which, for Otago, appear likely to offer more promising opportunities and lower associated environmental impacts (eg. the potential wind farm site of Rocklands in inland Otago).

Energy use is understood to be increasing in Otago with recent sales figures from the region’s four electricity supply authorities showing steady increases. Demand patterns for non-renewable energy sources such as petrol are similarly growing. This is

![Figure 6 Existing and Potential Hydro-Electric Resources in New Zealand](Source: Hydro Resources of New Zealand, Resource Information Report 7, Ministry of Commerce, Wellington, April 1990)
comparable with national trends in energy use which suggest that there has been a rising use of energy per unit of gross domestic product (ie. rising energy intensity). This is a direct result of investment in energy intensive industries such as tourism, meat and dairy processing, aluminium smelting, forestry and petrochemicals, and the substitution of energy for labour. This investment reflects the changes to our economy as we add more value to our primary products prior to export. The Parliamentary Commissioner for the Environment tabled a report in Parliament in 1992 which referred to New Zealand’s present energy use as inefficient and unsustainable and as a problem which is getting worse. However, opportunities exist for improving the efficiency of energy use.
12.2 Roles of Different Agencies

The production and use of energy (including the development of energy resources) within New Zealand is largely determined by the free market. Central Government planning or control is minimal.

At the regional and local level, local authorities are responsible, under the Resource Management Act, for promoting the sustainable and efficient management of Otago’s natural and physical resources. The Act defines natural and physical resources as including energy.

The powers available under the Resource Management Act to directly control the production and use of energy and the development of the region’s energy resources, are limited. The adverse effects of energy production, use, transmission and distribution are considered, along with the effects of all activities utilising the region’s resources, within appropriate chapters of this Regional Policy Statement, including manawhenua, land, water, air, coast and the built environment.

The roles of the various agencies are:

12.2.1 Central Government

The Energy and Resources Division of the Ministry of Commerce collects and collates information as required by statute and provides policy advice to Government on matters related to energy. It also undertakes energy forecasting.

The Energy Efficiency and Conservation Authority was established in June 1992 as an independent agency within the Ministry of Commerce. The Authority’s role is to promote the conservation of energy resources. The Authority does not have a regulatory role.

12.2.2 Otago Regional Council

Otago Regional Council has a responsibility to promote the sustainable and efficient management of the region’s resources, including energy resources. As such, the Council is able to advocate for and educate and promote such things as clean renewable energy sources and energy efficient practices in order to ensure they have a central role in Otago’s future.

The Regional Council is also responsible for considering the adverse effects of energy production, use, transmission and distribution on Otago’s land, water, air, coastal and built environment resources. It does this through considering applications for resource consents to utilise those resources and through establishing policies and plans.

12.2.3 Territorial Local Authorities

Otago’s territorial local authorities are also responsible for promoting the sustainable and efficient management of natural and physical resources and are therefore able to educate about, advocate and promote about the sustainable and efficient production and use of energy. They also manage landuses and are able to make decisions that result in the avoidance, remedy or mitigation of the adverse effects of energy production, use, transmission and distribution.
12.3 Issues

12.3.1 The production and use of energy can have both positive and negative effects on Otago’s communities and resources.

Explanation

The production, use, transmission and distribution of energy is often associated with undesirable environmental effects, including adverse effects on public health. At the extreme, nuclear power generation holds the risk of Chernobyl-type accidents. With hydro-electric developments, there is the risk of disasters similar to that of Longerone, Italy, where two thousand people were killed in 1962 when a mountainside fell into the Vaiont reservoir and flooded the valley.

The more commonly cited adverse effects of hydro-electric power development include effects on the natural character of river systems, flora and fauna and local communities. Unmodified and unregulated rivers are a diminishing resource. Hydro development can interfere with or prevent other uses and values of a river, such as scenic values, fish use, wildlife habitats, recreational uses, irrigation or reticulation, tourism features and opportunities and mana-wenhaua values. Sediment balances can be altered and ecological effects may extend to coastal environments. Rigorous environmental analysis is a component of any new energy project proposals and this assists in the sustainable management of affected land, water and other resources.

The use of fossil fuels is associated with most air pollution (90% of carbon dioxide emissions in New Zealand are energy related), some solid waste contamination and water pollution incidents. Such pollution can adversely affect the public health of communities.

Undesirable environmental effects are also associated with the development of less conventional power sources. Bacteriological and chemical pollution, climatic change and aesthetic and noise intrusion are possible effects.

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See Also Other Issues

4.3.1 to 4.3.6
5.3.2
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6.3.7 to 6.3.8; 6.3.10
7.3.1 to 7.3.2
8.3.1
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10.3.1
10.3.4 to 10.3.5
11.3.6 to 11.3.7
13.3.5
14.3.1 to 14.3.6
15.3.1
At the same time the production, use, transmission and distribution of energy and the development of energy resources has positive impacts. The provision of energy to sustain lifestyles enjoyed by the region’s population is one example. Energy developments have also been found to create new habitats, contribute to landscape values, create employment opportunities and recreational amenities, improve community facilities, create irrigation opportunities and provide flood reduction benefits.

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<tr>
<td>12.3.2 Otago’s dependence on non-renewable energy resources is unsustainable in the long term.</td>
<td>Continued dependence on non-renewable sources of energy, such as oil, gas and coal, is unsustainable in the long-term. The development of and transition to renewable minimum impact energy sources will allow future generations to meet their energy needs with least adverse environmental impact.</td>
<td>12.4.2</td>
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<td>14.3.1 to 14.3.6</td>
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<td>12.3.3 Wasteful and inefficient energy use occurs in Otago.</td>
<td>The amount of energy wasted in Otago, both in terms of domestic consumption and commercial and industrial use, can be reduced by adopting and improving energy efficient practices. There is a potential and willingness to achieve more efficient use of energy in Otago.</td>
<td>12.4.2</td>
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<td>12.3.4 Long-term regional benefits from energy developments have not been fully realised in Otago.</td>
<td>The Otago community has borne a great deal of the flow-on environmental costs of hydro electric developments without necessarily being adequately compensated.</td>
<td>12.4.2</td>
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<td>14.3.1 to 14.3.6</td>
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- 12 ENERGY
### 12.4 Objectives

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<tr>
<td>12.4.1 To avoid, remedy or mitigate the adverse effects on Otago’s communities and environment resulting from the production and use of energy.</td>
<td>This objective recognises that the production and use of energy, and the development of Otago’s energy resources, may cause adverse effects, and aims to allow for the avoidance, remedy (including compensation) or mitigation of such effects in order that the quality and life-supporting capacity of the environment is not compromised.</td>
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<td>12.4.2 To sustainably and efficiently produce and use energy taking into account community values and expectations.</td>
<td>This objective establishes a framework for the sustainable and efficient management of the region’s natural energy assets and supports, where environmentally appropriate and economically viable, continued production, use and further development of these resources.</td>
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<td>12.4.3 To encourage use of renewable resources to produce energy.</td>
<td>Using greater amounts of energy from renewable energy resources lessens Otago’s dependence on non renewable energy resources.</td>
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12.5 Policies

12.5.1 Provide for procedures to prohibit the production of nuclear power throughout the region.

Explanation and Principal Reasons for Adopting

Section 5 of the Resource Management Act requires that the life-supporting capacity of air, water, soil and ecosystems be safeguarded and that the adverse effects of activities be avoided, remedied or mitigated. In order to avoid any adverse effects associated with nuclear accidents and to protect the life-supporting capacity of Otago’s resources, provision will be made for the production of nuclear power within Otago to be prohibited.

Methods

See Also Other Policies

12.6.1 8.5.1 to 8.5.2
12.6.12 8.5.5 to 8.5.6
12.6.16 8.5.10
9.5.5
12.5.2
14.5.1 to 14.5.8
15.5.1 to 15.5.2

12.5.2 To promote the sustainable management and use of energy through:

(a) Encouraging energy production facilities that draw on the region’s renewable energy resources; and
(b) Encouraging the use of renewable energy resources, in a way that safeguards the life-supporting capacity of air, water, soil and ecosystems and avoids, remedies and mitigates adverse effects on the environment, as a replacement for non-renewable energy resources: and
(c) Encouraging the sustainable development of Otago’s renewable energy resources.

This policy promotes sustainable and environmentally friendly energy production, use and development. It recognises that the sustainability of non-renewable energy sources can be assisted by reducing the region’s relative dependence on finite energy resources and promotes the aim that the energy needs of future generations can be met by giving preference to energy sources that are less polluting and more sustainable by nature.

Methods

See Also Other Policies

12.6.2 5.5.1 to 5.5.3
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12.5.3 To promote improved energy efficiency within Otago through:

(a) Encouraging the use of energy efficient technology and architecture; and
(b) Educating the public about energy efficiency; and
(c) Encouraging energy efficiency in all industry sectors; and
(d) Encouraging energy efficient transport modes in Otago.

This policy will ensure energy efficient concepts and practices are actively promoted and pursued in order to secure energy savings and to provide room for growth in energy consumption in the future.

Methods

See Also Other Policies

12.6.4 9.5.2 to 9.5.3
9.5.5
12.6.5 14.5.1 to 14.5.8
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<td>12.5.4</td>
<td>To promote the securing of appropriate benefits for Otago’s communities from any energy developments within the region.</td>
<td>12.6.17 12.6.18 12.6.19</td>
<td>9.5.5 14.5.1 to 14.5.8 15.5.1 to 15.5.2</td>
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12.6 Methods

The methods to be used by the Otago Regional Council include the following:

12.6.1 Make nuclear power generation a prohibited activity in relevant regional plans.

12.6.2 Continue to give priority to the allocation of water to existing hydro-electric power generation systems in Otago except:
   (a) Where it is determined that the water is required for the needs of other significant values; and
   (b) Where these values cannot be provided for elsewhere in the locality.

12.6.3 Develop policies and strategies that encourage and promote the use and development of renewable energy sources.

12.6.4 Consider the use of renewable energy sources and the efficient use of energy within the transport sector through the Regional Land Transport Strategy.

12.6.5 Develop policies and strategies to promote the improved efficiency of energy use in Otago.

12.6.6 Educate about and promote energy efficient practices.

12.6.7 Encourage new energy intensive industries to undertake an energy efficiency assessment.

12.6.8 Initiate, support and encourage research and monitoring programmes to provide information on Otago’s energy issues and solutions.

12.6.9 Promote and encourage interagency liaison and cooperation and the development of protocols to ensure integrated and coordinated management of Otago’s energy resources.

12.6.10 Advocate with appropriate parties regarding the need for long-term regional benefits from energy developments and for adequate compensation for adverse effects caused by the development of energy resources.

12.6.11 Advocate to Central Government over the need for a national policy statement on energy and a sustainable energy management policy.

12.6.12 Consider inclusion of conditions on resource consents and consider declining such consents as necessary to avoid, remedy or mitigate the adverse effects of energy production.

12.6.13 Consult with Otago’s communities regarding the management of Otago’s energy resources.

12.6.14 Use education programmes to improve community awareness and understanding of energy issues and sustainable management of energy resources in Otago.

12.6.15 Recognise and encourage the role of community groups that promote sustainable management of energy resources.
Methods which may be used by Otago’s territorial local authorities include the following:

12.6.16 Make nuclear power generation a prohibited activity in district plans.

12.6.17 Encourage the use of energy efficient technology and architecture.

12.6.18 Educate about and promote energy efficient practices.

12.6.19 Consider energy efficiency requirements in the development of District Land Transport Programmes.

**Explanation and Principal Reasons for Adopting**

These methods allow for integrated and coordinated management of Otago’s energy resources, incorporating the avoidance of adverse effects associated with nuclear power production; the promotion of the sustainable management, use and development of energy resources by providing for the continued allocation of water resources for existing hydro-electric schemes (in recognition of the contribution these schemes make to the nation’s energy supplies) and by favouring renewable energy sources; the promotion of energy efficiency and energy savings; and the ability to further arguments that the region should receive increased benefit from the use of its energy resources.
12.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

12.7.1 Otago’s communities are able to meet their present and reasonably foreseeable energy needs.

12.7.2 The management of Otago’s energy resources takes into account manawhenua values.

12.7.3 Otago’s energy resources (excluding minerals) are managed in a sustainable manner.

12.7.4 The adverse effects on the environment from energy production, use and development are avoided or mitigated.

12.7.5 Nuclear power is not generated in Otago.

12.7.6 There is a relative reduction in the demand for conventional non-renewable sources of energy and cost-effective renewable sources of energy are developed.

12.7.7 Energy efficient practices are adopted and improved throughout Otago.

12.7.8 Energy developments in Otago provide long-term regional benefits.
13 Wastes and Hazardous Substances
13.1 Introduction

Waste is the material remaining after an integrated programme of reduction, reuse and recycling. Waste management is concerned with the way we deal with the wastes, from the time they are generated, until the time they are safely disposed of (the "waste stream"). In one sense, wastes are simply a resource that is not being used. In many instances, they can be reused and recycled, at which point they cease to be waste. There are three stages to the integrated management of the waste stream:

- The avoidance or reduction in the amount of waste generated;
- The reuse and recycling of wastes;
- Waste transportation, storage, treatment and disposal.

There is a growing public awareness of the need for integrated waste management, considering the waste stream through all its phases, the adverse effects associated with each phase and the management of the waste stream within the sustainability of the region's natural and physical resources. This is reflected in increasing pressure to make those that generate waste responsible for it throughout its lifetime, although this is beyond the powers of the Otago Regional Council under the Resource Management Act.

As New Zealand is a signatory to the Basel Convention, it has international responsibilities relating to the movement of wastes across its national boundaries. Regulations have been implemented to control the import and export of waste. There remains the need for greater clarity, coordination and planning between agencies to improve the management of waste on a national basis. The Hazardous Substances and New Organisms legislation will go some way to providing the clarity needed in respect of hazardous substances.

Manawhenua philosophy advocates the non-contamination of areas of mahi kai (food resources) and waahi tapu. This is especially important in terms of human toeka (human wastes). To eat food from areas used for the disposal of human wastes is culturally abhorrent. The spiritual nature of waahi tapu requires that they be free from wastes of any kind. The orderly management of wastes is vitally important.

The types of waste within Otago can be broadly divided into solid wastes, liquid wastes, gaseous wastes and hazardous substances, which are discharged onto land or into water or the air.
13.2 Roles of Different Agencies

In any discussion of waste management, it is important that the roles of the various agencies are understood. At present, the respective roles are unclear and, with respect to some waste issues, uncertain.

There are two broad areas of waste management that need to be considered: general waste management and the more specific hazardous substances management. Although hazardous substances themselves may not be a waste when they are created and used, the problems associated with their use and eventual disposal require consideration in this chapter of the Policy Statement.

A Regional Waste Management Technical Advisory Group was established to provide technical advice to the various bodies involved in waste management and to coordinate the development of cooperative management solutions.

13.2.1 Waste Management

The Minister for the Environment is able to set national policy, guidelines and standards and monitors regional, district and city councils achievements under the Act. The Ministry also provides advice and education.

The Otago Regional Council is responsible for the control and management of the effects from the discharge or disposal of waste, as it is classed as a contaminant. The Council considers applications for discharges of contaminants into water and air and onto land. It provides advice and education and monitors the effects of waste treatment and disposal within Otago. It is able to provide an integrated regional overview of the management of the waste stream and manages and coordinates the cleanup of pollution spills.

The primary role of district and city councils is the provision of facilities for the collection, recycling and disposal of wastes. Private enterprises can also carry out such work. Territorial local authorities can also be called upon to undertake the operational aspects of waste spill cleanup.

13.2.2 Hazardous Substance Management

The management of hazardous substances is a very complex area. Hazardous substances are presently regulated under the Explosives Act 1957, administered by the Department of Labour, the Dangerous Goods Act 1974, administered by local authorities, the Toxic Substances Act 1979, administered by the Toxic Substances Board, and the Pesticides Act 1979, administered by the Pesticides Board. Some hazardous substances are also regulated under the Animal Remedies Act 1967, and administered by the Animal Remedies Board.

The importation of new organisms (that is, organisms of a kind not already present in New Zealand) is covered by the Biosecurity Act 1993. The development of genetically modified organisms is not covered by present legislation at all.
These statutes are being replaced by the Hazardous Substances and New Organisms Act. The aim of the Act is to provide a comprehensive and consistent approach to the management of all hazardous substances and new organisms. It establishes a new statutory body, the Environmental Risk Management Authority to assess and develop controls for the importation, manufacture, development, and release within New Zealand of hazardous substances and new organisms.

The new body was foreshadowed in Part XIII of the Resource Management Act 1991. That Part set up a body called the Hazards Control Commission. The body was never formally established and Part XIII of that Act never came into force.

Under the Resource Management Act, both district and regional councils have the responsibility for controlling the use of land related to hazardous substances. Section 62(1)(ha) of the Act requires that regional policy statements shall state for the region or any part of the region, which local authority shall have responsibility within its own area for developing objectives, policies, and rules relating to the control of the use of land for the prevention or mitigation of any adverse effects of the storage, use, disposal, and transportation of hazardous substances, and may state particular responsibilities for particular hazardous substances; but if no responsibilities for a hazardous substance are identified in the policy statement the regional council shall retain responsibility for the hazardous substance.

The respective responsibilities of the Regional Council and territorial local authorities within Otago are described in 13.2.3 below.

13.2.3 Responsibilities of local authorities within Otago for control of land use in the prevention or mitigation of the adverse effects of hazardous substances in terms of Section 62(1)(ha) of the Resource Management Act.

Territorial local authorities are to have responsibility within their own areas for the preparation of objectives, policies, and rules relating to the control of the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal or transportation, with respect to all hazardous substances.

As appropriate, through a regional plan, the Regional Council will develop objectives, policies, rules and other methods relating to the use of land for the purpose of the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances regarding:

- the location of hazardous facilities or pipelines for the bulk conveyance of hazardous substances in relation to groundwater infiltration areas, or in close proximity to surface water resources, or in close proximity to the Coastal Marine Area, or on soils particularly valued for their primary productive capability;

- or where the actual or potential effects may be of regional significance.
## 13.3 Issues

### 13.3.1 There is a range of wastes produced in Otago, with only limited facilities available for dealing with them.

The emphasis to date, when dealing with the range of wastes produced in Otago, has been on dealing with wastes at the end of the waste stream through providing disposal facilities. There is a notable lack of recycling facilities for the majority of waste produced, a lack of storage facilities for holding hazardous wastes and a lack of facilities which encourage the reuse of wastes that are produced. The types of waste produced in Otago which need to be considered throughout the waste stream include:

- Solid waste;
- Liquid waste;
- Air discharge;
- Hazardous waste;
- Medical waste;
- Persistent waste;
- Litter.

### 13.3.2 Otago’s communities and environment can be adversely affected by hazardous wastes and substances.

Hazardous substances are those substances that are flammable, explosive, reactive, toxic, corrosive, infectious, pathogenic, carcinogenic, mutagenic, bio-concentrative, radioactive or persistent in nature, which might pose a threat to, or adversely effect human, plant or animal health. Within Otago they are used for a variety of purposes, ranging from household chemicals to industrial process additives, including medical wastes, agricultural chemicals and industrial chemicals.

At present there are no storage facilities for hazardous wastes that cannot be treated or dealt with in other ways. This has the potential to result in significant adverse effects on Otago’s communities and resources, particularly if such wastes are disposed of inappropriately.
Associated with the use of hazardous substances is a range of issues which include not only the possible effects of their disposal, but also the impacts of their use. These issues include:
- Adverse environmental effects of their disposal;
- Adverse environmental effects of spills and the need for contingency plans;
- Inappropriate storage methods;
- Uncontrolled use;
- The increasing transportation of hazardous substances within the region;
- The need for greater information and increased education about hazardous substances.

13.3.3 Waste reduction, recycling and disposal within Otago is managed in an uncoordinated, ad-hoc manner.

The responsibility for the management and control of Otago’s waste stream is split between a variety of agencies. Within the Otago region, the Otago Regional Council has a role in approving all new discharges to the environment (including discharges from sewage treatment works and landfills), while district and city councils are responsible for the collection, recycling and disposal of wastes. There is a need for greater clarity, coordination and planning between all agencies across the region to improve the way that waste is dealt with, from the time it is created to the time it is disposed of.

13.3.4 Illegal discharges can degrade Otago’s environment.

Illegal discharges have the potential to adversely effect Otago’s environment through contamination of land and water resources and a lowering of intrinsic and amenity values. The Otago Regional Council issues discharge permits which include limits on the nature and extent of the discharge in order to avoid, remedy or mitigate any adverse effect. Illegal discharges include those discharges which have a consent but which discharge material in excess of their authorisation, as well as those discharges for which a consent is required, but is not held. Monitoring of individual
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<td>13.3.5 Non-point source discharges can degrade Otago’s environmental quality.</td>
<td>Non-point source discharges are discharges into the environment from a diffuse source, rather than from a single point such as a pipe, drain or chimney. They include water runoff from rural and urban areas following rain, agricultural chemical runoff and leachate from landfills. Non-point source discharges can have an insidious effect, slowly degrading environmental quality, particularly water quality. Their adverse effects include a degradation of aquatic ecosystems, a loss of scenic or recreational enjoyment, contamination of sediments and eutrophication of water bodies.</td>
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| 13.3.6 Waste disposal practices in some areas of Otago have resulted in contamination of the environment. | Agencies with a responsibility for the management of the waste stream are only now becoming aware of the legacy which has been left by past disposal practices for a variety of wastes. In some cases the methods used and the sites where the wastes were deposited were inappropriate. Adverse environmental effects are now being experienced from some of those sites including:  
- Sites chemically contaminated by past uses such as timber processing plants and mining activities which have affected land, water and sediments;  
- Old landfill sites;  
- Old dumping sites and areas for hazardous materials. | 13.4.1     | 13.5.4         | 4.3.1 to 4.3.5     |
|                                                                       |                                                                                                                                                                                                             | 13.4.4     | 13.5.7         | 5.3.3                     |
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|                                                                       |                                                                                                                                                                                                             |           | 10.3.4         | 10.3.5                    |
|                                                                       |                                                                                                                                                                                                             |           |                | 14.3.1 to 14.3.6         |
|                                                                       |                                                                                                                                                                                                             |           |                | 15.3.1                    |
# 13.4 Objectives

## 13.4.1 To protect Otago’s communities, environment and natural resources from the adverse effects of the waste stream.

The disposal of wastes and illegal discharges can create many adverse effects which have the potential to damage the environment of Otago. There is a need to protect Otago’s environment from the actual and potential effects of all elements of the waste stream including non-point source discharges which lead to a lowering of water quality standards in Otago water bodies such as Otago Harbour, Lake Hayes, Lake Tuakitoto and the Kakanui River. The adverse effects can take many forms and include:
- Threats to ecosystem health and integrity;
- Threats to human health;
- Land contamination;
- Ground water contamination;
- Surface water pollution;
- Air pollution;
- Decreased amenity values;
- Impact on mahika kai values.

## 13.4.2 To encourage a reduction in the amount, range and type of waste generated in Otago.

The first step towards reducing the adverse effects of the waste stream on Otago’s communities and resources is to reduce the amount of waste produced. A reduction is required, as any growth in the region’s economy will likely generate a greater overall volume of waste than is presently the case. If every individual and organisation reduces the amount of waste that they produce, the production of wastes across the region on a per capita basis should reduce, resulting in fewer adverse effects on Otago’s communities and resources.

## 13.4.3 To encourage an increase in the reuse, recycling and recovery of wastes.

Reducing the disposal of wastes can be brought about through increasing the amount of reuse, recycling and recovery of the wastes that are produced. Reducing the disposal of wastes through such practices should result in less adverse effects on Otago’s communities and resources and would make better use of wastes as a resource.
13.4.4 To minimise the risks to people and the wider environment arising from existing contaminated sites, and the storage, use, transportation and disposal of hazardous substances.

Hazardous substances are widely used for a variety of purposes but, due to their nature, can also pose serious threats to the health of Otago’s communities and the wider environment. This can occur through the uncontrolled use of hazardous substances, their inappropriate storage or disposal and accidental spills. There is also potential for serious adverse effects where past site selection or waste disposal practices have resulted in the contamination of industrial and waste disposal sites. It is an important resource management objective for the region therefore that the risks associated with contaminated sites or the storage, use, transportation and disposal of hazardous substances be avoided, where possible, or otherwise remedied, particularly in the case of contaminated sites, or mitigated through appropriate management and technical practices.
13.5 Policies

13.5.1 To recognise and provide for the relationship Kai Tahu have with natural and physical resources when managing Otago’s waste stream through:
(a) Providing for the management and disposal of Otago’s waste stream in a manner that takes into account Kai Tahu cultural values; and
(b) Working towards eliminating human wastes and other pollutants from entering Otago’s waterways.

13.5.2 To avoid, remedy or mitigate the adverse effects resulting from the disposal of solid wastes in Otago through:
(a) Requiring that new landfills be located in appropriate areas taking account of landfill guidelines produced by the Ministry for the Environment; and
(b) Requiring that safeguards be incorporated into landfill design to prevent adverse effects on the environment, taking account of landfill guidelines produced by the Ministry for the Environment; and
(c) Encouraging a minimisation in the number of landfills, consistent with environmental and community requirements; and
(d) Minimising the amount and type of litter disposed of within Otago through:

The disposal of wastes can have significant adverse effects on the cultural and spiritual relationship Kai Tahu have with Otago’s natural and physical resources. This policy recognises the relationship of runanga and hapu to their places and resources of cultural importance, and provides for their role in the management of Otago’s waste stream.

Kai Tahu attitudes and traditions do not need to clash with the need to zone specific areas for the disposal of wastes, however such areas should be sited so as to prevent contamination of waahi tapu, taoka and mahika kai.

The Ministry for the Environment has produced landfill guidelines, which include criteria for the siting and safety of landfills. Issues to be considered when siting new landfills include access, travel distances, travel flows, topography, geology, groundwater, surface hydrology, visibility, natural hazards and ecosystems. Safety considerations include waste categorisation, treatment requirements, inspections, sampling and analysis and litter, dust, odour, bird, pest, noise, fire, stormwater and leachate control. Adopting these guidelines will assist in ensuring that landfills do not adversely affect the environment. Minimising the total number of landfills in the region will ensure that the adverse effects associated with landfills are constrained to a minimal number of differing sites. Recent efforts of territorial local authorities in the region have resulted in the establishment of more suitable solid waste disposal facilities and plans for additional facilities in the future. The most effective and efficient means of waste disposal should be encouraged.
### Policies

1. Educating the public and promoting about the need to reduce littering; and
2. Providing facilities for the collection and disposal of litter; and
3. Minimising the amount and types of solid waste generated within Otago by:
   1. Educating waste generators about the need to reduce waste and methods of doing this;
   2. Encouraging waste audits; and
   3. Requiring justification for consents to dispose of solid waste.

#### 13.5.3 To avoid, remedy or mitigate the adverse effects resulting from the discharge of liquid wastes in Otago through:

- **(a)** Requiring, where practicable, the treatment of liquid wastes at the point where they are generated; and
- **(b)** Encouraging a reduction in the volume and concentration of liquid wastes within the waste stream by:
  1. Educating waste generators about the need to reduce wastes, and methods of doing this;
  2. Encouraging waste audits; and
  3. Requiring justification for consents to dispose of liquid waste; and
- **(c)** Encouraging a reduction in the volume and concentration of liquid wastes within the waste stream.

#### 13.5.4 To avoid, remedy or mitigate the adverse effects resulting from hazardous substances within Otago through:

Hazardous substance use and the resultant hazardous wastes have the potential to severely impact on Otago’s environment. Education and promotion is required to reduce the amount of hazardous substances and the resultant hazardous wastes.

### Explanation and Principal Reasons for Adopting

The casual tossing aside of litter adversely affects the visual and amenity values of Otago, particularly along transport routes, the coast and picnic and outdoor recreation sites. Reducing these adverse effects will require the entire Otago community to work at reducing the casual littering of the region. Providing collection facilities at suitable locations will assist in this.

Waste minimisation and treatment at source prior to discharge into a centralised collection and treatment facility will ensure a reduction in the amount and strength of any liquid contaminant discharged into a centralised collection system. Liquid contaminant discharges into the environment from any source will have to meet the highest possible standards in order to minimise adverse effects on the receiving environment. The highest possible standard will depend on the communities’ needs and on financial and technical constraints. Policies 6.5.5 and 8.5.6 in the water and coast chapters of this Regional Policy Statement establish criteria for the receiving waters that will have to be met by any discharge.

### Methods

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### See Also Other Policies

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Policies

(a) Educating about the need to handle, use, store and transport hazardous substances carefully and promoting safe and appropriate practices; and

(b) Promoting a reduction in hazardous substance use and waste production; and

(c) Requiring, as far as is practicable, the on-site treatment of hazardous wastes; and

(d) Requiring, where treatment is not available, the safe storage or disposal of hazardous wastes; and

(e) Encouraging the reuse of hazardous wastes; and

(f) Supporting the creation of a facility for the treatment and disposal of hazardous wastes; and

(g) Promoting the coordination of hazardous substances management between national, regional and territorial authorities.

Explanation and Principal Reasons for Adopting

hazardous material used and to ensure the safe handling, use, storage and transport of that material.

A reduction in hazardous substance use and waste production is required, although any growth in the region’s economy may require the use of hazardous substances. If every individual and organisation reduces the amount of hazardous substance used, the use of hazardous substances and the generation of hazardous wastes across the region on a per capita basis should reduce, resulting in less adverse effects on Otago’s communities and resources. A reduction in hazardous substance use and waste production may result from activities such as promoting new technologies or products or by advocating a reduction in the amount of hazardous substance used.

Where hazardous materials are used, the emphasis is on the treatment of any wastes as far as possible at source or the reuse of that waste, prior to the safe storage or disposal of the residue. A regional hazardous waste treatment and disposal facility is required within Otago to deal with the waste byproducts of our hazardous material use. In order to be able to better understand the amount of hazardous wastes produced and to minimise any adverse effects on the environment, data on the sources, types and fate of hazardous wastes is required.

The medical wastes produced in Otago include contaminated wrappings, needles, glass, human organs and other associated material. There is little scope for reusing this material. Suitable treatment and disposal techniques are required to remove any threat of contamination and infection and to remove the concern over the disposal of needles, body organs and other material at municipal tips. Using the best available technology should ensure that the disposal of medical wastes does not cause any health risk or aesthetic concerns.

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13.5.5 To avoid, remedy or mitigate the adverse effects resulting from medical wastes within Otago through:

(a) Requiring an acceptably safe level of treatment and disposal of medical wastes in an environmentally sustainable manner; and

(b) Promoting the regional use of the best available technology.
### Policies

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<td>(a) Encouraging the avoidance of the use of materials that persist in the environment when disposed of; and</td>
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<td>(b) Encouraging the reuse of items made from persistent materials; and</td>
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<td>(c) Encouraging the treatment of persistent wastes to reduce their effects on the environment.</td>
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Persistent wastes, such as plastic bags, can remain in the environment for many years. There is a need to reduce the amount of persistent wastes that we dispose of and find ways of treating such wastes to reduce their long-term effects. Avoiding the use of such materials or reusing them as much as possible, will reduce the amount of persistent wastes produced.

<p>| 13.5.7 To address the adverse effects of past waste disposal practices through: | 13.6.1 13.6.2 13.6.4 13.6.6 13.6.7 13.6.8 13.6.11 13.6.12 13.6.13 13.6.14 13.6.15 13.6.16 13.6.17 | 5.5.1 5.5.3 6.5.1 6.5.5 6.5.5 to 5.5.6 6.5.6 6.5.9 7.5.3 7.5.4 8.5.1 8.5.2 8.5.4 to 8.5.6 9.5.1 9.5.4 9.5.5 10.5.1 10.5.2 |
| (a) Identifying sites of old landfills, hazardous substance dumps or contamination within Otago; and | | |
| (b) Determining any adverse effects arising from those sites and requiring the remedying or mitigation of any adverse effects. | | |</p>
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| 13.5.8  | To minimise the risk of spills of materials that will adversely affect the environment and to establish a capability to respond to any spill through:  
(a) Educating the public about the need to prevent spills; and  
(b) Ensuring contingency plans are in place to clean up the potential and actual effects of accidental spills, whether to land, air, the coast or water; and  
(c) Mitigating the adverse effects of any clean-up operation following a spill. | Educating individuals and groups about the adverse effects of accidental spills of materials such as petroleum products, hazardous materials and industrial agents and the need to minimise the risk of any such spills will reduce the threat to Otago’s environment from accidental spills. Contingency plans will need to be in place to be able to respond quickly to any accidental spill. Careful consideration to the methods to be used to clean up a spill will be required to ensure that the clean-up does not create additional adverse effects on the environment. |  |
| 13.5.9  | To minimise the amount of waste generated at source in Otago and to maximise the opportunities for the reuse, recycling and recovery of materials from the waste stream through promoting and encouraging:  
(a) A reduction in the quantity of material entering the waste stream; and  
(b) Material and products that are reusable and the recycling of material and substances that cannot be reused; and  
(c) The recovery of resources from materials in the waste stream. | The reduction of material entering the waste stream has become an increasingly important issue in Otago because of the need to provide landfills, which require large areas of land and produce adverse environmental effects, to dispose of such waste and because of the non biodegradable nature of much waste, even when contained in a landfill. Waste minimisation includes a reduction in the rate of material being produced which is non biodegradable and will require landfill disposal, for example, through a reduction in packaging; the promotion of products and packaging that are reusable and their recycling where reuse is not an option; and the recovery of resources from materials in the waste stream. The principles of reduce, reuse, recycle and recover will extend the life of the region’s landfills and place less pressure on the natural and social environment. |  |
13.5.10 To address the adverse effects of unauthorised discharges on the environment through:

(a) Educating the public about the adverse effects of such discharges and the necessity to avoid them; and

(b) Taking appropriate action in response to unauthorised discharge incidents.

All discharges have the potential for adverse impacts on the environment unless these can be avoided, remedied or mitigated. Transfer stations, landfills, and waste recycling facilities provide a means to control and minimise the adverse effects of waste discharges. Unauthorised discharges have the same potential for adverse impacts but the ability to avoid, remedy or mitigate them is circumvented. In some cases, such as oil spills or the discharge of milk into waterways, the adverse effects on the environment may be catastrophic. For this reason, unauthorised discharges are of major concern to the community and an offence against the Resource Management Act 1991. The Regional Council is empowered by the Act to take action in respect of unauthorised discharges but in addition to making provision for this, it will also seek to educate the public about the adverse effects of such discharges and the necessity to avoid them.
13.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should:

13.6.1 Take into account Kai Tahu cultural values in the management of Otago’s waste stream through:
(a) Using and recognising iwi resource management plans as a basis for consultation; and
(b) Developing consultation protocols with iwi, runanga and hapu to provide for their input into the management of Otago’s waste stream.

The methods to be used by the Otago Regional Council include the following:

13.6.2 Develop policies and other means, including rules where appropriate, within the Regional Plan: Waste to avoid, remedy or mitigate the adverse effects of the region’s wastes.

13.6.3 Consider including conditions on resource consents or consider declining such consents as necessary to avoid, remedy or mitigate the adverse effects of the discharge of wastes.

13.6.4 Develop contingency plans and a response capability to deal effectively and efficiently with accidental spills of environmentally damaging substances.

13.6.5 Promote and educate about:
(a) The adverse effects of the waste stream.
(b) The benefits of waste minimisation, reuse and recycling.
(c) Hazardous substance storage, use, disposal and transportation.
(d) The requirements of the Resource Management Act and regional policies and rules for the management of the waste stream.
(e) Disposal and reuse processes for biodegradable waste.

13.6.6 Consult with Otago’s communities regarding the management of Otago’s waste stream.

13.6.7 Initiate, support and encourage research and monitoring programmes to provide information on Otago’s waste issues and solutions.

13.6.8 Advocate to Central Government on waste management issues of importance to Otago.

13.6.9 Prevent uncontrolled and illegal disposal of waste by appropriate enforcement action.

13.6.10 Promote the establishment of a hazardous wastes facility for the safe treatment and disposal of hazardous wastes, including the provision of appropriate facilities for the long term storage of intractable wastes, in consultation with local authorities and other agencies.

13.6.11 Investigate old landfills, hazardous dumps or chemical contamination sites within Otago where the adverse effects associated with those sites are considered to be significant.

13.6.12 Take enforcement action to address unauthorised waste management practices.
13.6.13 Recognise and encourage agencies and community groups that promote or undertake remedial works to restore contaminated sites or mitigate adverse effects arising from waste disposal.

13.6.14 Promote and encourage interagency liaison and cooperation and the development of protocols and standards to achieve integrated and coordinated management of Otago’s waste stream.

13.6.15 Promote Codes of Practice and protocols agreed to by industry, the Otago Regional Council, city and district councils and other interest groups as appropriate to avoid, remedy or mitigate the adverse effects of the waste stream.

13.6.16 Provide information on the adverse effects associated with waste management activities.

Methods which may be used by Otago's territorial local authorities include the following:

13.6.17 Promote and educate about:
   (a) The adverse effects of the waste stream.
   (b) The benefits of waste minimisation, reuse and recycling.
   (c) Hazardous substances use, treatment, disposal and transportation.
   (d) The requirements of the Resource Management Act.
   (e) Disposal and reuse processes for biodegradable waste.

13.6.18 Provide for treatment, storage and disposal facilities for wastes generated within their districts, including hazardous wastes that the territorial local authority is able to deal with.

Explanation and Principal Reasons for Adopting
The integrated management of all elements of Otago’s waste stream is required to ensure a reduction in the adverse effects associated with it. A waste management strategy, considering all types of wastes and strategies for their reduction, reuse and recycling, as well as their disposal, is an important element of this integration. Any such strategy would be in the form of a regional plan under the Resource Management Act. Ensuring the Otago community is aware of its role in reducing the impacts of waste treatment and disposal should assist in reducing the amount of waste produced.

A contingency plan to deal with accidental spills of materials that could damage the environment and an ability to respond, is an important element in ensuring the mitigation and remedying of adverse effects associated with the accidental spilling of material.

The remaining policies should bring about a reduction in the adverse effects associated with the waste stream and an improvement in the overall environmental quality of the region.
13.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

13.7.1 Otago’s communities are able to meet their present and reasonably foreseeable needs for the use, transportation, storage and disposal of wastes.

13.7.2 The management of Otago’s waste stream takes into account the values of manawhenua.

13.7.3 The adverse effects of waste disposal and treatment are avoided, remedied or mitigated.

13.7.4 There is a reduction in the amount of waste disposed of in Otago as a result of:
   (a) Less waste being produced; and
   (b) Increased amounts of material reuse and recycling; and
   (c) Increased treatment of wastes at source.

13.7.5 There is a reduction in the adverse effects of the handling, use, storage and transportation of hazardous substances and wastes in Otago as a result of:
   (a) A hazardous waste facility being established; and
   (b) Hazardous wastes being safely stored and treated; and
   (c) Less hazardous wastes being produced; and
   (d) An improved database on the sources, types and disposal of hazardous wastes; and
   (e) The minimisation of the effects of accidental spillage and discharge of hazardous substances within the region on the natural and physical resources of the region.
14 Monitoring
14.1 Introduction

The Resource Management Act requires all local authorities to gather information and to undertake or commission such research as is necessary to carry out effectively their functions under the Act (Section 35(1)). There is also a requirement for every local authority to monitor:

(a) *The state of the whole or any part of the environment of its region or district to the extent that it is appropriate to enable the local authority to effectively carry out its functions under this Act; and*

(b) *The suitability and effectiveness of any policy statement or plan for its region or district; and*

(c) *The exercise of any functions, powers or duties delegated or transferred by it; and*

(d) *The exercise of the resource consents that have effect in its region or district, as the case may be;-

and take appropriate action (having regard to the methods available to it under this Act) where this is shown to be necessary. (Section 35(2) RMA)*

Monitoring the effectiveness of the policies, plans and processes of the Otago Regional Council and Otago’s district and city councils will provide a measure of the success of whether those mechanisms have achieved the intended outcomes. Where the policies, plans or processes attempt to halt or avoid environmental degradation or to improve the health and state of the environment, monitoring will provide an objective assessment of their degree of success.

There are four broad types of monitoring considered within this policy statement:

(A) Environmental Monitoring

(i) Baseline Monitoring:
Monitoring of an ongoing nature designed to provide data on physical, chemical, biological, social, cultural and economic characteristics of the Otago region. This involves the planned and repeated measurement of variables (eg. pH, rainfall, animal numbers, issued building permits). This is often termed baseline monitoring - providing baseline information on the health and state of the environment. This acts as a basis for assessing changes or trends in the environment, either as the result of natural processes or human actions. Subsequent monitoring which identifies changes taking place may provide new baselines.

(ii) Impact Monitoring
Monitoring designed to identify the effects of particular activities on the environment or of particular environmental events is known as impact monitoring. Impact monitoring could include intensive monitoring of a resource to assess the impacts of changes in use, which can be either specific or cumulative.
(B) Compliance Monitoring:

Monitoring of resource consents to ensure that the conditions of the consents are being complied with.

(C) Process Monitoring:

Monitoring the effectiveness and suitability of policies, plans and processes of Otago’s local authorities.

State of the environment monitoring and reporting is a term that can be used to describe the overall result of the regional monitoring programme, utilising the three broad types of monitoring undertaken in the region. State of the environment monitoring goes beyond the simple collection of environmental data. It involves the systematic analysis of key indicators of condition and trend (e.g. area of land with severe erosion) to determine:

- The state of the environment in a particular area at a particular point in time;
- The nature of trends in that state over time; and
- The cause-effect relationship between human action and environmental conditions.

State of the environment reporting provides a picture of the region’s environment at one point in time and allows for an assessment of change over time. It is an information system which is still in its infancy in New Zealand but it is becoming increasingly popular because of the opportunities it provides for improved environmental management. It is a system of data synthesis and analysis which has many benefits for Otago because it provides a measurable indicator of the effects of human activities on the environment, as well as a measurable indicator of the degree of success of policies, plans and processes.
14.2 Roles of Different Agencies

14.2.1 Central Government

Under the Resource Management Act, the Minister for the Environment has a responsibility to:
- Monitor the effect and implementation of the Act and any regulations, national policy statements or water conservation orders issued under it.
- Monitor the relationship between the functions, powers and duties of Central Government, regional councils and city and district councils under the Act and the functions, powers and duties of the Hazards Control Commission (to be established under Part XIII of the Act).

The Minister of Conservation has a role in monitoring the effect and implementation of the New Zealand Coastal Policy Statement and coastal permits issued by the Minister of Conservation.

14.2.2 Otago Regional Council

The Otago Regional Council has a role in monitoring the regional environment and the effectiveness of its policies, plans and processes.

14.2.3 Territorial Local Authorities

Otago’s city and district councils have a role in monitoring the environment in their individual districts and the effectiveness of their own policies, plans and processes.
## 14.3 Issues

### 14.3.1 The assessment of the state of Otago’s environment requires that environmental variables be monitored.

To provide enough information on which to assess the state of Otago’s environment, there is a need to collect information on a variety of environmental variables.

### 14.3.2 Local authorities must review the suitability and effectiveness of the policies and plans issued for the Otago region and its districts.

The Otago Regional Council has prepared this Regional Policy Statement and will prepare and release a Regional Coastal Plan and other regional plans under the provisions of the Resource Management Act. Otago’s city and district councils will similarly produce district plans for their districts. Monitoring the outcomes of those policies and plans will be required to ensure that they are suitable and effective in ensuring the integrated and sustainable management of Otago’s natural and physical resources.

Regional policy statements, regional plans and district plans are required by the Act to state the environmental results anticipated from the implementation of their policies and methods (Sections 62(g), 67(g) and 75(g) respectively). The intended outcomes from this Regional Policy Statement are expressed as “anticipated environmental results” at the end of each chapter. They are the intended results from the policies and methods contained within the document. Monitoring of this policy statement and all other policies and plans within the region, will need to provide a measure as to the degree of success of the policies and methods in achieving those anticipated environmental results.

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<td>To provide enough information on which to assess the state of Otago’s environment, there is a need to collect information on a variety of environmental variables.</td>
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<td>14.3.3 There are difficulties in assessing the cumulative effects of resource consents within Otago.</td>
<td>Local authorities issue different types of resource consents. The Otago Regional Council issues water permits (for the taking of water), discharge permits (for the discharge of contaminants), coastal permits (for activities in the coastal marine area) and in some cases landuse consents (for regionally significant land issues). Otago’s city and district councils issue landuse consents (for the use of the land) and subdivision consents (for subdivisions of land). Conditions are typically included in a resource consent to minimise any adverse effects associated with the use permitted. As well as monitoring the effects of a single activity, monitoring will also need to consider the combined effects of all activities within the environment. This is more difficult to assess and is often overlooked. Over time the cumulative effect of all activities may have an adverse effect on the environment which may not have been predicted in the consideration of individual consents.</td>
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<td>14.3.4 There is a lack of information about many of Otago’s natural and physical resources.</td>
<td>The sustainable management of natural and physical resources depends upon there being sufficient information on which to make decisions. A lack of information on those resources constrains the Council from carrying out its resource management functions. The collection of relevant data through monitoring is therefore an important component in ensuring the continuing sustainability of Otago’s natural and physical resources.</td>
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<td>14.3.5 Accurate, reliable and comparable data is generally not available for all of Otago.</td>
<td>A variety of environmental data has been collected over past years by a variety of agencies and groups. In many cases, data that has been collected on the same environmental parameter is not comparable because of differing techniques that have been used or because insufficient rigour has been applied to its collection and analysis.</td>
<td>14.4.1 14.4.2</td>
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14.3.6 There are gaps in the current regional environmental monitoring programme.

Various environmental monitoring programmes have been initiated by the local authorities within Otago over the years, as needs have arisen. The majority of the monitoring work has been on an ad-hoc basis, resulting in a lack of coordination, both within and between local authorities. Duplication of effort in the collection of some data also results from this lack of coordination.

The current regional environmental monitoring programme largely reflects the previous requirements of the various authorities that preceded the local government reorganisation in 1989. The definition of “environment” under the Resource Management Act and the functions of local authorities have changed from the previous legislation. The new environmental monitoring concept needs to be clearly established and the rationale for and value of, carrying out particular monitoring activities must be part of an integrated package which considers all of Otago’s environment.
14.4 Objectives

14.4.1 To undertake or commission cost effective regional monitoring as is necessary to provide timely, accurate and reliable data, to assess the state of Otago’s environment.

14.4.2 To monitor the required elements of Otago’s environment necessary to review the suitability and effectiveness of the Regional Policy Statement, Regional Coastal Plan, any other regional plan and any district plan within the region.

Explanation and Principal Reasons for Adopting

The statutory requirement for undertaking monitoring of the environment and of local authority activities is provided by Section 35 of the Resource Management Act. In addition to undertaking its own monitoring, the Regional Council can make use of information gathered by other agencies and individuals, including resource users carrying out self monitoring.

Monitoring of the environment is necessary to provide an assessment of the policies and plans of Otago’s local authorities. In particular monitoring enables local authorities to:
- Identify issues that may need to be addressed.
- Assist in the setting of priorities.
- Assist in the development of policies, plans and methods to address those issues.
- Be able to measure their success in addressing the issue identified.
- Be able to measure the processes used to manage Otago’s natural and physical resources.

Policies

14.5.1

14.5.3

14.5.4

14.5.5

14.5.6

14.5.8

See Also Other Objectives

All Objectives:
Manawhenua/Land/Water
Air/Coast/Built Environment
Biota/Natural Hazards/Energy
Wastes/Cross Boundary

14.5.1

14.5.2

14.5.4

14.5.5

All Objectives:
Manawhenua/Land/Water
Air/Coast/Built Environment
Biota/Natural Hazards/Energy
Wastes/Cross Boundary
14.5 Policies

14.5.1 To identify the region’s monitoring needs and to prioritise the monitoring that is necessary to meet those needs.

Although Sections 35 and 62 of the Resource Management Act 1991 require that the Council undertake monitoring, it is good practice that monitoring needs and priorities be identified in the development of a monitoring framework or strategy for the region. Direction for annual planning will also be provided.

14.5.2 To increase the knowledge and understanding of Otago’s natural and physical resources, and issues associated with these resources and their solutions, through initiating, supporting and encouraging research and monitoring programmes.

The knowledge held on Otago’s natural and physical resources and issues associated with their use, development and protection is, in some cases, limited. To achieve a greater understanding and to allow for better management, information needs to be actively gathered on the natural and physical resources of the region, and associated issues, and shared with the information. This information can then be used to monitor and review objectives and policies and to promote sustainable practices.

14.5.3 To identify and systematically collect and analyse information about Otago’s environment as required to identify significant environmental issues.

Monitoring is required in order to better understand Otago’s environment. Because change in many variables can occur gradually over a long time, there is a need to continue monitoring of variables on an ongoing and continuous basis. One-off or short-term monitoring is inadequate for identifying longer term changes. Such monitoring should consider the need for physical, chemical, biological, social and cultural data to be collected.

Key variables also need to be identified on which to base a state of the environment report for the Otago region. State of the environment reporting provides a measure of change in Otago’s environment and the effects of human activities.

A number of different agencies and community groups collect information on Otago’s environment. It is important that the availability of this information is recognised, as its use will assist in identifying significant environmental issues.
Policies and plans prepared within Otago under the Resource Management Act must be assessed as to their suitability and effectiveness. The anticipated environmental results of those policies and plans will be monitored to determine the extent to which the results are achieved. Where environmental degradation is identified through the monitoring process or where it becomes obvious that current policies and plans are not having the desired result, those policies and plans will be reviewed and amended to bring about improved environmental condition. Liaison with the community is an important means of determining the effectiveness of plans and policies and whether a response or adjustment is necessary. Expectations within the community in relation to environmental outcomes and management techniques may also change and need to be reflected in the provisions of the Regional Policy Statement or Regional Plans.

Monitoring will also need to consider an assessment of the cumulative effect of all activities within a catchment or area in order to be able to fully assess the likely adverse effects arising from a new activity. The additional cumulative effect of a new activity needs to be considered in addition to its direct effects.
14.5.6 To require that data for monitoring purposes are collected and analysed in a defensible manner, where necessary.

In many cases, for collected data to be of value to the regional monitoring network, they must be of a standard capable of withstanding scrutiny, both in the manner in which they were collected and in the way in which they were analysed. Examples of such data include water quality and quantity information and contaminant levels within air and water discharges. Data of this type, which is not defensible, are of little value.

14.5.7 To promote and encourage self monitoring as part of responsible environmental management.

Self monitoring, with external auditing, has benefits in terms of increasing the efficiency and effectiveness of resource consent monitoring. It also has benefits in terms of improving participants’ perceptions of environmental effects of their actions allowing them to remedy potential problems, before there is major environmental damage and action must be taken by external agencies.

14.5.8 To promote the collection of data that are comparable regionally, nationally, and over periods of time, when undertaking monitoring within Otago.

Standard data collection techniques should be used to ensure that, where possible, data collected by differing sources are comparable.
14.6 Methods

The methods to be used by the Otago Regional Council include the following:

14.6.1 Develop a systematic monitoring framework including the analysis of baseline data to guide monitoring procedures and requirements, including the establishment of monitoring priorities, and to implement reporting procedures.

14.6.2 Establish and implement, where necessary, data collection and analysis procedures, including the identification of key physical, chemical, biological, social and cultural variables.

14.6.3 To undertake monitoring, data collection and research in conjunction with relevant data collection agencies and in consultation with the community and to have regard to other data collection programmes and techniques when developing a monitoring framework for Otago.

14.6.4 To assist in the identification of opportunities for self monitoring programmes and to support self monitoring initiatives.

Methods which may be used by Otago’s territorial local authorities include the following:

14.6.5 Establish and implement, where necessary, data collection and analysis procedures in conjunction with the Otago Regional Council and other data collection agencies within Otago.

14.6.6 Collect environmental data comparable to data being collected by other agencies.

Explanation and Principal Reasons for Adopting

Monitoring the environment of Otago and policies and plans developed by local authorities under the Resource Management Act will ensure the integrated and sustainable management of the region’s environment. This requires the monitoring of key environmental indicators, which will be identified through the relevant plans and in response to the anticipated environmental results in the Regional Policy Statement, and is the responsibility of all local authorities in Otago.
14.7 Anticipated Environmental Results

The environmental results anticipated from the above policies and methods of implementation include:

14.7.1 There is an improved understanding of Otago’s natural and physical environment.

14.7.2 Changes in environmental conditions are monitored over time.

14.7.3 The extent of knowledge and public understanding of Otago’s environmental issues and solutions is enhanced.

14.7.4 Information is available to identify when it is necessary to review policies and plans.

14.7.5 Policies and plans are reviewed in response to changes in community attitudes towards environmental management.
15 Cross Boundary Issues
15.1 Introduction

The effects of an activity or natural process are not always constrained to the area in which they originate. In some cases, the effects may not even be noticeable in the immediate area but may only be felt in other areas. For example, the discharge of air contaminants may have minimal localised effect given the nature of the prevailing wind currents. However communities within the path of the prevailing wind will be subjected to the adverse effects associated with the air discharge.

Where those effects cross administrative boundaries into an adjacent district or region, they are termed cross boundary issues. Other examples of cross boundary issues which can have an effect on adjacent administrative areas within Otago and between the Otago, Southland, Canterbury and West Coast regions include:

- The effects of landuses on communities downstream;
- The movement of contaminated water and the extent of groundwater resources;
- The effects of land activities on the adjacent coastal marine area, and the effects of coastal processes on coastal land;
- The region’s land transport network and the movement of road and rail traffic both across the region and between other regions;
- Network utilities, such as telecommunications and radio communications both across the region and between regions;
- The effects of animal and plant pests;
- The effects of weather events including flooding, droughts and snow;
- The downstream effects of the damming of rivers for the generation of electricity;
- The discharge of contaminants into the air or water or onto land;
- The monitoring of environmental variables across the region and across the country.

All of the resource issues considered within this Policy Statement experience some form of cross boundary issue.

In such cases, the community or area that is affected generally has little or no control over that activity because it occurs outside their administrative area. Recognition of the actual and potential transfer of adverse effects between areas is required to enable the sustainable management of the entire region. Establishing processes between local authorities in order to deal with those cross boundary issues is required.
15.2 Roles of Different Agencies

All agencies exercising functions, powers or duties under the Resource Management Act have a responsibility to consider cross boundary issues.

15.2.1 Central Government

The Minister for the Environment has the ability to develop national policy statements for, amongst other things, anything which affects or potentially affects more than one region. The Minister of Conservation has to prepare the New Zealand Coastal Policy Statement, a national policy statement that covers the coastal environment, which states policies for the use of the entire coastal space.

15.2.2 Otago Regional Council

The Otago Regional Council must show the processes it will use to deal with issues which cross local authority boundaries and issues between territorial authorities or between regions in this Policy Statement and any regional plan it develops.

15.2.3 Territorial Local Authorities

Otago’s city and district councils must show the processes they will use to deal with issues which cross territorial boundaries.
15.3 Issue

15.3.1 Activities or processes originating from outside a district or region can adversely affect that district or region.

The effects of an activity or natural process are not always constrained to the area in which it originates. Where those effects cross administrative boundaries into an adjacent district or region, they are termed cross boundary issues. In such cases, the community or area that is affected generally has little or no control over that activity because it occurs outside their administrative area. Recognition of the actual and potential transfer of adverse effects between areas is required in order to sustainably manage the entire region. Establishing processes between local authorities in order to deal with those cross boundary issues is required.

The significant cross boundary resource issues associated with elements of Otago’s environment are identified in the individual chapters of this Policy Statement.
15.4 Objective

15.4.1 To ensure that cross boundary issues are identified, agreed to and are dealt with in an efficient and effective manner.

Agreement between authorities on what the important cross boundary issues are is required before they can be addressed. Once identified, they need to be dealt with to ensure that the adverse effects of those issues are avoided, remedied or mitigated.
## 15.5 Policies

### 15.5.1 To establish and maintain effective processes for identifying and dealing with cross boundary issues.

**Explanation and Principal Reasons for Adopting**

Because issues that cross administrative boundaries are beyond the control of the affected local authority, processes are required that provide for effective communication and consultation between the affected authority and the authority where the activity or process originates. The aim of the processes is to avoid, remedy or mitigate the adverse effects associated with the cross boundary issue. The issue may involve an activity which crosses the boundary line, and the area that the activity occurs in, or which it has an effect over.

**Methods**

15.6.1

**See Also Other Policies**

All Policies:

- Manawhenua / Land / Water
- Air / Coast / Built Environment
- Biota / Natural Hazards / Energy
- Wastes / Monitoring And Review

### 15.5.2 To encourage coordinated planning of activities among agencies.

**Explanation and Principal Reasons for Adopting**

Coordination of effort and planning between local authorities will help in minimising the adverse effects of cross boundary issues. It is important for managing activities such as road transport and telecommunications services which require consistency of treatment across boundaries.

**Methods**

15.6.1

**See Also Other Policies**

All Policies:

- Manawhenua / Land / Water
- Air / Coast / Built Environment
- Biota / Natural Hazards / Energy
- Wastes / Monitoring And Review
15.6 Methods

In order to achieve the outcomes of the policies, every agency with responsibilities under the Resource Management Act 1991 should where appropriate:

15.6.1 Promote and encourage the development of protocols with adjacent territorial local authorities and regional councils for resolving cross boundary issues.

15.6.2 Consult with all agencies having responsibilities for the sustainable management of aspects of Otago’s environment.

15.6.3 Promote and encourage joint working groups, joint council committees and other joint approaches between appropriate territorial local authorities and regional councils to consider cross boundary issues.

15.6.4 Combine with appropriate territorial local authorities and regional councils in jointly processing resource consent applications that cross administrative boundaries.

Explanation and Principal Reasons for Adopting
Processes to resolve cross boundary issues will be based on consultation and communication between Otago’s local authorities and with adjacent local authorities. Various approaches employing joint groups, committees or other means can be used to facilitate the consideration and decision making between different authorities over issues that cross their boundaries.
### Appendix A: Maori Terms and Phrases

<table>
<thead>
<tr>
<th>Maori Term</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atua</td>
<td>God</td>
</tr>
<tr>
<td>Hapu</td>
<td>Subtribe, extended whanau</td>
</tr>
<tr>
<td>Hukawai</td>
<td>Melt water</td>
</tr>
<tr>
<td>Inaka</td>
<td>Whitebait, colour of whitebait as in pounamu</td>
</tr>
<tr>
<td>Inaka pounamu</td>
<td>Pale greenstone</td>
</tr>
<tr>
<td>Iwi</td>
<td>Tribe</td>
</tr>
<tr>
<td>Kai Tahu</td>
<td>Descendants of Tahu, the tribe</td>
</tr>
<tr>
<td>Kai Tahu whanui</td>
<td>The large family of Kai Tahu</td>
</tr>
<tr>
<td>Kaitiaki</td>
<td>Guardians</td>
</tr>
<tr>
<td>Kaitiakitanga</td>
<td>Guardianship</td>
</tr>
<tr>
<td>Kohatu</td>
<td>Stone</td>
</tr>
<tr>
<td>Kohatu Taoka</td>
<td>Treasured stone resources</td>
</tr>
<tr>
<td>Kohanga</td>
<td>Reseeding areas for shellfish</td>
</tr>
<tr>
<td>Koiwi Tangata</td>
<td>Unidentified Maori skeletal remains</td>
</tr>
<tr>
<td>Koputai</td>
<td>Traditional name for Port Chalmers</td>
</tr>
<tr>
<td>Kotahitanga</td>
<td>Oneness</td>
</tr>
<tr>
<td>Mahika Kai</td>
<td>Places where food is procured or produced</td>
</tr>
<tr>
<td>Mahika mataitai</td>
<td>Places where sea food has been traditionally gathered</td>
</tr>
<tr>
<td>Mana</td>
<td>Authority or influence or prestige</td>
</tr>
<tr>
<td>Manawhenua</td>
<td>Those with rangatiratanga for a particular area of land or district</td>
</tr>
<tr>
<td>Manuhaea</td>
<td>Lake Hawea (site of settlement)</td>
</tr>
<tr>
<td>Marae</td>
<td>Courtyard or meeting place</td>
</tr>
<tr>
<td>Mauka</td>
<td>Mountains</td>
</tr>
<tr>
<td>Mauri</td>
<td>Life force</td>
</tr>
<tr>
<td>Muru</td>
<td>Confiscate</td>
</tr>
<tr>
<td>Otakou</td>
<td>Kaitahu settlement on Otago Peninsula</td>
</tr>
<tr>
<td>Otepoti</td>
<td>Dunedin</td>
</tr>
<tr>
<td>Pa</td>
<td>Village or fortified village</td>
</tr>
<tr>
<td>Pa Tawhito</td>
<td>Ancient Pa sites</td>
</tr>
<tr>
<td>Papakaika</td>
<td>Settlement</td>
</tr>
<tr>
<td>Papatipu</td>
<td>Maori land</td>
</tr>
<tr>
<td>Papatipu Whenua</td>
<td>Ancestral lands</td>
</tr>
<tr>
<td>Papatuanuku</td>
<td>Earth Mother</td>
</tr>
<tr>
<td>Pingao</td>
<td>Fibrous plant used for weaving</td>
</tr>
<tr>
<td>Rahui</td>
<td>Restrictions</td>
</tr>
<tr>
<td>Rakinui</td>
<td>Sky Father</td>
</tr>
<tr>
<td>Rangatiratanga</td>
<td>Chieftainship or authority</td>
</tr>
<tr>
<td>Repo Raupo</td>
<td>Wetlands, and swamps</td>
</tr>
<tr>
<td>Runanga</td>
<td>Local representative groups or community system of organisation</td>
</tr>
<tr>
<td>Tane</td>
<td>Deity of the forests</td>
</tr>
<tr>
<td>Tangaroa</td>
<td>Deity of the sea</td>
</tr>
<tr>
<td>Taoka</td>
<td>All things highly prized, including treasures, property, a resource or resources or even a person (same as taonga)</td>
</tr>
<tr>
<td>Taoka raranga</td>
<td>Prized cultural resource used in weaving, flax, pingao</td>
</tr>
<tr>
<td>Tapu</td>
<td>Sacred</td>
</tr>
<tr>
<td>Tauraka Waka</td>
<td>Canoe landing sites</td>
</tr>
<tr>
<td>Te Waipounamu</td>
<td>A traditional name for the South Island</td>
</tr>
<tr>
<td>Te Waka O Aoraki</td>
<td>One of the earliest names applied to the South Island</td>
</tr>
<tr>
<td>Ti Kouka</td>
<td>Cabbage trees</td>
</tr>
<tr>
<td>Tikanga Maori</td>
<td>The correct way of doing things, according to custom</td>
</tr>
<tr>
<td>Timatanga</td>
<td>Creation tradition related to “in the beginning of time”</td>
</tr>
<tr>
<td>Tuaki</td>
<td>Cockle</td>
</tr>
<tr>
<td>Tuhituhi Nehera</td>
<td>Rock drawing sites</td>
</tr>
<tr>
<td>Tupapaku</td>
<td>Human corpse</td>
</tr>
</tbody>
</table>
Turangawaewae  Place of belonging through ancestral rights, linked to land
Urupa  Burial places
Utu  Cost
Waahi Ana  Important cave areas.
Waahi Kohatu  Rock formations
Waahi Rakau  Areas of important trees
Waahi Raranga  Sources of weaving material
Waahi  Place
Waahi Paripari  Cliff areas
Waahi Taoka  Treasured resources
Waahi Tapu  Sacred places
Waahi Tohu  Locators and their names within the landscape
Wai  Water
Wai ki tai  Coastal waters
Wai ki uta  Inland waters
Wai Kino  Polluted water
Wai Maori  Important fresh water areas
Wai Mataitai  Important estuarine waters
Wai Mate  Poor quality water
Wai Puna  Springs
Wai Tohi  Ceremonial use
Wai whakaheke  Places where water burial was practised
Waiora  Area of water used for healing
Wairua  Life principle
Whakaheke  Cast away
Whakapapa  Genealogy or family tree
Whakatauki  Proverb
Whanau  Family
Whanui  Large or extended
Whenua  Land
Whenua Papakaika  Settlements on Maori land
Whenua Papatipu  Ancestral land
Appendix B: Glossary

Terms marked with an * are terms defined by Section 2 of the Resource Management Act 1991.

**Abstraction**
In relation to a water body means the taking of water from that water body.

**Aesthetic Value**
A value associated with the visual quality or the appreciation of the inherent visual quality of an element in the built or natural environment.

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**Alluvial Material**
Silt, sand, gravel and boulder material deposited by flowing water on flood plains and in river beds as a result of alluvial processes.

**Air**
The mixture of gases enveloping the earth and forming the atmosphere.

**Ambient**
In the context of air quality, it refers to the surrounding air or atmosphere.

**Amenity Values** *
Those natural or physical qualities and characteristics of an area that contribute to people’s appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

**Anticipated Environmental Result**
The intended result or outcome on the environment as a consequence of implementing the policies and methods.

**Archaeological Site**
Any place that
(a) Either
   (i) Was associated with human activity that occurred before 1900; or
   (ii) Is a site of the wreck of any vessel where that wreck occurred before 1900; and
(b) Is or may be able through investigation by archaeological methods to provide evidence relating to the history of New Zealand.

**Best Practicable Option** *
In relation to a discharge of a contaminant or an emission of noise, means the best method for preventing or minimising the adverse effects on the environment having regard, among other things, to:
(a) The nature of the discharge or emission and the sensitivity of the receiving environment to adverse effects; and
(b) The financial implications, and the effects on the environment, of that option when compared with other options; and
(c) The current state of technical knowledge and the likelihood that the option can be successfully applied.

**Biodiversity**
The variability among living organisms from all sources including, among other things, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems.
Biogas
Energy produced by the anaerobic digestion of organic material, which can be used as a fuel.

Biological Control
The use of living organisms as agents for the active management of other organisms.

Biota
All living components of the environment, excluding humans.

Board of Enquiry
A board of inquiry appointed under section 146 to consider an application for a resource consent or a board of enquiry appointed under section 46.

Built Environment
Those man-made facilities and structures, including urban environments and their associated amenity values, that are utilised by Otago’s communities for their social, economic and cultural well being, and the relationships that exist between them.

Catchment
The total area from which a single water body collects surface and subsurface runoff.

Coastal Environment
The coastal marine area, as well as land and river components within which activities directly affect, or are affected by, matters occurring in the coastal marine area.

Coastal Marine Area
The foreshore, seabed and coastal water, and the air space above the water

(a) Of which the seaward boundary is the outer limits of the territorial sea.
(b) Of which the landward boundary is 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:
(i) One kilometre upstream from the mouth of the river; or
(ii) The point upstream that is calculated by multiplying the width of the river mouth by 5.

Cogeneration
The simultaneous or sequential production of two or more forms of useful energy from a single primary energy source.

Conditions
In relation to plans and resource consents, includes terms, standards, restrictions, and prohibitions.

Consultation
See Section 1.12.

Contaminant
Includes any substance (including gases, liquids, solids and micro-organisms) or energy (excluding noise) or heat, that either by itself or in combination with the same, similar, or other substances, energy or heat:
(a) When discharged into water, changes or is likely to change the physical, chemical or biological condition of water; or
(b) When discharged onto or into land or into air, changes or is likely to change the physical, chemical, or biological condition of the land or air onto or into which it is discharged.

Discharge
Includes emit, deposit and allow to escape.
**Ecosystem**
A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

**Effect**
Section 3 of the Resource Management Act defines the term effect as including:
(a) Any positive or adverse effect; and
(b) Any temporary or permanent effect; and
(c) Any past, present, or future effect; and
(d) Any cumulative effect which arises over time or in combination with other effects - regardless of the scale, intensity, duration or frequency of the effect, and also includes -
(e) Any potential effect of high probability; and
(f) Any potential effect of low probability which has a high potential impact.

**Energy Conservation**
Reducing energy use in order to conserve the source from which the energy was produced.

**Energy Efficiency**
Producing the desired energy result in the most effective and efficient way with application of the best available technology.

**Environment**
Includes:
(a) Ecosystems and their constituent parts, including people and communities; and
(b) All natural and physical resources; and
(c) Amenity values; and
(d) The social, economic, aesthetic, and cultural conditions which affect the matters stated in paragraphs (a) to (c) of this definition or which are affected by those matters.

**Erosion**
The processes of the wearing away of the land surface by natural agents and the transport of the material that results.

**Estuary**
A broad tidal area associated with a river where there is a mixing of saline and fresh water.

**Eutrophication**
Process by which water (usually freshwater) becomes rich in nutrients, causing excessive plant growth which kills animal life by deprivation of oxygen.

**Fauna**
All the animal life of a given place or time.

**Flora**
All the plant life of a given place or time.

**Foreshore**
Any land covered and uncovered by the flow and ebb of the tide at mean spring tides and, in relation to any such land that forms part of the bed of a river, does not include any area that is not part of the coastal marine area.

**Fresh Water**
All water except coastal water and geothermal water.
Greenhouse Gases
Gases in the earth’s lower atmosphere (eg. CO₂ methane, nitrous oxide) that cause the global “greenhouse” effect. This is a natural effect that traps heat in the atmosphere near the earth’s surface.

Groundwater
Water that occupies or moves through pores, cavities, cracks and other spaces in crustal rocks.

Habitat
The place or type of site where an organism or ecological community naturally occurs.

Hazardous Substances
Any substance:
(a) With one or more of the following intrinsic properties:
   (i) Explosives;
   (ii) Flammability;
   (iii) A capacity to oxidise;
   (iv) Corrosiveness;
   (v) Toxicity (both acute and chronic);
   (vi) Ecotoxicity, with or without bioaccumulation; or
(b) Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.

Healthy Communities
The concept of healthy communities refers to the health promotion action guidelines from the Ottawa Charter. This was developed at the first International Conference on Health Promotion held in Ottawa in 1986 under the auspices of the World Health Organisation.

Heritage Site
Any place or object of special cultural, architectural, historical, scientific, ecological or other interest, or of special significance to the tangata whenua for spiritual, cultural or historical reason.

High Class Soils
Soils that are capable of being used intensively to produce a wide variety of plants including horticultural crops. This definition requires good soil and other resource features that in combination are capable of producing a wide range of crops. It does not include areas that may be suited to one or two specialist crops, largely due to the climate rather than soil quality.

Indigenous Species
A native species of New Zealand.

Infrastructure
Those built structures necessary for operating and supplying essential utilities and services to the community including, but not limited to, facilities for the distribution or transmission of natural or manufactured fuel, telecommunications and radiocommunications facilities, facilities for the transmission and distribution of electricity, facilities for the distribution of water for supply purposes, drainage and sewage reticulation schemes, facilities for land, air or rail transport, and airport facilities (including approach control facilities).

Instream Values
Those uses or values of rivers and streams that are derived from within the river system itself and include those associated with freshwater ecology and recreational, scenic, aesthetic, intrinsic and educational uses.
**Intractable Wastes**
Substances which cannot be treated by physical, chemical, or biological means, or for which treatment is possible but impractical because of incompletely developed technology, cost or danger, or because the technology does not yet exist in New Zealand.

**Intrinsic Values**
In relation to ecosystems, means those aspects of ecosystems and their constituent parts which have value in their own right, including:
(a) Their biological and genetic diversity; and
(b) The essential characteristics that determine an ecosystem’s integrity, form, functioning, and resilience.

**Issue**
A matter of concern to the region’s community regarding activities affecting some aspect of natural and physical resources and the environment of the region. These matters are addressed in the Regional Policy Statement as either significant resource management issues of the region or as resource management issues of significance to iwi.

**Iwi Resource Management Plans**
Such plans provide iwi with the vehicle to express their resource management needs and expectations, and how authorities may help achieve these needs. They are a basis from which consultation can occur. Regional and territorial authorities must have regard to relevant planning documents prepared or recognised by iwi authorities.

**Iwi Authority**
The authority which represents an iwi and which is recognised by that iwi as having authority to do so. (Note that the Te Runanga o Ngai Tahu Act 1996 granted iwi authority status for Te Runanga o Ngai Tahu.)

**Kaitiakitanga**
The exercise of guardianship; and, in relation to a resource, includes the ethic of stewardship based on the nature of the resource itself.

**Lake**
A body of fresh water which is entirely or nearly surrounded by land.

**Land**
Includes land covered by water and the air space above land.

**Land Drainage**
The act of taking off or diverting water from the land by artificial channels, pipes or other means.

**Landuse Capability Classes**
Landuse Capability classes define land units based on their capacity for permanent sustained production. This capacity depends largely on the physical qualities of the soil and the environment. Such factors include altitude, slope, geology, soil type, vegetation, and erosion. The Land Resource Inventory worksheets were prepared by the former Ministry of Works and Development and published by the former National Water and Soil Conservation Organisation (NWASCO).

**Landfill**
A waste disposal site used for the controlled deposit of solid wastes onto or into the land.

**Landscape Feature**
Any portion of land that, because of its character, physical form, cultural associations, intrinsic or amenity value or other value, or visual appeal, is regarded as of special interest by the community.
Leachate
Liquid effluent from Landfills.

Local Authority
A term that collectively describes regional councils, city councils, and district councils.

Mean High Water Springs (MHWS)
The average line of spring high tide.

Method of Implementation
The practical action by which a policy is implemented.

MW
Megawatt or one million watts. One megawatt is enough power to supply the peak electricity needs of roughly 500 houses.

Natural and Physical Resources
Includes land, water, air, soil, minerals and energy, all forms of plants and animals (whether native to New Zealand or introduced), and all structures.

Natural Hazard
Any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment.

Noise
Includes vibration.

Non-point Source Discharge
Runoff or leachate from land, onto or into land, air, a water body or the sea.

Objective
The desired result, end state, situation or condition that is aimed for.

Ozone Layer
Layer of gaseous ozone in the stratosphere that protects life on Earth by filtering out harmful, ultra violet radiation from the sun.

Person
Includes the Crown, a corporation sole, and also a body of persons, whether corporate or unincorporate.

Point Source Discharge
A discharge from a specific and identifiable source, onto or into land, air, a water body or the sea.

Policy
The course of action to achieve the objective.

Policy Statement
A regional policy statement.

Primary Production
The unprocessed product of any form of farming, forestry, aquaculture, viticulture, horticulture etc, and any collection or harvesting of wildlife.

Regional Land Transport Strategy

Riparian Margins
A strip of land adjacent to a water body which is frequently moist, and which generally extends from the perceived change in contour of the flood plain to the water body itself.
**River**
A continually or intermittently flowing body of fresh water; and includes a stream and modified watercourse; but does not include any artificial watercourse (including an irrigation canal, water supply race, canal for the supply of water for electricity power generation, and farm drainage canal).

**Soil Degradation**
A change in soil properties that causes a long-term decline of productivity. Includes soil erosion, chemical contamination, and physical and biological changes to topsoil and subsoil, and topsoil compaction, loss of permeability, loss of fertility, increasing acidity, loss of organic matter and declining biological activity.

**Structure**
Any building, equipment, device, or other facility made by people and which is fixed to land; and includes any raft.

**Territorial Local Authority**
A term that collectively describes city councils and district councils, but not regional councils.

**The Act**
In this Regional Policy Statement, reference to “the Act” means the Resource Management Act 1991.

**Unauthorised Practices**
Those practices that do not have the necessary resource consent, are not provided for by a regional or district plan, or are in breach of any resource consent condition.

**Water Body**
Fresh water or geothermal water in a river, lake, stream, pond, wetland, or aquifer, or any part thereof, that is not located within the coastal marine area.

**Wetland**
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.
5. Purpose

(1) The purpose of this Act is to promote the sustainable management of natural and physical resources.

(2) In this Act, “sustainable management” means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety while -

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) Avoiding, remediating, or mitigating any adverse effects of activities on the environment.

6. Matters of national importance

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

7. Other matters

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to:

(a) Kaitiakitanga:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) Recognition and protection of the heritage values of sites, buildings, places, or areas:

(f) Maintenance and enhancement of the quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon.

8. Treaty of Waitangi

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).