Waitaki Catchment

Recreation and Tourism Activities

Collation, synthesis and presentation of existing studies

Written report

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1 Executive Summary

This report collates and synthesises information from existing studies and personal accounts from people who have an interest in recreation and tourism activities which are supported by or associated with water bodies in the Waitaki Catchment.

Information revealed Aoraki/Mt Cook National Park is an icon site within New Zealand recreation and tourism. The park attracts high numbers of New Zealand and overseas visitors to participate in nature based recreation activities. While water use is not a key feature of most outdoor recreation activities in the park, the condition of the general environment in which people experience activities effects their experience.

The most significant effect of changing water use for visitors' to Aoraki/Mt Cook experiences is likely to be on their perceptions of landscape and the naturalness of the environment they are visiting.

The upper catchment is at least a nationally significant fishing area due to its scenic value, number of fishing opportunities, general reputation as a fishing area and anecdotal evidence of popularity for out-of-region New Zealand and overseas anglers. Popularity is predicted to increase from both international and domestic users due to general growth in the area. Changing water use will affect experiences through altering fish habitat and scenic values.

Use of the lakes and rivers in the upper catchment is generally popular for summer water based activities such as power boating, rowing, sailing and kayaking. These activities attract large numbers of visitors to the area for summer holidays and events. Changed water levels are likely to affect all water based activities. The extent is related to the amount of change to water levels. Under current conditions all of the current activities are predicted to grow in popularity.

Currently some activities, such as kayaking and rowing on Lake Ruataniwha, are facilitated through planned water releases and water level management by Meridian Energy Limited. Other activities, in particular boating are hindered by low water levels in lakes which can make launching difficult, particularly during the early summer.

Off water activities are predicted to grow in popularity in the upper catchment. In particular, as a result of increased area of public conservation land gained through the tenure review process, walking, tramping, hunting, mountain biking, and four wheel drive use are predicted to experience growth.

Skier days as a result of snow making are also predicted to increase. General tourism is predicted to grow as a result of the Mackenzie Heritage Centre development planned to open in 2006. Growth in activities such as scenic flights, gliding and heli-biking is also predicted as a result of general growth in the area. Tourism growth is likely to stimulate development in local communities. For communities and tourism activity providers to grow there needs to be confidence in water availability for towns and businesses.

Tourism activities in the area rely on natural experiences and scenic values. It is unclear what influence changes to water use will have on scenic attributes and subsequently tourism activities.

There are a large number of water-based recreation activities in the lower catchment. Currently the most popular activities are power boating and sailing in various forms on the lakes and fishing, shooting and jet boating on the lakes and rivers. Commonly activities are based around summer holiday visits to the area which often include camping.

Factors which reflect the significance of the Waitaki River for fishing are: three major fish species can be caught on the same river; the size of the river allows for solitude and limited interaction with others; the size of fish caught. Fishers from outside the area are reported to commonly visit the Waitaki River to fish it for a week at a time. The lower Waitaki provides a unique "big river" experience, which is likely to continue to attract both New Zealand and international visitors.

Modification of the Waitaki River is likely to impact fishing experiences, as it will change the current 'big river' experience. The extent habitat and experiences are changed would be determined by the amount of impact. Changes are likely to be less fish habitat and lower fish numbers; increased fishing intensity; decrease in the number of braids in the river; greater access to the river.

Fish & Game New Zealand considers the Waitaki River and associated wetlands outstanding publicly accessible gamebird hunting and waterfowl habitats of at least regional importance. Water flows are likely to decrease habitat and change hunter experiences.

The Waitaki River is a significant river for jet boating because of its large braided nature. Water flow levels affect jet boating experiences. Lowering water levels would reduce the 'big river' experience, number of braids in the river and reduce the quality of the experience. This is likely to lead to greater conflict between fishers and boaters. A constant lower river flow would make it more predictable. This is predicted to increase its appeal for novice boaters but decrease its appeal for experienced boaters.

The lower Waitaki is not currently a highly visited international tourist destination. Growth is reported though and the development of community initiatives and the alternative travel route between Christchurch and Queenstown is likely to increase its significance.

The lakes are a significant summer holiday destination for many predominantly local visitors. The Waitaki River attracts a considerable number of visitors especially during the height of the salmon fishing season.

The Vanished World enterprise is an example of how future tourist development could occur in the lower Waitaki. It is a community driven project that is based on strong cooperative partnerships and community support. Other tourism initiatives based on the same principles are likely to be equally successful.

Tourism development based on significant industries such as viticulture have been proposed. There is immense potential to develop a tourism industry that plays to the existing strengths of the area. Strengths include nature based experiences and local culture and heritage.

2 Introduction

This *Written Report* and companion *GIS Report* present an understanding of the recreation and tourism activities undertaken within the Waitaki Catchment supported by or associated with water bodies. The reports collate, synthesise and present information from existing studies and the personal accounts of people who have an interest in recreation and tourism use of the Waitaki Catchment.

Information collation began by searching for existing studies into recreation and tourism in the catchment. The methods used were: library and internet searches; discussion with Lincoln University and University of Otago recreation and tourism academics; recreation and tourism consultants; recreation interest groups; community groups; regional tourism organisations; councils; Environment Canterbury; Department of Conservation; Fish & Game New Zealand; Tourism Research Council; SPARC; tourism operators and recreation participants.

Published reports into recreation and tourism were used. One study based on primary research was the National Anglers Survey conducted by NIWA for Fish & Game New Zealand, 2003. This study presented the number of fishers who use individual water bodies and also showed popularity trends.

Another study, based on primary research into recreation use, was the Boffa Miskell, Rob Greenaway & Associates *Project Aqua: Recreation Effects Assessment Report for Project Aqua, 2003*. The general descriptive information contained in this study was useful for this report but because of the survey conditions during the study period most of the primary research findings were not used in this report. There are no recent studies that cover the whole catchment.

Other sources were also collected to provide the best possible picture of current recreation and tourism use. General studies by the Tourism Research Council for Regional Tourism Organisations were interpreted to present a general picture of tourism use in the catchment. Published material reviewing the area for individual activities was used to provide a general description.

Numerous people were contacted to develop a general picture of current and past activities and to enable presentation of activities that will be affected by water use. The result is a collation of the information uncovered and a summary relative to particular activities.

This report is a presentation of the current picture of recreation and tourism use in the Waitaki Catchment based on the best available knowledge the authors could uncover. The reader can gain an understanding of current recreation and tourism use of the catchment supported by or associated with water bodies, future trends and the effect changing water use is likely to have on activities.

The report is divided into three sections: Aoraki/Mt Cook; upper catchment; and lower catchment. The Aoraki/Mt Cook section discuses recreation and tourism together and the other two sections discuss recreation and tourism separately.

The companion *GIS Report* spatially presents the recreation and tourism activities that occur in the catchment and where. This report is predominantly based on material prepared by Environment Canterbury (2004) to assess use of water bodies in Canterbury. Other GIS maps have been created and added to this base data set.

The *Written Report* and *GIS Report* can be read separately but will enhance the understanding of each other if read together.

For each topic there is a summary table followed by the information which supports each table. The summary tables include:

- information summary – a general discussion of each activity
- quantitative data – a collation of available quantitative information
- significance – the significance of each activity where this can be provided
- future trends – an assessment of what is likely to happen relative to this activity in the future.
- water flow level influence – water changed water flow conditions are likely to have on the activity, based on available information
- information sources – a list of information sources that provided information
- information explanation and assessment – assessment of the information that was included in the report
- information coverage – an assessment of how adequate the information used was for to meets this report's objectives
- GIS maps in companion report – page numbers of relevant maps in the companion GIS report.

3 Overview Studies

Some general descriptive studies were found. The most notable of these is Stevens' 1974 Waitaki Catchment recreation study. It describes recreation activities of the 1970s without engaging in primary research. Kerr (2004) attempts to calculate the value of recreation in the lower catchment. This report is again not based on primary research and resulted in providing broad recreation value statements. Other studies, such as Baxter (1984) and Steven (1987), are examples of studies that give insight into small portions of the catchment activities. These studies are briefly discussed below as examples of general studies about the Waitaki Catchment that were found.

Stevens WJ. 1974. *Recreation in the Waitaki: A Project Submitted in Partial Fulfilment of the Requirement for the Diploma of Natural Resources*. Lincoln University.

This research took a general look at recreation in the catchment. Because of the size of the area and the number of activities to cover the work is a very general description of recreation at the time. "I can only hope to present an adequate outline of the study area as it exists at present, the recreational activities and the facilities which serve them and any likely future developments which may occur" (Stevens, 1974, p. 1).

The aim of the work was to describe the importance of recreation in the area and within the context of the time it was written, pleaded for recreation to be considered alongside other factors, such as hydro-electricity planning when deciding on what future use of the area should be made. In talking of water body-based recreation, Steven's makes this comment: "Much work remains to be done if any quantitative assessments are to be made of the numbers of people who use them and what sort of activity they prefer but this was obviously somewhat outside the scope of a limited reports such as this one" (Stevens, 1974, p. 29).

The value of this study is that from a recreation perspective the issues currently being discussed are not new and the challenge faced by this study still remains. The study encouraged others to go and do further work to gain a better understanding of recreation in the catchment. In most cases this work is still to be completed.

Kerr GN. 2004. *Lower Waitaki River Recreation Use Values: Report to Anderson Lloyd Cudwell*. Lincoln University.

This report sought to identify the Waitaki River recreation values: "This scoping study seeks to identify the likely order of magnitude of lower Waitaki River recreation values, based on existing information. It does not address existence values" (Kerr, 2004, p. 3).

The report states, "Despite the river's popularity for recreation, there is very little information on Waitaki River recreation values. No primary research has been undertaken to measure the values of Waitaki River recreation activity levels, apart from fishing" (Kerr, 2004, p. 3).

The method used was: "(1) estimation of the value associated with each unit of recreation use, and (2) estimation of the amount of recreation use" (Kerr, 2004, p. 4).

The estimations used in the study were very broad and lead to this conclusion: "It is not possible to estimate the value of lower Waitaki River recreation with any precision" (Kerr, 2004, p. 13). The report also states: "The lack of information on activity levels has required some rather bold assumptions to be made" (Kerr, 2004, p. 13). Keeping in mind the very general information the report is based on, it makes this judgement: "The value of all recreation on the lower Waitaki River is likely to be considerably less than $2.5 million per year" (Kerr, 2004, p. 13).

Baxter PJ. 1984. *Visual Impact with Drawdown: With Reference to the High Country Lakes of the Upper Waitaki Valley, New Zealand.* Study submitted in partial fulfilment of the requirements for the Diploma in Landscape Architecture. Lincoln College.

This study provides a way to assess the environmental impacts caused by environment change. It discusses the changes in lake levels and the visual impacts that this creates. The approach of using layers to show different options for the same scene could be used in conjunction with the *Q method* used in the Lincoln University tourism studies to assess tourism scenic value preferences.

Steven JC. 1987. *Commercial Recreation in the Pastoral High Country: Clarification of the Issues.* A written report on a project submitted in partial fulfilment of the requirement for the degree of Master of Science in Resource Management. Lincoln University.

This thesis is a general review of commercial recreation in pastoral high country. It proposes a management framework but is not specific enough for this project.

4 Mt Cook National Park

4.1 Recreation and tourism overview

4.1.1 Mt Cook National Park recreation and tourism summary

Topic	Mt Cook National Park recreation and tourism summary
Information summary	Aoraki/Mt Cook is a place of high spiritual significance for Maori and is a recreation and tourism icon. This is acknowledged throughout the management plan. Preserving the existing qualities is the challenge for management. The unique values of the park are considered to be, the physical beauty and climbing challenge of the array of high peaks, the sheer size of the glaciers, the endemic flora and fauna and the extent of opportunities for scenic ski-plane landings in a mountainous area. The longer the park's natural features are preserved the more valuable they will become. The main recreational features are: New Zealand's premier climbing location, tramping, walking, skiing on the Tasman Glacier, heli-skiing; flying, scenic views, boating on pro-glacial lakes, biking, guided treks, 4WD tours, night star observations, short walks, school visits and visits to the Park Visitor Centre in the Village. Scenic flights are an important way for visitors to see the park and involve landings on Tasman and other glaciers. Flights also give access for climbers, hunters, Tasman Glacier day skiers and heli-skiers. There are a number of short walks, day walks and overnight tramps (listed below). There is a range of accommodation provided, from The Hermitage to camping, with a full range of options in between. There are about 600 beds available in the village for visitors. The vision for Aoraki/Mt Cook village is that it "has the potential to become New Zealand's best known visitor destination. It should exhibit an exemplary level of environmental quality and visitor experience. It should reflect a distinctive New Zealand natural and mountain character in relation to its site planning, design and architecture. It should explicitly demonstrate the relationship that the tangata whenua, Ngāi Tahu, has with the area". Park management attempts to balance preserving the natural environment and visitor's experiences and commercial development. DoC-managed concessions allow commercial businesses to operate in the park and allow many visitors to have a more rewarding experience. The most significant recreation activities are scenic flights, commercial tramping and climbing guides and heli-skiing.
Quantitative data	Annual visits to the Village were estimated for 2001 to be in excess of 250,000. Approximately 30% of visits are by New Zealanders, while the remaining 70% are by overseas tourists, primarily from Japan, USA and Australia. Day visits comprise approximately 67% of total visits. The National Park is a significant stopping point on tours of the country by overseas tourists. For State Highway 80, July to June 2004, 276,000 vehicles were recorded on the road travelling in either direction. 100,000 trampers estimated to use the area in 2003/2004. For 2003 (July) to 2004 (June) there were 12,000 bed nights in huts comprising: • 3200 at Mueller Hut (likely trampers) • 8800 other huts (likely climbers). Aoraki/Mt Cook National Park has an area of 70,728 hectares, with headquarters at Aoraki/Mt Cook Village. Aoraki/Mt Cook is New Zealand's highest mountain rising 3754 metres above sea level and the park includes most New Zealand peaks over 3000 metres high.

Topic	Mt Cook National Park recreation and tourism summary
Significance	Aoraki/Mt Cook has high spiritual significance for Maori and especially so for Ngāi Tahu. Aoraki/Mt Cook is a nationally significant recreation and tourism site. It attracts climbing parties from all over the world. New Zealand's tourism industry is based on experiencing nature in unique ways. Experiencing picturesque Aoraki/Mt Cook landscapes or being able to land on the glaciers is a highly significant tourism experience. This significance is only predicted to grow the longer it is preserved in its natural state and visitors are able to experience it.
Future trends	Aoraki/Mt Cook is predicted to continue to be a key recreation and tourism destination. Its popularity is likely to grow proportional with overall New Zealand tourism growth. This could be enhanced though with increased tourism activity and accommodation development in the surrounding area such. Developments that are likely to stimulate growth are likely to be increased skier numbers and visitors to the Mackenzie Heritage Centre planned for 2006.
Water flow level influence	Changes in water use is not likely to directly affect Aoraki/Mt Cook, although water is needed to service the village and the services it provides. The most significant effect of changing water use is likely to be on visitors' experiences and their perceptions of landscape and the naturalness of the environment they are visiting. Without primary research of visitor's experiences, what is likely to be changed for them, and to what extent, cannot be predicted.
Information sources	Erik VanderSpek (Department of Conservation – Programme Manager –Recreation) Department of Conservation. 2004. *Aoraki/Mt Cook National Park Management Plan.* Retrieved 28 October 2004, from http://www.doc.govt.nz. AC Nielsen. 2002. *New Zealand Product: Potential and Actual Visitor Feedback from Key Markets*. Tourism New Zealand.
Information explanation and assessment	The information provided is based on Department of Conservation's (DoC) management plan, DoC monitoring and AC Nielsen product research. Commercial operators were not prepared to provide information about client numbers because of commercial sensitivity. Some understanding of visitor's experiences comes from the AC Nielsen research which states that satisfaction is high and visitors' value 'real New Zealand' operators and spectacular scenery.
Information coverage	The information provided gives a general overview of activities within the park and likely numbers of users. The information provided does not give precise user numbers or their demographic profile. If required the demographic profile of visitors is likely to be obtained through further research. Information is not available that would make possible confident predictions of the effect changes in water use in the surrounding area would have on visitors' experiences.
GIS maps in companion report	Refer to pages 4, 5, 10.

4.1.2 Mt Cook National Park recreation and tourism information

Erik VanderSpek (Department of Conservation – Programme Manager – Recreation)

The Department of Conservation does not have consistent and reliable visitor track use monitoring, although this is currently being improved with the installation of new visitor counters.

From the information available, these are the most accurate estimates.

- There are 100,000 trampers using the area.
- For 2003 (July)–2004 (June), there were 12,000 bed nights in huts comprising:
  - 3200 at Mueller Hut (likely trampers)
  - 8800 other huts (likely climbers).

  Note: figures are not a total number of users as figures do not include those not using huts.
- The Hooker Valley track is the most popular track.
- The road count for State Highway 80, July to June 2004, recorded 276,000 vehicles. This figure needs to be divided by two to show the number of vehicles travelling into the park as vehicles cross it twice travelling in and out. Also, not all vehicles are tourist traffic. The number of tourist vehicles and numbers of visitors has not been calculated using this road count and as a raw figure provides a general indication of use.

Walks administered by the Department of Conservation

Location within Waitaki Catchment	Name of walk	Difficulty	Length
Aoraki/Mt Cook National Park	Governors Bush Walk	Walking track	1 h return
	Bowen Bush Walk	Walking track	10 min return
	Glencoe Walk	Walking track	30 min return
	Red Tarns Track	Walking track	2 h return
	Sealy Tarns Track	Tramping track	3-4 h return
	Kea Point Walk	Walking track	2 h return
	Hooker Valley Track (Hooker Lake)	Walking track	4 h return

AC Nielsen 2002. *New Zealand product: Potential and Actual Visitor Feedback from Key Markets*. Tourism New Zealand

Visits to Mt Cook

Overall satisfaction: 45% rating it as superb (top third of all activities).

Strengths:

- friendly 'real New Zealand' operators/guides, passionate and knowledgeable about Mt Cook and surrounding area
- spectacular scenery (AC Nielsen, 2002, p. 85)

Aoraki/Mt Cook National Park Management Plan September 2004

Department of Conservation 2004. *Aoraki/Mt Cook National Park Management plan.* Retrieved 28 October 2004, from http://www.doc.govt.nz

The recently released Mt Cook *Aoraki/Mt Cook National Park Management Plan (2004)* has provided a current description of management and recreation experiences in the National Park.

Preface

... Aoraki Mt Cook National Park is home to New Zealand's highest mountain, which is also highly significant to Ngāi Tahu as their most sacred mountain. It is a park of dramatic landscape, harsh alpine conditions and many moods, a magnet to recreationalists and tourists alike for a century in the past and assuredly many centuries into the future. The challenge for management, addressed in this Plan, is to achieve a balance between preserving the values of this park for their intrinsic worth and for the benefit, use and enjoyment of future generations while enabling those living now to experience its natural character and raw magnificence to the fullest ...

1 Introduction

... Aoraki/Mt Cook National Park protects qualities and attractions that range from historic features of local interest, through ecosystems of national scientific importance, to major physical features of international significance. The park, together with Westland/Tai Poutini and Fiordland National Parks, comprised New Zealand's first world heritage area in 1986. In 1989 the much larger 2.6 million hectare South West New Zealand (Te Wahipounamu) World Heritage Area included the three parks, recognised by the United Nations Educational Scientific and Cultural Organisation (UNESCO) as one of the world's outstanding natural areas.

The park is unique in the New Zealand context in that it contains a cross-section of landforms and vegetation that extends from the South Island high country's braided riverbeds to the highest peaks of the Southern Alps/Ka Tiritiri o te Moana. It also includes New Zealand's highest mountain Aoraki/Mt Cook, which is also highly significant to Ngāi Tahu as their most sacred mountain.

Public recreation and tourism interests in the best-known features, the mountains and the glaciers, have been significant for over a century. For this reason, accommodation, guiding and ski plane services have a long-standing tradition in the park.

The park has been established to preserve its valued scenery, ecological systems and natural features in perpetuity. These values can be considered scarce and irreplaceable. As development proceeds elsewhere, they will become even more valuable, which may bring greater pressure on them ...

1.3 Background

1.3.1 Introduction

The imposing nature of the Aoraki/Mt Cook region has captured the imagination of New Zealanders and the world at large. The core of the area was first given a protection status in 1885 and, subsequently enlarged, it was declared a national park in 1953 following the passing of the National Parks Act 1952. Since then it has been managed under the twin aims of the New Zealand national park philosophy; preservation as far as possible in its natural state and freedom of entry and access for public enjoyment. Currently (in 2004) Aoraki/Mt Cook National Park has an area of 70,728 hectares, with headquarters at Aoraki/Mt Cook Village.

1.3.3 The park – physical character and location

Aoraki/Mt Cook National Park is situated on the eastern flank of the Southern Alps/Kā Tiritiri o te Moana. Although at one of the narrower parts of this chain of mountains, the park contains Aoraki/Mt Cook, New Zealand's highest mountain rising 3754 metres above sea level and includes most New Zealand peaks over 3000 metres high.

The park extends along the main dividing ridge of the Alps for some 65 kilometres and shares a common boundary with Westland/Tai Poutini National Park for some 40 kilometres, but nowhere does it extend more than 15 kilometres from the Main Divide. It occupies the head of the Tasman and Godley Valleys, whose glaciers drain into the rivers and lakes of the vast inland basin of the Mackenzie Country.

The park has a harsh environment. Over a third of the area consists of permanent snow and ice, while most of the remainder is steep actively eroding mountain lands. Only a small proportion of the park, in the Godley, Tasman and Hooker Valleys, is flat land.

1.3.4 Park heritage

Ngāi Tahu and earlier Māori activity in the area is believed to have been primarily for ceremonial and spiritual reasons, along with seasonal food gathering, particularly for birds and kiore. There is some evidence for Godley Glacier-Sealy Pass alpine crossings for pounamu (Andersen, 1916). ... Māori traditions are strongly associated with the area; many geographical features are named, and Māori had a good understanding of ice and snow. As set out in, Aoraki the mountain holds a special significance for Ngāi Tahu.

... Also remaining is the heritage of climbing, with and without guides, that has seen the Aoraki/Mt Cook region become and remain, the premier climbing locality in New Zealand ...

1.3.5 Recreational and tourism values

For much of the early European history of the Aoraki/Mt Cook region, it was only an intrepid few who managed to make their way to the mountains. Gradually visitor numbers increased over the years. The ongoing attraction has been the active and passive enjoyment of the scenic splendour of the park, through climbing, skiing, walking, flying or just sitting, while appreciating the park's natural and cultural values. This attraction is well set out in The Alpine World of Mt Cook National Park (Dennis and Potton, 1984).

Factors leading to increased visitor use have been the Hermitage Hotel since 1884, a growing number of mountain bivouacs and huts since 1891 and later club and public accommodation near or at the Aoraki/Mt Cook Village. Other factors have been the ski plane flights from 1955, construction of the Mt Cook Airport in 1960, upgrading of State Highway 80 to its present high standard in 1975 and ongoing developments in the Village. Annual visits to the village were estimated for 2001 to be in excess of 250,000. Approximately 30% of visits are by New Zealanders, while the remaining 70% are by overseas tourists, primarily from Japan, USA and Australia. Day visits comprise approximately 67% of total visits. The National Park is a significant stopping point on tours of the country by overseas tourists.

Most visitors restrict their visit to the village environs (see Figure 3) and, to a lesser extent, aircraft flights. Visitors in the wider park area are predominantly hut-based and total about 7000 bed nights yearly.

Vehicle access is limited to two routes into the park. State Highway 80 is a sealed route to Aoraki/Mt Cook Village and runs along the western side of Lake Pukaki. Visitors arriving by the highway travel either independently or on bus tours. The other route is a four-wheel drive vehicle track up the Godley Valley beyond Lilybank Station.

Aircraft access is a less regular means of arriving at the park, but a major feature of public use in and over the park. The majority of the visitors arriving by or using aircraft are overseas tourists. A fleet of ski equipped aircraft based at Aoraki/Mt Cook Airport provides tourist flights over the park and landings on the Tasman and other glaciers. These aircraft also fly climbers to designated landing sites in the park. Helicopters operate mainly from sites outside the park and fly in climbers, hunters, Tasman Glacier day-skiers and heliskiers, mainly when or where fixed-wing aircraft cannot be used. They also provide services to landing sites on the eastern and southern boundary of the park.

Several companies based outside the park offer fixed-wing and helicopter scenic flights over the park, but do not land within the park. Glentanner Park, some 14 kilometres south of the park boundary, also has a commercial airstrip.

Within the park, access is limited by the nature of the mountain environment. Apart from State Highway 80, the village roads and the Godley 4WD track, there are only two park roads, both unsealed. One runs to White Horse Hill where a campground is provided. The other is the Tasman Valley Road to the Blue Lakes/Tasman Glacier car park, although a 4WD track continues another 4 km to Husky Flat.

Walking tracks are concentrated around the Aoraki/Mt Cook Village environs, providing access to points of local interest and viewpoints. Beyond this localised area, there are only three other formed tracks of significance. One is up the Hooker Valley to the Hooker Glacier and lake (the valley currently attracts over 50,000 visits per year, approximately 20,000 of which are to the lake). Another is the old road-line from the end of the Tasman Valley Road some 8 km up to the Ball Shelter. The third is the track from the car park to Blue Lakes and the Tasman Glacier lookout. Walking routes also extend to Red Tarns and to Mueller Hut which by 2002 attracted over 1500 bed nights use per year (note that in 2003 the old 12-bunk hut was replaced with a 28-bunk one, with the expectation of increased visitor use).

Other attractions include skiing on the Tasman Glacier, heliskiing, boating on pro-glacial lakes, biking, guided treks, 4WD tours, night star observations, short walks, school visits and visits to the Park Visitor Centre in the village. Some visitors to the park come for a specific purpose, such as climbing or tramping, or in lesser numbers for hunting. For these park users, huts have been established, most publicly owned and administered by the Department, others owned by clubs but available for public use, and one concessionaire-owned and operated hut. Three club lodges, primarily available for club members, are sited near the village. One mountain guiding service operates from the village, while several others operate from bases outside the park.

With the exception of the park huts, the camping ground at White Horse Hill and the three club lodges, accommodation for Park visitors is located in Aoraki/Mt Cook Village. A range of commercial accommodation is provided, including the Hermitage Hotel and Glencoe Wing, motel units, chalets and YHA and Hostelling International, all currently owned by a single company, with the exception of the hostel. There are a total of about 600 beds available in the village for visitors ...

1.3.6 The park within the region

From a number of different perspectives, the park cannot be considered in isolation, but has to be regarded as part of a wider area. As a part of the Southern Alps/Ka Tiritiri o te Moana, the Aoraki/Mt Cook area contains some biological, landscape and recreational features which are duplicated elsewhere, but it also contains other features which are unique. This latter category includes the physical beauty and climbing challenge of the array of high peaks, the sheer size of the glaciers, the endemic flora and fauna and the extent of opportunities for scenic ski-plane landings in a mountainous area.

The national park is the source of much of the water flowing through the turbines of the Upper Waitaki and Waitaki River power stations and, as the head of the Waitaki Catchment, has an important water and soil conservation role. It is a significant area of biological and scientific interest in the Mackenzie Basin and in South Canterbury generally. Compared with other parts of the Mackenzie Basin, there are a number of disadvantages from a tourist point of view, such as lower sunshine hours, lower mean daily temperatures and higher rainfall, but these are balanced by the opportunity to travel among the mountains. The park is a popular destination on the tourist route from Christchurch to Milford Sound and provides employment opportunities and benefits to a number of district businesses and adjacent high country stations. One business, having a particularly direct relationship with the park, is Glentanner Park, approximately 20 km south of the park on State Highway 80. While still a pastoral lease, the lessees have in recent years diversified into other activities, including a motor camp, airfield, heliskiing and a restaurant. These activities complement those provided for in the national park and increase the range of visitor attractions available in the region. Pastoral farming, as found at Glentanner Station, with retirement or surrender of erosion-prone and high conservation value country, is typical of land management adjoining the Canterbury side of the national park.

On its western boundary Aoraki/Mt Cook National Park is closely linked with Westland/Tai Poutini National Park, sharing features including physical similarity, similar management objectives, and complementary visitor management settings, hut locations, radio networks and aircraft movements. There are several transalpine tramping/climbing routes (e.g. Copland Pass).

5.1.5 Village vision and principles

A "village vision" was developed through the Issues and Options Report process and is adopted here:

Aoraki/Mt Cook "... has the potential to become New Zealand's best known visitor destination. It should exhibit an exemplary level of environmental quality and visitor experience. It should reflect a distinctive New Zealand natural and mountain character in relation to its site planning, design and architecture. It should explicitly demonstrate the relationship that the tangata whenua, Ngāi Tahu, has with the area".

4.3.2 Concessions general

Many concessionaires operate in the park and provide a valuable service to visitors ...

4.3.3 Aircraft and airports

... Scenic flights are a significant means of use and enjoyment of Aoraki/Mt Cook National Park. The flights are for scenic observation, which implies gentler flying, not thrill-seeking. Scenic over-flights of the park operate with both helicopters and fixed-wing planes from outside the park. Ski planes and helicopters land at specified glacier snowfield and ridge-top sites. Aircraft are also used for access to mountain huts for climbers, to glaciers for skiers, and for heliskiing.

4.3.4 Guiding

... Professional alpine guides provide for a greater public use and enjoyment of the park than might otherwise be obtained. They provide the skills and experience necessary to guide clients through some of New Zealand's most challenging alpine terrain. In addition, clients gain an appreciation of the Park's natural, historic and cultural values and often learn the necessary skills to undertake alpine activities by themselves. Due to the nature of the park's alpine conditions it is essential that alpine guides are appropriately qualified. The New Zealand Mountain Guides Association currently certifies guides and can advise of suitable standards. (Department of Conservation 2004. Retrieved 28 October 2004, from http://www.doc.govt.nz)

5 Upper Catchment: Mackenzie (above Omarama)

5.1 On-water recreation activities

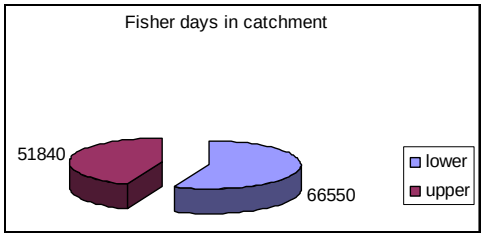
5.1.1 Fishing summary

Topic	Fishing summary
Information summary	The NIWA research suggests a trend for river fishing to be decreasing in popularity and lake fishing to be increasing in popularity. The reasons for this change cannot be known from the survey results. A combination of more people generally using lakes and hence more people fishing, and lower satisfaction due to fewer fish being caught in rivers is one possible explanation. Fishers also seem to have increased their use of hydro-electric canals for fishing. Compared with the national average, fishing has above average popularity in the Central South Island region, of which the Waitaki Catchment makes up a significant part. The fishers in this region are loyal and spend a lot of their time fishing within their own region compared with other New Zealand regions. NIWA has used the data from the National Angler Survey to make a simple assessment of different water bodies' significance for fishers. Catchment rivers that were specifically mentioned in the report considered nationally important were the Ahuriri and the Tekapo. The Tekapo was described as remarkable for attracting such a high proportion of fishers from outside the region. This section of the report contains descriptions taken from fishing guide books of the major water bodies in the upper catchment. The common themes that describe the many fishing experience in this area are: rainbow and brown trout are the most common species; significant changes have occurred through modification of water systems by hydro-electric development; the surrounding landscape at the foot of the Southern Alps provides a wonderful natural environment to fish in with wonderful natural scenery; depending on where the fisher ventures, fish stocks are plentiful; there is great variety allowing for freedom and isolation; water is clean and clear.

<table>
<tr><th>Topic</th><th>Fishing summary</th></tr>
<tr><td>Quantitative data</td><td>For the whole Central South Island regions these were the recorded fishing days:
<table>
<tr><td>Lake</td><td>30,800 ± 2.7</td></tr>
<tr><td>Reservoir</td><td>41,000 ± 2.5</td></tr>
<tr><td>Mainstem river</td><td>59,200 ± 3.8</td></tr>
<tr><td>Lowland river</td><td>10,600 ± 1.3</td></tr>
<tr><td>Back country</td><td>12,200 ± 1.1</td></tr>
<tr><td>Canal</td><td>14,l500 ± 2.4</td></tr>
</table>
Central South Island fish and game region:
<table>
<tr><td>Adult male population</td><td>34,700</td></tr>
<tr><td>Whole-season licences</td><td>5,520</td></tr>
<tr><td>Licences as % of adult males</td><td>14.3%</td></tr>
</table>
Visitors to the Central South Island region contributed an estimated 62,200 fishing days.

Central South Island licence holders recorded only 11,500 angler-days in other fishing regions.

Fisher days in the upper catchment compared with the lower catchment were:

The Tekapo attracted more respondents from outside the Central South Island region than from inside.</td></tr>
<tr><td>Significance</td><td>The NIWA results specifically mention the Ahuriri and the Tekapo Rivers as being nationally significant.

Overall, the scenic value of the area, number of fishing opportunities, general reputation of the upper catchment as a fishing area and anecdotal evidence of popularity for out-of-region New Zealand and overseas anglers would lead to the conclusion that the upper catchment is at least nationally significant for fishing. The NIWA results do not include fishers from overseas and so the significance that overseas fishers hold for the catchment cannot be confirmed.</td></tr>
<tr><td>Future trends</td><td>The NIWA results show an increase on overall fishing numbers from the 1994/96 survey to the 2001/02 survey. It can be assessed that fishing is likely to continue to increase in popularity.

As overseas fishing opportunities reduce due to human development, fishing opportunities like those offered in the upper catchment are likely to be more highly valued and used by overseas visitors.

Development of other activities in the region, such as skiing and the Mackenzie Heritage Centre is likely to increase overall year-round use of the area and this is likely to increase fisher numbers even further in the coming years.</td></tr>
</table>

Topic	Fishing summary
Water flow level influence	Many of the waterways of the upper catchment are already modified through hydroelectric development and this has substantially affected previous use. Despite this change fishing is still a very popular activity in the upper catchment. Further modification of waterways is likely to impact fishing experiences. The extent is determined by the amount of impact. The impacts are likely to be on fishing habitat and the ability for fishers to experience what they consider to be natural environments. How water is used is likely to affect fishing experiences. Scenic values are likely to be changed if there is greater irrigation use of water and change to landscapes. The impact of farming use on waterways could also impact fishers' experiences.
Information sources	Unwin U, Image K. 2003. *Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results for the 2001/02 National Angling Survey*. NIWA Client Report CHC2003–114. Unwin U, Deans N. 2003. *Travel Distance as an Index of Angling Value: A preliminary study base on the 2001/02 National Angling Survey*. NIWA Client Report CHC2003-113. Giles R. 2002. *Catch that Trout: Fishing the South Island of New Zealand*. Reed Publishing, New Zealand. Busch T. 2003. *Trout Fishing: A Guide to New Zealand's South Island* (5th ed). Bateman, Auckland. Kent J. 1998. *South Island: Trout Fishing Guide*. Reed Books, Auckland. Kent J, Madsen PM. 1997. *New Zealand's Top Trout Fishing Waters*. Reed Books, Auckland.
Information coverage	The quantitative information provided by the NIWA reports is the most comprehensive study of any activity in the catchment. It gives reliable assessment of New Zealand fishers and popularity of individual water bodies. The survey does not include international anglers which could be a significant number in the upper catchment. The survey does not explore fishers' experiences, the value they gain from recreational fishing and the value they place on the areas fished in the upper catchment.
Information explanation and assessment	Confidence can be placed in the data gained from the NIWA Angler Survey. The information sourced gives a good description of the number of fishers in the local area and also the number of fishers who use particular waterways. The NIWA travel distance report provides some initial analysis of the importance of individual rivers. The descriptive taken from fishing texts provides descriptive information about the fishing characteristics of individual waterways. Information is not provided from individual fishers and the experiences they have when fishing. There is no comprehensive survey of fisher use.
GIS maps in companion report	Refer to pages 18, 20, 22, 24.

5.1.2 Fishing information

Unwin U, Image K. 2003. *Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results for the 2001/02 National Angling Survey*. NIWA Client Report CHC2003-114.

This report provides estimates of angler effort for lakes and rivers managed by Fish and Game in New Zealand for the 2001/02 season. This was the second survey in the series and followed the first conducted from 1994 to 1996. New Zealand anglers were telephone surveyed over 12 months to assess where they had fished in the previous two months and the number of days spent on each water (Unwin and Image, 2003, p. i). The results showed that across New Zealand there were 1,111,000 ± 16,000 angler days. The authors consider one limitation of the report to be the non-surveying of international anglers (Unwin and Image, 2003, p. ii). Despite this limitation, this is the most reliable extensive information available about recreation use in the Waitaki Catchment.

Fisher numbers for Waitaki Catchment rivers are contained in Appendix One.

The Waitaki River and catchment is managed by Central South Island Fish and Game. The table below shows the number of fishing licences held in each fish and game region. "... the database thus provides a complete census of all licences issued for the 2001/02 season, based on the holder's region of residence rather than their licence region" (Unwin and Image, 2003, p. 17). The results in the table below show that compared with other regions in New Zealand fishing is a very popular activity for people living within the central South Island fish and game region.

> *... In central South Island and Southland, more than one out of every seven adult males held a whole-season fishing licence. By contrast, the equivalent figures for Wellington and Auckland/Waikato were 1:33 and 1:66 respectively. When broken down in terms of individual towns and population centres (Figure 2) the discrepancy in participation rates was even more apparent, with more licence holders living in Invercargill (2724) than in all of greater Wellington (2531), and almost as many in Ashburton, Timaru, and Oamaru combined (3520) as in greater Auckland (4001).* (Unwin and Image, 2003, p. 18)

Table 4: Sales of adult whole-season fishing licences (including family licences) for the 2001/2002 angling season, in relation to population figures from the 2001 Census, by FGNZ region

FGNZ region	Adult male population	Whole-season licences	Licences as % of adult males
Northland	46,000	216	0.4%
Auckland/Waikato	495,600	7,558	1.4%
Eastern	95,600	5,808	5.5%
Taupo Conservancy (DoC)	10,700	2,711	22.8%
Taranaki	48,300	1,406	2.6%
Hawkes Bay	43,700	2,440	5.0%
Wellington	197,600	5,936	2.7%
Total, North Island	**937,500**	**26,075**	**2.5%**
Nelson/Marlborough	43,900	2,010	4.1%
West Coast	10,900	921	7.6%
North Canterbury	138,200	8,868	5.8%
Central South Island	34,700	5,520	14.3%
Otago	56,400	7,430	11.9%
Southland	31,300	5,475	15.8%
Total, South Island	**315,300**	**30,224**	**8.6%**
Total, all New Zealand	**1,252,900**	**56,299**	**4.0%**

Note: The final column shows licence sales per adult male for each licence region, on the assumption that 90% of holders are male.

Source: Unwin and Image, 2003, p. 20.

Central South Island region fishers are not only prolific but spend a high proportion of their time fishing within their own region compared with other regions in the country: "... visitors to the Central South Island region contributed an estimated 62,200 angler-days to the total for that fishing region, whereas central South Island licence holders recorded only 11,500 angler-days in other fishing regions" (Unwin and Image, 2003, p. 24).

Also, "river fishing was particularly popular in North Canterbury, Central South Island, Otago, and Southland, accounting for a combined total of 418,000 angler-days, or 65% of the national total for rivers. Conversely, three fishing regions – Eastern, Central South Island, and Otago – accounted for 79% of all lake fishing. A full summary of angling within each fishing region, giving estimated totals for each water fished by two-monthly survey period, is given in Appendix 1" (Unwin and Image, 2003, p. 27).

> *Within the regions administered by FGNZ, river fishing was more popular than lake fishing, accounting for 58% of the total effort (Table 11). Most lake fishing (74.4%) occurred on lakes of natural origin, primarily in the eastern region and the lower South Island, but artificial reservoirs (particularly large hydroelectric impoundments) were also popular in Auckland/Waikato (e.g. Lake Arapuni); eastern (e.g. Lake Aniwhenua); central South Island (e.g. Lakes Aviemore and Benmore).* (Unwin and Image, 2003, p. 24)

... there is some evidence of a move from river fishing to lake fishing in 2001/02 (Table 13). Lake fishing effort increased by 30,100 ± 14,300 angler-days, while river fishing effort decreased by 74,800 ± 18,600 angler-days. The increase in lake fishing effort was most marked in the lower half of the South Island, particularly in the central South Island and Otago regions ... the decline in river fishing within the North Canterbury and central South Island regions appears to have been real, and reflects the poor salmon fishing season in 2001/02. Averaged over the whole country, lake fishing accounted for 38% of the total effort in 1994/96, compared to 42% in 2001/02. (Unwin and Image, 2003, p. 34)

The proportions of time spent on the different water types in the central South Island region are contained in the table below.

Table 14: Estimated angling effort (thousands of angler-days ± 1 standard error), by fishing region and type of fishery, for the 1994/96 and 2001/02 surveys

FGNZ region	Type of fishery	1994/96	2001/02	Difference	Significance
Central South Island	Lake	17.4 ± 1.6	30.8 ± 2.	2 13.4 ± 2.7	*** (+)
	Reservoir	27.9 ± 2.3	41.0 ± 2.5	13.0 ± 3.4	*** (+)
	Mainstem river	93.1 ± 4.4	59.2 ± 3.8	-33.9 ± 5.9	*** (-)
	Lowland river	16.4 ± 1.5	10.6 ± 1.3	-5.8 ± 2.0	** (-)
	Back country	9.4 ± 1.1	12.2 ± 1.1	2.9 ± 1.5	
	Canal	2.0 ± 0.7	14.5 ± 2.4	12.5 ± 2.5	*** (+)

Notes

- Tests of significance (based on a t-test, with one, two, and three stars corresponding to p values of 0.95, 0.99, and 0.999, respectively)
- n.d. = no data.

Source: Unwin and Image, 2003, pp. 37–38.

Notwithstanding the uncertainties associated with overseas angler usage, there were some marked changes in usage patterns at regional level, primarily in the South Island (Table 14). Totalled over the South Island, and based on unadjusted estimates, angler usage increased significantly for lake and reservoir fisheries, for back country fisheries, and for canal-based fisheries, and decreased significantly for mainstem and lowland river fisheries. However, the extent to which these trends were apparent differed markedly between fishing regions. The largest changes, in the North Canterbury and central South Island regions, were associated with the poor salmon season, with mainstem river fishing falling by almost one third (from 204,600 ± 9800 angler-days in 1994/96 to 140,100 ± 6200 angler-days in 2001/02). In the North Canterbury region, where there are no other waters able to sustain fishing on a comparable scale, the poor salmon season was directly reflected in substantially reduced effort for the region as a whole (Table 13). In the central South Island region, by contrast, anglers appear to have switched their attention to the many lake fisheries available, notably Tekapo, Alexandrina, Ohau, Benmore, and Aviemore.

... There was also evidence of a marked increase in effort on the various canals of the upper Waitaki hydroelectric schemes, which rose from 1900 ± 700 angler-days in 1994/96 to 13,500 ± 2300 angler-days in 2001/02. (Appendix 1, Unwin and Image, 2003, p. 36)

There is an assumption in the analysis above that fishers have changed their attention, but it could also reflect that there has been a decrease in fisher numbers on rivers because of the poor salmon season and there may be an increase on the lakes due to more people using pleasure craft and the growth in areas such as the glacial and hydro lakes. Further research is needed to confirm that lake fishing is a substitute for river fishing for the individuals involved.

> *A decrease in lowland river fishing was recorded in most South Island regions (Table 14). ... other South Island regions showing a similar decline were central South Island and Nelson/Marlborough, where a moderate decrease in lowland river fishing effort was paralleled by a comparable decrease on some mainstem rivers (e.g. the Motueka and Opihi), the lower reaches of which share many of the characteristics of lowland rivers.* (Unwin and Image, 2003, p. 36)

The results from this study show fishing popularity for particular rivers within the Waitaki Catchment. Fishing within the catchment is a popular activity compared with other parts of the country. Results show a general decrease in river fishing and increase in lake fishing. The reasons for this change, such as factors related to fisher satisfaction were not part of this study and to find this out further research is needed.

Unwin U, Deans N. 2003. *Travel Distance as an Index of Angling Value: A preliminary study base on the 2001/02 National Angling Survey*. NIWA Client Report CHC2003-113.

This report analyses the data gathered for the National Angling Survey 2001/02 in an effort to "... develop a conceptual model of New Zealand river fisheries in which their importance is related to their total annual usage, and to the distance anglers are prepared to travel to reach them" (Unwin and Deans, 2003, p. i). The analysis is considered by the authors to be the start of the process to assess the importance of different rivers and not a means in itself. "We believe the present analysis should be used to inform the process of identifying rive fisheries of national priority, but not to dictate it" (Unwin and Deans, 2003, p. i).

Based on the premise that rivers close to large populations are more likely to be fished than those that are more remote, this is an attempt to assess the value of different rivers considering river popularity relative to its distance from centres of population (Unwin and Deans, 2003, p. 2). This report and analysis supported previous opinions that had been held about particular rivers and most notably for the Waitaki Catchment: "... many rivers which have previously been identified as nationally important, such as the Mataura, Rakaia, Waitaki, Ahuriri, Hunter, and Mohaka, continue to feature prominently when there importance ranking is taken into account" (Unwin and Deans, 2003, p. 18).

Added value in this report comes from the central South Island fish and game region being used as a case study. In particular, two Waitaki Catchment rivers, the Tekapo and the Waitaki, are included in the analysis. This comment is made in the results discussion:

> *The Tekapo is remarkable in that it attracted more respondents from outside the central South Island region than from inside. It was also popular with anglers from Christchurch and Dunedin, and derived 8% of its use (in terms of number of respondent) from anglers living in Southland, Nelson/Marlborough and the West Coast, and the North Island. This suggests that it is clearly of regional importance, and should probably be considered as nationally important. The Waitaki River, arguably one of the most highly valued river fisheries in New Zealand, and regarded by FGNZ as nationally important (see Tierney et al. 1982), attracts anglers form throughout the country.* (Unwin and Deans, 2003, pp. 14-16)

This study should be considered as an indicative tool for calculating river importance and results should be used with caution. The report states: "The methodology developed in this study is simplistic, and represents no more than a first attempt to quantify travel distance in an objective and defensible way" (Unwin and Deans, 2003, p. 21). The report also provides this caution: "The present analyses should be used to inform the process of identifying river fisheries of national priority, but not to dictate it" (Unwin and Deans, 2003, p. 22).

The authors of this study state how a better understanding of river importance could be gained: "We regard these results as only one of many potential indices, including characteristics such as angler satisfaction, species available, catch rates, and size of fish which should also be taken into account when making such determinations" (Unwin and Deans, 2003, p. 23).

Fishing texts

Fishing texts which provided descriptions of particular waterways include:

- Giles R. 2002. *Catch that Trout: Fishing the South Island of New Zealand.* Reed Publishing, New Zealand.
- Busch T. 2003. *Trout Fishing: A Guide to New Zealand's South Island* (5th ed). Bateman, Auckland.
- Kent J. 1998. *South Island: Trout Fishing Guide.* Reed Books, Auckland.
- Kent J, Madsen PM. 1997. *New Zealand's Top Trout Fishing Waters*. Reed Books, Auckland.

Ahuriri River

> *"This medium to large river has a high reputation, and deservedly so."* (Kent and Masden 1997, p. 79)
>
> *"The fish are few and far between in the upper valley and they are most likely to be large browns, some as big as 5 kg. Further down, near Ben Avon Station, the river meanders snake-like across the flat tussock lands. Good stocks of both rainbow and browns will be found. The fish in this section can often be spotted in the backwaters and in such quiet water they will prove a challenge even for the experienced angler. They average 1.5 kg but there will be the occasional trophy fish, especially in the tarns near the road."*
>
> *"This makes them (trout) exciting to fish to, especially in the glorious setting in which you will find yourself – the Ahuriri Valley, in the foothills of the Southern Alps. The Ahuriri River is one of those rivers that seem to be particularly suited to dry-fly fishing."* (Giles, 2002, pp. 52-53)
>
> *"The mountain views upstream compensate to some extent for the prevailing wind."* (Kent, 1998, p. 154)
>
> *"This is an excellent trout fishing river, from its headwaters inland from Lindis Pass to its convergence with Lake Benmore. It is a vigorous flow of clean water, often tinged blue by melting snow, descending a gradual and constant incline over a bed of unstable stones, gravel and sand."* (Busch, 2003, p. 213)

Boundary Stream

> *"This is a small, shingly stream which almost dries in hot summers. If one is prepared to tramp, then there are a few good resident browns in selected holes well upstream, but this stream is not recommended at the mouth."* (Kent, 1998, p. 166)

Cass River

> *"At the road bridge, the river is unstable, shingly and flood-prone. It can take one week to clear after heavy rain. It is advisable to walk 2 km upstream to the gorge where there is more stable water and some deep holes. This continues for 3 km upstream to the mouth of the Joseph Stream. The river again becomes unstable above this stream. Holds browns and rainbows which can be spotted in good condition."* (Kent, 1998, p. 166)

Coal River

"The middle and upper reaches are turbulent, swift and difficult. Below the road there are a few small, stable pools in the lower reaches worth exploring early in the season only. The mouth is a favoured spot for lure fishing." (Kent 1998, p. 167).

Grays River

"Grays River holds good stock of trout, a few rainbow in the lower reaches and browns. There is 10 km of fishable water upstream from the Tekapo confluence. The lower reaches are chocked by willows, but upstream beyond these there is excellent fishing in clear water. The river tends to dry somewhat over a long hit summer but will still hold resident fish." (Kent, 1998, p. 160)

Hopkins River

"This is a large river flowing swiftly over a wide, unstable bed of gravel and rocks. While it carries a good head of fish, they must be deemed "cruisers" rather then "residents". Since the river course alters direction with every flood, the best time to visit is after a prolonged period of settled dry weather. This permits the insects and their larvae to become established, halting the nomadic habitats of trout." (Busch, 2003 p. 218)

"Fishing the Dobson is much the same as for the Hopkins River and many kilometres of walking may be needed to find a good fish." (Giles, 2002, p. 209)

Hydro canals

"Aesthetically, the canals may leave a little to be desired, but a good number of fish are taken from these waters. Some enterprising local anglers patrol the canal on motorbikes, stopping when they spot a fish. There are a number of small lakes holding trout (Poaka, Cameron and Wardell) adjacent to the Pukaki hydro canal north and west of Twizel. These lakes have clear water enabling trout to be stalked in bright sunny conditions." (Kent, 1998, p. 161)

"The canals are very well stocked and it is quite feasible for anglers so inclined to stop on the verge of the sealed road and cast a line anywhere as the whim takes them. The dams (Patterson Lakes) alongside the canals are artificial and have small trout populations remaining from the original stocking programmes. They offer easy walking access and idyllic fishing conditions." (Busch, 2003, p. 220)

Lake Alexandrina

"This is a very popular lake, especially with Timaru anglers, and there are fishing huts on the southern and eastern shore." (Kent, 1998, p. 164)

"Lake Alexandrina is so renowned for its large brown and rainbow trout that there is a sizeable village of holiday homes overlooking its waters. The Fish and Game Council protects this resource by prohibiting powerboats on the lake, and any angler fishing from a boat within 100 m of the shore must have it securely anchored. The lake does not have true beaches but steep, open terrain from which the anglers must fish." (Busch, 2003, p. 219)

"Compared to Tekapo, Alexandrina is a much more stable lake and so provides a better habitat for trout." (Giles, 2002, p. 176)

Lake McGregor

"Lake Alexandrina drains into this lake, but fishing is prohibited in this creek. The lake is small and can be fished with a lure in similar fashion to Alexandrina." (Kent, 1998, p. 164)

"Although this lake is also fished extensively by the streamer fly method, it offers good fly fishing, especially near the outlet that passes under the Godley Peaks Road skirting the shores of Lake Tekapo. Although casting positions are limited, the fishing is excellent. Of these two lakes (Alexandrina), I prefer Lake McGregor, where I am able to use the dry fly fishing technique early in the morning." (Busch, 2003, p. 219)

Lake Middleton

"This small lake contains small brown and rainbow trout, but the lake is often disturbed by water-skiers and swimmers, and there's better fishing in waters close by." (Kent, 1998, p. 157)

"It is used for recreational purposes and although it holds a small stock of trout it is not worth the effort of fishing." (Busch, 2003, p. 215)

Lake Ohau

"Ohau is a 16 km – long, deep blue picturesque high-country lake often swept by nor'westers from the Dobson and Hopkins valleys. The lake holds good stocks of 1–2 kg browns and rainbows. There are also some resident sockeye salmon but these have not thrived and are in poor condition. The lake is good for spinning and trolling, but fly fishing is restricted to stream mouths at night and to the shallows between Lake Ohau Lodge and the head of the lake. Here the shoreline consists of tussock, manuka and matagouri scrub and this can impede the back cast, especially when the lake is high. The lake tends to be under-fished." (Kent, 1998, p. 157)

"It is fed by the Dobson and Hopkins rivers, with much of the flow consisting of melting snow, thus ensuring perfect trout habitat. The best fishing is found at the head of the lake, from where the road leaves the river around to the Dobson River delta. Both rainbow and brown trout are resident here and average 1.5 kg." (Giles, 2002, p. 207)

Lake Pukaki

"Even though the lake level has been raised and the water is constantly discoloured by glacial silt, a few good fish are caught at stream mouths. The lake is open to fishing all year round." (Kent, 1998, p. 161)

"Although both Lakes Pukaki and Tekapo are picturesquely coloured deep turquoise with glacial dust, they both hold fish. The fishing in Pukaki must be described as mediocre but that of Tekapo is good and improving slowly by every year. The waters in front of the motor camp near the Tekapo township will verify this. The 80–90 km length of highway between Lake Tekapo and Omarama embraces some of the most pleasant trout fishing in the South Island." (Busch, 2003, p. 215)

Lake Tekapo

"Although in summer this lake is coloured by glacial flour brought down by Godley River, trout can be caught. In winter when glacial melt ceases, the lake is often much clearer. The eastern shore near the Lake McGregor outlet, the mouth of Cass River and the Glenmore Station Tarn outlet are well worth exploring either with a fly rod or spinning gear. In these areas the lake can clear sufficiently for spotting and stalking trout. The mouths of the Mistake and Macaulay rivers also yield fish." (Kent, 1998, p. 165)

Lake Ruataniwha

"This large lake, formed by a hydro scheme, is used extensively for boating activities and other aquatic sports in conjunction with fishing. There is a large motor camp situated on its shores and the fishing approach is quite straight forward. It is a matter of driving, or walking, around the perimeter of the lake and the fishing where you will. Personally, I am not attracted by the fishing in this particular waterway and would rather drive the 25 km towards Omarama along Highway 8 from Twizel." (Busch, 2003, p. 221)

Macauley River

"Although the river floods frequently and is generally unstable, there is some holding water well upstream near the confluence with the Northeast Gorge Stream. Access either by tramping or by jet boat, providing there is sufficient water. The swampy, lower reaches and side creeks around the mouth can be worth exploring, providing the river is low and clear and the nor'wester kind. Holds both brown and rainbow trout. Permission required from Mt Gerald Station. A few spring-fed side creeks further up the Godley River hold fish, but this is trampers' country and a visit for the fishing alone, despite the magnificent scenery, can hardly be recommended." (Kent, 1998, p. 166)

Ohau River

"The lower 3 km are worth fishing unless a lot of water is flowing. There is some very good fishing for browns and rainbow in these lower pools above Lake Benmore, especially early in the season. There is now also good water in the stretch of river between the outlet dam at Lake Ohau and Lake Ruataniwha." (Kent, 1998, p. 159)

Omarama River

"It holds browns averaging 1–2 kg with a few up to 3 kg, and these can be spotted and stalked in bright conditions. Trout rise readily and the stream is very pleasant to fish." (Kent, 1998, p. 154)

Stony River

"This rock and stone river, which holds a few browns and rainbows in the 1–2 kg range, is quite highly regarded although access is not easy and the river tends to dry in hot summers. Best fished before Christmas." (Kent, 1998, p. 153)

Tekapo River

"This medium-sized river is subject to fluctuating flow rates as a result of hydro-electric power generation. Despite this, the river holds enormous stock of trout (250 fish/km on drift dives) and is highly recommended in favourable conditions. The best fishing water lies between the mouth and the Maryburn confluence in the Gray Hills area. The river holds mainly browns with some very large fish lying at the head of deep holes." (Kent, 1998, p. 161)

"The Tekapo River, often dry at its source from the Tekapo Dam wall, provides excellent fishing in its lower reaches. Fly fishing anglers wishing to really enjoy the best of the Tekapo river rainbow trout fishing should contact a professional guide as there are several outstanding venues on this river that can only be reached by those with local knowledge and four-wheel drive transport." (Busch, 2003, p. 221)

Temple Stream

"This fast-flowing mountain torrent holds few fish above the forks. The lower reaches are heavily fished. There are a few large fish in the deeper holes of the lower reaches of the Hopkins and Dobson rivers, but these are unstable, shingly, snow-fed rivers prone to flooding and changing course. Dust storms make life most unpleasant in this area. The tramper angler should look at the Huxley flowing into the Hopkins. It is gorgy and difficult but holds a few large trout – just the sort of river to find a trophy fish." (Kent, 1998, p. 158)

"The section of river upstream from the bridge provides particularly good conditions in its pools and runs." (Busch, 2003, p. 217)

"Both these streams (Maitland and Temple) are worth fishing but are rather flood-prone so they fish better when the weather has been settled for a while. The same can be said for the Hopkins River at the end of the road." (Giles, 2002, p. 207)

5.1.3 Boating, sailing, water sports and camping summary

Topic	Boating, sailing, water sports and camping summary
Information summary	All forms of water sports are enjoyed on the water bodies of the upper catchment. A lot of activity is linked with summer camping holidays especially over the Christmas period and generally from Labour Weekend to Easter. There have been 12 campgrounds identified in the upper catchment from various sources. It is difficult to put exact numbers on the extent of participation because of the nature of the activity. Most people are involved in independent recreation activities and so recording what they do is not easy to measure. The Environment Canterbury Harbour Master made the comment that enforcement officers attempt to enforce rules but they do not engage in monitoring the amount of use in the Waitaki Catchment Knowledgeable local people have estimated user numbers. It is equally important to have an understanding of the activities that people are involved in. The comment has been made that more people are getting involved in water sports involving boats because they attempt to maximise their leisure time. Many people now have less time for their summer holidays than 20 years ago and so want to enhance the experience they have by adding the excitement of the water sports such as fishing water skiing, jet skiing and other activities. People also enjoy general relaxation and leisure activities such as sun bathing, relaxing and general socialising. Some develop their participation into competitive sports such as water skiing. The slalom course on Lake Tekapo has been developed to facilitate the sport. Clubs such as the Tekapo Water Ski Club with 300 members and Tekapo Boat Club with 60 families get people involved in tournaments, coaching and learn-to-ski days. Lake Pukaki is perceived to be cold, dangerous and windy but all other lakes are reported to experience considerable summer use. It is possibly the highest intensity water use in New Zealand. Most people are from the local area and Otago and Canterbury.
Quantitative data	All participation figures are based in individuals' estimates. Twizel's population is estimated to grow from 1200 to 5000–7000 over the summer period. Lake Ruataniwha is estimated to have 300 to 400 people on it over the summer. The Ruataniwha Holiday Park has about 2000 visitors per night at the height of the summer. There are an estimated 100–150 boats on Lake Tekapo at busy times.

Topic	Boating, sailing, water sports and camping summary
Significance	For the people involved, summer water based holidays are very important. They are a chance for families to enjoy time away from everyday activities, especially work. The significance of these lakes is that they are accessible for many people within the central to lower South Island. There are a lot of camping opportunities or people may have their own holiday home in the area. They are also accessible for day trips for many people. For those involved in competitive water sports such as water skiing the lakes are also significant. For overseas people who do not have access to boats, these activities are likely to be less significant.
Future trends	It is predicted that use of the lakes is likely to grow as people choose to spend more on accessories such as boats to maximise their summer recreation experiences. One factor that may influence future use is significant increase in fuel prices that could make power boat use more expensive.
Water flow level influence	Boat use is affected by lowered lake levels. Boat launching is difficult and sometimes not possible when boat ramps are exposed through lowered water levels. Scenic views are also impacted when the lake is too low. The end of the boat ramp has been extended once to accommodate the low lake levels. Currently there is a need for 4WD to get access for launching boats when water is low before the summer snow thaw increases lake levels.
Information sources	Tony Whitely (Environment Canterbury Harbour Master) Richard McNamara (Department of Conservation – Twizel, Programme Manager – Recreation) Gordon Handy (Tekapo Power Boat and Water Ski Club) Dave Johnson (Tekapo Boat Club)
Information explanation and assessment	The information provided is predominantly personal accounts of participants own or others' experiences. The information gives a general description of activities and includes some estimates of participation levels.
Information coverage	The informal nature of water-based activities means that the current understanding of participation and experiences is based on anecdotal and informally provided information. The information gathered for this study does not allow confident generalisations to be made about experiences and participation levels that can only be drawn from a specific user survey.
GIS maps in companion report	Refer to pages 8, 34, 36, 40, 41, 42, 44, 46, 48, 49.

5.1.4 Boating, sailing, water sports and camping information

Tony Whitely (Environment Canterbury Harbour Master)

Environment Canterbury has enforcement officers on the water who enforce regulations but they do not systematically record the number of boats using waterways.

Tony stated that he thought Aviemore (out of Waitangi), Ruataniwha, top end of Benmore – (a lot out of Haldon) are the most popular places for boating.

Richard McNamara (Department of Conservation – Twizel, Programme Manager – Recreation)

Twizel can grow from 1200 to 5000–7000 people in the summer mainly due to water sport use.

Lake Ruataniwha is the most densely used lake with 300 to 400 people on it in the summer. It is a lake close to the main road and it is safe.

Lakes Tekapo, Ohau and Middleton also get a lot of use. Boating is increasing over the summer.

Lakes Middleton, Benmore – Haldon Arm, Ohau C, and Lake Ruataniwha get very full.

He estimates 5000 people (1000 boats) in total on all the main lakes.

Lake Pukaki is cold and perceived as dangerous and windy.

Day visitors are the bigger market – lots of people will go from Oamaru, Timaru, Christchurch and Dunedin for one and two day trips. Numbers are swamping the sewerage systems in some areas, for example the old sewage system has had to be replaced.

They are mainly all New Zealanders and from Otago and Canterbury. There is vast potential for increasing use. People have more money but they stay for less time. Use is changing to be more concentrated with more accessories.

Boat use on the lakes is considered to be some of the highest intensity in the country.

Gordon Handy (Tekapo Power Boat and Water Ski Club)

There are 300 people in the club. Membership costs $40 per family.

Christmas and New Year are very busy times for use.

There are two ramps at the Yacht Club and another near the Church of the Good Shepard. They have tournaments, coaching days and learn to ski days.

Boat users cannot use the ramps when the lake is too low. The scenic view is also destroyed when the lake is too low. The end of the ramp has been extended once to accommodate the low lake levels. A 4WD is needed to get access for launching boats when water is low.

An estimated 150 boats are on the water on a busy day at Tekapo. The slalom course is used a lot in the morning and later in the evening. Fishers go out early and come back late so their presence may not be noticed so much on the lake.

Ohau and Pukaki do not have a lot of boating because they are too windy and choppy and the water is cold. Tekapo and Ruataniwha are the second most popular, Benmore and Aviemore are the most popular lakes. Sailors Cutting is a very busy area for launching boats.

Dave Johnson (Lake Tekapo Powerboat and Water Ski Club)

There are about 75 families in the club. On Lake Tekapo powerboat use is most popular from Labour weekend through to Easter. The lake is busy but it is ok when users are out on the water. He estimates 100 boats are on the water at any one time during the most popular times of the year.

The slalom course cannot be used when the water level is low.

Users don't have confidence in water levels at the moment. The result has been cancelled events.

It has been worse in the summer in the last four or five years. It is expected to be lower in the winter but not in the summer.

Camping

Campgrounds from various sources include the following.

Lake Ohau	Lake Middleton Reserve Lake Ohau Lodge Ohau Camp Round Bush Temple Forest Camping Area
Lake Tekapo	Aoraki Naturally Holiday Park Lake Tekapo Motels and Motor Camp
Mt Cook	White Horse Hill Camping Area Mt Cook National Park
Omarama	Omarama Top 10 Holiday Park
Twizel	Glentanner Park Parklands Alpine Tourist Park Twizel Ruataniwha Holiday Park

Estimates from campground managers were difficult to provide. The Ruataniwha Park estimated that it had about 2000 guests during the Christmas period. It was too difficult to estimate the number of people using boats or the lake.

5.1.5 Canoeing, kayaking and rafting summary

<table>
<tr><th>Topic</th><th>Canoeing, kayaking and rafting summary</th></tr>
<tr><td>Information summary</td><td>Canoeing, kayaking and rafting is conducted on predominantly modified rivers. Egarr (1996) states that before modification, these rivers had some of the best whitewater runs in the country.

To compensate for this loss there are now planned water releases down the Tekapo (seven releases in 2004/05) and Pukaki Rivers (two releases 2004/05) from November to April. These events are advertised, including information on when they will happen, the water level flow and who the event co-ordinator will be.

The Tekapo slalom course completed in 2001 provides a purpose built white water course which has 20 releases planned for the 2004/2005 season.

The natural rivers as described by Egarr, under their current river flows, are described as not having high appeal for whitewater enthusiasts.

Canoeists and kayakers have a range of abilities and participation styles. Some will enjoy slalom kayaking, while others will race as part of a multi-sport event. Different types of rivers facilitate different forms of participation and will attract different types of users. There is a large number of recreation and educational groups that participate.</td></tr>
<tr><td>Quantitative data</td><td>2004/2005 releases:
<table><tr><td>Tekapo River</td><td>7 releases</td></tr><tr><td>Pukaki River</td><td>2 releases</td></tr><tr><td>Tekapo Slalom Course</td><td>20 releases</td></tr></table>It is very difficult to accurately state the amount of use. Conservative estimate for over 5000 user days per year.

Use growing by 10–15% per year.

The average number of attendees at most events conservatively would be at least 40 persons.

The New Zealand Slalom Nationals were held at Tekapo this year and attracted 135 entrants and the Australian National Team of 20 athletes.

250 attended the 2004 Pukaki release on each of the two days the water was flowing. If that water flowed more often it would get even more use.

There are about twice as many non-whitewater users – e.g. multi-sporters.

Multi-sport races attract hundreds.</td></tr>
<tr><td>Significance</td><td>The whitewater releases compensate for the loss of opportunities. While natural kayaking is no longer highly regarded the staged releases and slalom course are considered nationally significant. The 20 strong Australian team attended the New Zealand nationals. A higher number of paddlers use water bodies for multi-sport use rather than for white water and the catchment has high significance for white waters.</td></tr>
<tr><td>Future trends</td><td>Continued growth is likely if the current growth rate of 10–15% per annum continues.</td></tr>
<tr><td>Water flow level influence</td><td>Water flow has already affected many recreational kayaking experiences. Continued agreements to stage water releases are needed to maintain opportunities.</td></tr>
<tr><td>Information sources</td><td>Egarr G. 1995. New Zealand's South Island Rivers: A guide for canoeists, kayakers and rafters. Nikau Press.

http://www.rivers.org.nz/events/

Alan Hoffman (Chairman of the Tekapo White Water Trust)</td></tr>
</table>

Topic	Canoeing, kayaking and rafting summary
Information explanation and assessment	Information is descriptive from a South Island kayaking publication, one highly involved user/organiser and website sources.
Information coverage	Difficulty obtaining information about specific participation means this summary is based on general descriptions. More information from users would enhance the understanding of participation in this area.
GIS maps in companion report	Refer to pages 30, 32.

5.1.6 Canoeing, kayaking and rafting information

Alan Hoffman (Chairman of the Tekapo White Water Trust)

Alan Hoffman co-ordinates the use of the New Zealand Recreational Canoeing Association (NZRCA) releases in conjunction with Meridian Energy's resource consent.

There are various recreational users of the rivers and lakes in this catchment, from polytechnic students in Timaru and Dunedin, students from Mackenzie College and Mt Aspiring College OP Programmes, competitive slalom and wild water racers and recreational users from the clubs in Canterbury, Otago and Southland. To provide exact numbers would at best be a guesstimate.

Alan co-ordinates four slalom events (two day weekend events) per year on the Tekapo Course, and a further six or seven other course releases weekends take place within the calendar year. Additionally about six other releases in the riverbed only take place for recreational paddlers.

The average number of attendees at most events conservatively would be at least 40 persons. The New Zealand Slalom Nationals were held there this year and attracted 135 entrants and the Australian National Team of 20 athletes.

Additionally college and polytechnic groups regularly use the region's rivers for their instructional programmes, with groups of 10 to 20 students about 20 days per year.

The Pukaki releases attract the most attendance. In 2001 over 400 people attended the annual release down the riverbed as it is a wonderful section of white water. Alan goes most years to this release and over 250 attended the 2004 release on each of the two days the water was flowing. If that water flowed more often it would get even more use.

Additionally numerous non-club groups and multi-sport users use the rivers lakes and canals thorough out the catchment for training and racing and Alan believes the numbers in these groups exceeds the white water paddlers by at least double.

Alan cannot comment on the lower sections of the catchment below Benmore as he seldom use that section but he knows some multi-sporters from Timaru use the braided sections of the Waitaki for Coast to Coast training.

The Hooker River is also regularly paddled by more competent white water boaters and Lake Pukaki itself is used for the Mt Cook to Christchurch Race amongst the multisport fraternity, attracting hundreds of entrants annually.

Alan also travels to the Ahuriri River to paddle the short gorges below the Lindis Pass for a change in slalom training venue.

Alan estimates the number of recreational user days for the greater Waitaki Catchment from recreational kayakers from all codes and clubs would conservatively be easily be in excess of 5000 user days per year.

Alan believes the white water aspects of kayaking and canoeing is increasing at a rate of about 10–15% per year and in the nine years he has lived in the Otago region the numbers of users from Central Otago alone that utilise the Waitaki has easily quadrupled. On average about 20 plus attend the slaloms at Tekapo from Otago alone.

Egarr G. 1995. *New Zealand's South Island Rivers: A guide for canoeists, kayakers and rafters*. Nikau Press.

Waitaki River system

The Waitaki River system encompasses a large network of rivers ... Most of these rivers have been modified by hydro schemes. The main exceptions are the small Ahuriri River and the upper catchment rivers that feed into the lakes, such as the Tasman, Hooker, Hopkins, Dobson and Godley – which are all glacial and flow over wide shingle beds. The rivers that have been modified, or no longer exist, such as the Pukaki, Ohau, and Tekapo, had some of the best whitewater runs in the country. The Pukaki was particularly famed for its grade IV rapids and huge cresting waves. The Tekapo was easier still, so that the area had water to suite all tastes.

The New Zealand Canoeing Association (NZCA) has negotiated for recreational releases on the Pukaki (two days at 140 cumecs, or higher flows for one day) and the Tekapo (eight days at flows between 30–60 cumecs). To compensate for the loss of whitewater on the Pukaki, ECNZ, as part of its water right, has paid the NZCA a substantial sum to modify the Tekapo riverbed to provide some grade III rapids and a site for canoe slalom and other whitewater recreation. [Information below shows that release conditions continue similar to 1995, and the slalom course is completed.]

Ohau River

When water is released down the former river bed, now by-passed by the hydro canal, the Ohau River should provide rapids of up to grade II. These rapids would consist mostly of shingle chutes and pressure waves. As the river approached Lake Ruataniwha, the gradient eases and the river becomes braided in places and rapids are replaced by riffles over shallows. The formerly large rolling pressure waved for which the river was known, lay in the part of the river now flooded by Lake Ruataniwha. Fifty cumecs of flow would be required to provide a viable trip and rapids of up to grade II. This is very unlikely as the reduced flow has created a good trout fishery and the water right agreement protects the regime. The Ohau is lost to whitewater river runners for some time.

Pukaki River

The majority of the gradient-drop of the river is contained in the first 2 km below the outlet from the lake; thereafter the river becomes more placid and eventually braided over riffles. At the release flow of 140 cumecs the river contains some good waves and a few holes. Occasional flood overspills of 400+ cumecs can occur and then the river is a broad, turbulent and swift river with no playspots. The NZ Canoeing Association (NZCA) has a water permit for one release on the Pukaki per year, usually in February – contact South Island canoe clubs or the NZCA for details.

Tekapo River

An artificial whitewater slalom site is being constructed just above Lake Scott about 2 km below the Lake Tekapo outlet. A 30–65 cumecs flow will be diverted across a loop in the river to create a grade III whitewater course of 300–400 metres in length [now completed].

Temple Stream, Hopkins and Dobson Rivers

These three all run into Lake Ohau. The Temple Stream has an excellent, but short, gorge that can be run for the picnic area when heavy rain has brought up the flow levels. Grade III rapids are said to exist under these conditions. It is, however, a very small stream, so that flow level are seldom sufficient for trips. The Hopkins and the Dobson are both river that flow over wide shingle beds without interesting rapids.

Hooker and Tasman Rivers

The Hooker River drains the southern slopes of Mt Cook from the Hooker Glacier. It flows around the point of the Mt Cook Range ... It is very steep, bouldery and glacial river, which joins the Tasman River below The Hermitage. The Hooker has two foot bridges, and a vehicle bridge on the Ball Hut Road. There have been trips downstream from the middle swingbridge, where constant rapids of grade IV can be found, easing to grade II as the river nears the Tasman confluence. As with any glacial river, silt makes for very difficult conditions. Whitewater, holes and eddies cannot easily be distinguished from the swift flow of the river, the river is also extremely cold. Silt gets into eyes so that kayakers find it very difficult to Eskimo role and keep paddling. The best trip on these two rivers is on the Hooker form the middle swingbridge down to the Ball Hut Road. This is a run for only the most competent paddlers.

The Tasman River has a much less gradient than the Hooker and is considered an easy flow down to Lake Pukaki. Because of the river wide bed and braided nature of the river, paddlers should keep to the right bank wherever possible.

Ahuriri River

The Ahuriri flow from west for the Barrier Range to enter Lake Benmore near Omarama. It has vehicle access well into the upper valley but contained only one rapid of real interest to paddlers, the Ahuriri Drop ... (Egarr, 1995, pp. 101–103)

Retrieved 10 November 2004, from http://www.rivers.org.nz/events/ Tekapo artificial whitewater course – opened Labour Weekend 2001 (article from 2001)

The Tekapo White Water Trust has finally had a successful commissioning flow down the new artificial whitewater course. Flows ranged from 10 to 25 cumecs to test course stability and specific feature areas.

Immediately below the intake gates is a great rodeo/play wave which rates as one of the best features of any artificial course known, with room for three on the breaking wave and 50 in each eddy. The entry slope and deep pool makes it ideal for surfing and flat spins for both intermediate and advanced paddlers.

The 500 metre long course is rated at class II to II+ with 10 to 15 cumecs and class III at 20 to 25 cumecs. Large rocks create the main features of powerful holes and large standing waves within a single channel lined with rock which is held in place with concrete where required. With more than 5 metres of head, the speed of the water in the last half of the course provides powerful hydraulics to enable great surfing, high crosses and spins. Minor modifications will be made to the course to improve paddler safety and improve the size and quantity of eddies prior to the next schedule of release flows.

Work started on the project more than 10 years ago but the actual course construction work started in April 1998. The main reason for such a long wait was a lack of funds to match the course design required, and with major design and redesign work done, the final budget for the course is approximately $500,000.

Tekapo, Tekapo whitewater course		
These releases are under the control of the responsible person listed below. You will only be allowed on the course at the discretion of the responsible person. If you want to paddle, please contact them before the event to check on the event requirements. In the absence of the event co-ordinator the event will be cancelled.		
Tekapo course release	Sunday 28 November 2004, 09:00–15:00	18 cu, c/- Alan Hoffman, TWWT
Tekapo course release	Saturday 1 January 2005, 11:00–17:00	c/- ?
Tekapo course release	Sunday 2 January 2005, 09:00–15:00	18 cu, c/- ?
Tekapo course release	Monday 3 January 2005, 11:00–17:00	18 cu, c/- ?
Tekapo course release	Tuesday 4 January 2005, 09:00–15:00	18 cu, c/- ?
Tekapo course release	Saturday 12 February 2005, 11:00–17:00	18 cu, c/- ?
Tekapo course release	Sunday 13 February 2005, 09:00–15:00	18 cu, c/- ?
Tekapo School course release	Tuesday 22 February 2005, 13:30–16:30	30 cu, c/- Pete Munro, Mackenzie College
Tekapo course release	Saturday 05 March 2005, 11:00–17:00	18 cu, c/- ?
Tekapo course release	Sunday 06 March 2005, 09:00–15:00	18 cu, c/- ?
Tekapo course release	Saturday 26 March 2005, 10:00–18:00	18 cu, c/- ?
Tekapo course release	Sunday 27 March 2005, 10:00–18:00	18 cu, c/- ?
Tekapo School course release	Tuesday 05 April 2005, 13:30–16:30	18 cu, c/- Pete Munro, Mackenzie College
Tekapo course release	Saturday 09 April 2005, 11:00–17:00	18 cu, c/- Shaun McCracken, UCCC
Tekapo course release	Sunday 10 April 2005, 09:00–15:00	18 cu, c/- Shaun McCracken, UCCC
Tekapo School course release	Monday 11 April 2005, 11:00–17:00	18 cu, c/- Andy Thompson, School- Adventure
Tekapo School course release	Tuesday 12 April 2005, 09:00–15:00	18 cu, c/- Andy Thompson, School- Adventure
Tekapo School course release	Wednesday 13 April 2005, 09:00–15:00	18 cu, c/- Andy Thompson, School- Adventure
Tekapo School course release	Thursday 14 April 2005, 09:00–15:00	18 cu, c/- Andy Thompson, School- Adventure
Tekapo School course release	Friday 15 April 2005, 09:00–15:00	18 cu, c/- Andy Thompson, School- Adventure

Tekapo, SH8 to Tekapo A power station (course gates closed)		
Tekapo River release	Saturday 13 November 2004, 11:00–17:00	30 cu 11:00–13:00 40 cu 13:00–17:00
Tekapo River release	Sunday 14 November 2004, 10:00–16:00	30 cu 10:00–12:00 60 cu 12:00–16:00
Tekapo River release	Saturday 11 December 2004, 11:00–17:00	30 cu 11:00–13:00 40 cu 13:00-17:00
Tekapo River release	Sunday 12 December 2004, 10:00–16:00	30 cu 10:00–12:00 60 cu 12:00–16:00
Tekapo River release	Tuesday 08 March 2005, 13:30–16:30	30 cu, c/- Pete Munro, Mackenzie College
Tekapo River release	Saturday 12 March 2005, 11:00–17:00	30 cu 11:00–13:00 40 cu 13:00–17:00
Tekapo River release	Sunday 13 March 2005, 10:00–16:00	30 cu 10:00–12:00 60 cu 12:00–16:00

Pukaki		
Operational flows may follow recreational releases. Meridian advises paddlers to exit the river at the agreed end-time for recreational flows		
Pukaki release	Saturday 12 February 2005, 11:00–16:00	93 cu 11:00–14:00 140 cu 14:00–16:00
Pukaki release	Sunday 13 February 2005, 10:00–15:00	

5.1.7 Rowing summary

Topic	Rowing summary
Information summary	Lake Ruataniwha is the main rowing venue in the South Island and shares national rowing events such as the National Championships and National Secondary School Championships on alternate years with Lake Karapiro. The course has been custom built for rowing which means the course meets the international criteria for such aspects as depth and width among other criteria. South Island Rowing is continuously improving the facilities for the rowing fraternity at this venue. Meridian Energy maintains constant water levels (both height above sea level and the flow of water during events. The lake is not only used for events but also for numerous weekend and holiday training camps. Rowing is recognised as a significant activity for Twizel that should be considered in the management of the Lake Ruataniwha.
Quantitative data	There are 10 significant regattas planned for Lake Ruataniwha in 2004/2005. The Secondary Schools Rowing Championships is arguably the largest rowing regatta in the world.
Significance	Rowing on Lake Ruataniwha is nationally significant for rowing. The Maadi Cup is a nationally significant secondary school sporting event. International accreditation will make it possible for significant international events to be held on the lake.

Topic	Rowing summary
Future trends	Young people's enthusiasm for rowing continues to be expressed through the popularity of secondary schools rowing which is likely to continue to produce large numbers of rowers. Rowing popularity is likely to be enhanced by continued gold medal success at the last two Olympics from Rob Waddell and Caroline and Georgina Evers-Swindell. Lake Ruataniwha's popularity as a rowing venue is likely to increase as a result of continued rowing popularity
Water flow level influence	Water levels need to be stable for rowing regattas on Lake Ruataniwha. The stable conditions provided by Meridian are predicted to continue.
Information sources	Philip Bell (South Island Rowing Inc – Secretary) Mackenzie District Council and Community Board. 2004. *Twizel: The future starts today*.
Information explanation and assessment	The information is predominantly provided from the organisation that administers rowing in the South Island. The number of regattas and lake quality as a rowing venue is presented.
Information coverage	The information provided outlines the use of the lake for rowing. Individuals' experiences of rowing have not been presented.
GIS maps in companion report	Refer to pages 38.

5.1.8 Rowing information

Philip Bell (South Island Rowing Inc – Secretary)

Phillip stated that New Zealand Rowing is in the process of purchasing land to enhance the rowing facilities at Lake Ruataniwha. Lake Ruataniwha is the premier South Island rowing venue and biannually hosts New Zealand's national rowing events, along with other regattas. In alternate years national events are held on Lake Karapiro.

Lake Ruataniwha is used by many clubs in the South Island for training as well as for regattas. Many school and club crews will travel to the Lake for holiday and weekend training camps.

The Maadi Cup is a special sporting event in New Zealand's secondary school sporting calendar. The Maadi Cup is a race for secondary school rowing supremacy and is held each year as part of the National Secondary School Rowing Championships. Arguably the biggest rowing regatta in the world, it is also one of, if not the largest, New Zealand secondary schools sporting event. The event attracts male and female crews from all over the country. The Maadi Cup has been raced for since 1948 when it was brought back from Cairo by New Zealand servicemen.

Several competitions and events are taking place at the lake in the year 2004. These events are listed on the South Island Rowing Inc Calendar 2004–2005.

Date	Event
25–26 September	Ruataniwha 2K Singles Regatta
30–31 October	Aoraki 1000 Regatta
15–16 January	Meridian Energy Otago Championships
22 January	Wings Over Water (*Deferred until 2006*)
29–30 January	Meridian Energy Canterbury Championships
12–13 February	Meridian Energy Southland Championships
19–20 February	Fulton Hogan CSSR Regatta
1–6 March	New Zealand National Championship Regatta
19–20 March	Meridian Energy SISS (South Island Secondary Schools) Regatta
4–6 June	South Island Masters Regatta

Mackenzie District Council and Community Board. 2004. *Twizel: The future starts today*.

The importance of Lake Ruataniwha for rowing is also acknowledged in the report *Twizel: The future starts today*. "Lake Ruataniwha is an important point of difference for Twizel, and must be thoughtfully planned. Options for building on the benefits of Lake Ruataniwha must balance national and international rowing use with other forms of public access" (Mackenzie District Council and Community Board, 2004, p. 18).

South Island Rowing Inc. has international rowing accreditation for Lake Ruataniwha. The below specifications are the standard that the Lake Ruataniwha course meets.

> ***PART V – COURSES***
>
> ***Rule 28 – Characteristics***
>
> *The standard FISA course for international regattas, for continental and FISA World Rowing Championships and for Olympic regattas shall provide fair and equal racing conditions for six crews racing in separate, parallel lanes over a distance of 2000 metres ...*
>
> ***Rule 29 – Length of the course***
>
> *a) International regattas – The standard FISA racing distances shall be 2000 metres straight for men and women ...*
>
> ***Rule 30 – Number of lanes***
>
> *a) International regattas – On standard courses, races shall normally be held over six lanes ...*
>
> ***2 Stretches of water***
>
> ***2.1 General***
>
> *A standard international course shall be straight and shall not have less than six racing lanes. It shall provide fair and equal racing conditions for six crews. For a course constructed after February 2001, there must be a minimum of eight racing lanes ...*
>
> ***2.4 Depth of water***
>
> *For a standard international course the depth of water must be at least 3 metres throughout all racing lanes at the shallowest point if the depth over the course is unequal. However, it is recommended that a course should have a minimum depth of 3.5 metres ...*

2.5 Local conditions

The course must be sheltered from wind as far as possible. If not, there must be no natural or artificial obstacles (such as woods, buildings, structures) in the immediate neighbourhood of the course which might cause unequal conditions on the water.

On a standard course there should be no stream. Any stream existing should be so slight as not to give rise to unequal conditions on the different lanes. The running of the race must not be influenced by natural or artificial waves. The banks must be so designed as to absorb and not to reflect waves.

3.2.1 Lanes

The lanes shall be buoyed according to the Albano system. These lanes must be straight and of the same width over their whole length.

The width of each lane shall be 13.5 metres. (In special circumstances the width of each lane may be reduced to 12.5 metres.)

5.2 Off-water recreation activities

5.2.1 Skiing summary

Topic	Skiing summary
Information summary	Roundhill and Ohau ski fields are the two main commercial fields in the Waitaki Catchment. Other fields are Awakino, a small club field in the lower catchment and Mount Dobson which borders the catchment. There is also ski touring and heli-skiing opportunities in The Tasman Valley, The lower Murchison Valley the Liebig Range, the Two Thumb Range and the Ruataniwha Conservation Area. This discussion is based mainly on the commercial fields of Roundhill and Ohau. Roundhill (snow making) and Ohau ski fields (chair lift) have recently invested in new infrastructure and both fields are looking to continue development in the future. Both fields predict growth. Roundhill continues to develop its snow making capacity while Ohau is currently seriously investigating its introduction. Snow making is believed by the ski field managers to provide confidence in when a field can open, leading to greater profitability. The Mackenzie Winter Marketing Group is an umbrella group that coordinates and strengthens ski field and regional marketing. The fields provide a variety of terrain and attract a broad range of skiers and snow boarders. Marketing is geared towards international ski teams and family groups. The fields are popular with the international and domestic markets. Both fields have experienced good skiing conditions in the last couple of seasons. Both fields aim to open each year for the school holidays in July. Early season and multi-field concession passes along with cheaper air travel is likely to have contributed to skier growth in the last few seasons.
Quantitative data	Skier days 2004: 14,000 (Roundhill); 12,083 (Ohau) Growth in skier days for the next 3–5 years is predicted to grow to between 34,000 (30%) and 42,000 (60%) skier days. Roundhill has opened for the last four seasons during July school holidays as a result of having snow making. Ohau guests are 85% New Zealanders in winter and 70% from overseas in summer. There is a belief that 95% of water from snow making is returned to the system (the figure is not verified in New Zealand and other environmental factors may need to be considered).

Topic	Skiing summary
Significance	Skiing is a major recreation activity in the upper catchment. The ski industry will potentially stimulate significant and sustained year-round tourism growth in the future. Ohau and Roundhill ski fields currently provide an alternative and relaxed experience to those offered by larger fields closer to Christchurch and Queenstown. The growth in the ski industry is likely to stimulate economic development in the surrounding areas. Winter ski growth is predicted to facilitate increased year round recreational and tourist use of the area.
Future trends	Similarities have been drawn between Mackenzie ski development and the growth that has occurred in the last 20 years in Queenstown and Wanaka. Year-round tourism growth in both Queenstown and Wanaka has been greatly assisted by ski industry growth. A year-round industry allows infrastructure such as accommodation to provide a return from use in both the summer and winter seasons, making businesses economically viable. With snow sports possible in the winter and summer water and land-based activities possible in the summer, year-round recreation and tourism use is likely to grow in Mackenzie also. Future growth may be considerable compared with the current situation. The development of a new field with potentially 120,000 to 180,000 skier days per season and the potential for international flights into the region has been suggested as a possibility. These developments would rely on continued tourism growth in New Zealand and continued interest in skiing in general. The ski industry provides for the current recreation trend of activities being engaged in for shorter periods of time and with greater intensity. As incomes increase and greater demands are placed on leisure time this trend is predicted to continue.
Water flow level influence	The most direct use of water for ski fields is for snow making and running the amenities on the fields such as that needed for toilets and kitchens. More critical, though, is likely to be water for development of towns that will service the industry, for ski and service industry workers and visitors. The developing skiing industry would need to have confidence that water will be available to enable growth. An effect of changing water use that is not known is the effect of changing the scenic appearance of the area through vegetation change or changing river and lake levels on visitors' ski experiences.
Information sources	Mike Neilson (owner, Lake Ohau Lodge and Ohau snow fields, member of the Waitaki District Development Board and former chair) Christian Burtscher (shareholder, Roundhill ski field) Department of Conservation. 2000. *Canterbury Conservation Management Strategy,* Department of Conservation. Axel Reisler (Lincoln University – PhD student)
Information explanation and assessment	The information provided gives a good picture of the current industry. Assessment of the potential for future growth is based on the current industry's opinions.

Topic	Skiing summary
Information coverage	Skier numbers are relatively simple to count and have been provided by the two commercial fields in the catchment for the 2004 season. Ski industry in the region and throughout New Zealand is not highly researched and there are not many comparative studies to draw on. Climate change may affect the industry in the future. Studies that assess climate change effects have been conducted in other parts of the world (Europe, North America) but not in New Zealand. Snow maker environmental impacts and profitability studies may inform commercial development of the technology in the region.
GIS maps in companion report	Refer to page 64.

5.2.2 Skiing information

Mike Neilson (Owner Lake Ohau Lodge and Ohau Snow Fields, member of the Waitaki District Development Board and former chair)

Ohau Snow Field's skier visits (visitor days) for 2004 were 12,083.

For the financial year ended 31 October 2004, the bed nights at the Lake Ohau Lodge were 19,547, up 30% on 2003.

It is expected in the medium term (3–5 years) that skier visits will rise to 20,000 and bed nights 30,000.

Tourism has growth potential.

The Duncan Basin in the Ben Ohaus has been looked at as a snowfield attracting 120,000 to 180,000 skier visits per year.

The resources of the Mackenzie country and Southern Alps provide the opportunity for resort towns of Wanaka and Queenstown to develop in time. To limit this potential by legally limited water availability would be a disaster. The Mt Cook region was the South Island's first tourist icon and undoubtedly this region will attract in the future as many visitors as any other South Island tourist region. If you compare this with the same scenario in Queenstown the potential is huge. Reliable man made snow since 1991 has been a major driving force in the development of Queenstown Andover the last decade and could eventually do the same in the Mackenzie.

The Pukaki Airfield outside Twizel could service the region and handle international flights.

Mike Neilson believes that ski field operations result in 'positive externalities' which are the economic benefits that flow to the surrounding communities. There is a multiplier effect of the dollars spent on the mountain. For example, the numbers that have gone to Oamaru because of the penguins is large – 40,000 people stop there now and if they all spend on average $100 that is $4,000,000 within the local community. Skier multiplier is though to be something like $8 ($4 locally) for every dollar spent on the field.

The ‘Mackenzie winter marketing group’ has developed to combine the marketing effort of the region. This means that some of those who benefit from the field take on some of the costs of marketing.

Snow making at Roundhill has made the field viable. Mike believes that the redevelopment of Roundhill skifield has been an important factor in the current development at Tekapo. Skiing turns Tekapo into a 12 month season. Developers in Tekapo benefit from the huge number of visitors and holiday residents that ski fields attract.

Snow making allows a due date for opening.

The real demand is not for the water on the field but for the needs for water to service the towns that grow because of the ski fields. The ski field needs to be able to have confidence that water will be legally available to allow it to grow with confidence.

There is a drop off in farming population over the last census figures but this can be reversed with tourism. Service sector employment opportunities could reverse the declining population rate. In places like Alexandra and Cromwell there is growth from tourism and viticulture – both of these industries are labour intensive and provide jobs.

Ohau is sending a manager to the United States in the off-season to research snow making. Figures are believed to be 5% loss of water out of the system from snow making and the rest is returned.

Out of the 19,000 bed nights at the lodge in the last year, it is estimated that only about 20 were fishers. Tourists come to enjoy the outdoors. In the summer there is not specific activity but people just love being in a wilderness lodge and having dinner bed and breakfast. They enjoy the ambience.

Seventy percent of business in the summer is from overseas. In the winter, 85% of the beds are domestic (skier market). Lots of overseas people want to be talk to and meet New Zealanders.

The ski business allows the business to keep running 12 months and allows the summer business to be sustained.

Retrieved 10 November 2004, from http://www.ohau.co.nz

Length of season	17 July – 3 October 2004 (subject to change see snow reports for latest information)	
Terrain grading	Beginner 20%, intermediate 50%, advanced 30%	
Mt Sutton altitude	2000 m	Ridge altitude: 1925 m
Highest lift	1825 m	Base facilities: 1500 m
Lift base	1425 m	Vertical drop: 400 m
Area of snow fields	From top of chairlift From top of Mt Sutton	125 ha 600 ha
Lifts	1 chairlift – 795 skiers/hour 1 platter – 400 skiers/hour 1 fixed grip – 200 skiers/hour	
Snow school	Skiing/snowboarding instruction and mountain awareness programmes	
	Mountain goats beginners programme	
Snow hire	220 sets of head skis Salomon boots 40 Burton snowboards with soft bindings	
Hospitality facilities	Day lodge, cafeteria and souvenir shop	
Road toll	Free	

Christian Burtscher (shareholder, Roundhill ski field)

On average, there are 75 open days per season. There were more than 75 open days in 2004.

In 2004, there were 14,855 skier days.

The Roundhill field is growing every year – it may be over 20,000 visitors in 10 years' time.

The main visitor groups are families, school groups and international ski teams. People stay locally in Tekapo.

Water access is critical to the success of Roundhill business.

There were 140 snow making hours in the 2004 season but it was a good snow year for all fields. In the past, he has done up to 360 hours.

The field needs to be able to take water when it needs it to run the business. Other water use is general toilets and ablutions.

Snow making is an ongoing project but with the new four term year it is important to be able to guarantee opening for the school holidays in early July. Of the three main ski fields in the area, Roundhill is the only one that has been able to open at the start of the school holidays every time in the last four years; the other two have only be able to open for the start of the school holidays twice.

It is believed that the economic multiplier of skiing is $1 spent on the field equals $8 spent off the field.

There has been growth in subdivisions north and south of Tekapo and a new hotel is being built west of school. The ski industry is believed to be a big contributor to this growth.

Retrieved 10 November 2004, from http://www.roundhill.co.nz

Roundhill Ski Area, Lake Tekapo, just 2.5 hours drive from Christchurch and 3.5 hours from Queenstown. Our main lift is a 1.2 km Garaventa C-TEC Bar (New Zealand's longest), and we have a platter specially designed for beginners.

We make the most of the Mackenzie Country's cold temperatures and low humidity with our 11 gun snowmaking system (we intend to add more for the 2004 season). This means that we can guarantee Roundhill as your family skiing and snow boarding field every season.

When you think of Roundhill, think of all day sun, an easy meandering access road, gentle slopes, a safe environment, an international ski and snowboarding school, guaranteed snow, great package deals, perfectly groomed slopes and majestic views of Mt Cook, the Southern Alps, and the Lake Tekapo and Mackenzie Basin areas.

Roundhill ski fields. One of New Zealand's finest family ski resorts.

Snowmaking

With the four term school year, and the dates the school holidays fall on, it is critical for a ski field to be able to make its own snow. To make snow, you need three simple ingredients:

- *Cold temperatures*
- *Low humidity*
- *Very cold water*

The better the conditions, the greater the production. At this stage, we have 11 fan guns!

Over the summer we have put in over 500 m of 6" and 2" pipe/cable to increase our productivity and efficiency. This summer's developments are stage 1 of a three-year strategy. Snowmaking allowed skiers to enjoy 70 cm of soft, dry man made snow in early July. Still no natural at this stage.

Richard McNamara (Department of Conservation – Programme Manager – Recreation)

Heli-ski participation will increase in the future as the push from tourism increases. People want more access to more environments in a shorter space of time.

The ski field attracts people to the mountains to get an outdoor experience that they would not otherwise have.

People can jet ski and heli-ski on the same day in this area. There is a need to be able to cater for and manage growth.

Department of Conservation. 2000. *Canterbury Conservation Management Strategy,* Department of Conservation.

Areas listed as heli-skiing areas are "The Tasman Valley, The lower Murchison Valley the Liebig Range the Two Thumb Range and the Ruataniwha Conservation Area" (Department of Conservation 2000, p. 109).

Axel Reisler (Lincoln University – PhD student)

Axel Reisler believes that 95% return of water back into system from snowmaking may be correct, but there are other environmental factors to consider if looking at water use as part of the total eco-system. Things such as the time of the year the water is taken from the system and returned could also be considered.

There are no studies done in New Zealand but there are studies from Europe that consider the impacts of snow making and which discuss: humidity, vegetation type and other factors. The impact of water additive which enhances snow making could be another thing to consider. There is also increased energy consumption associated with snowmaking that should be considered.

There are no studies on the future of skiing, what the growth or decline is likely to be in New Zealand. There are studies completed in other parts of the world – Europe and North America. Ski industry and investment in it should look at the changes caused by climate change and if development is sustainable – need for that sort of assessment but nothing has been completed in New Zealand.

A minor study completed by DoC into the impact on concession at Ruapehu found that they could predict revenue relative to snow depth. A study completed in Victoria (Australia) about the effect of climate on their industry – this was not linked to New Zealand because it is difficult to compare a large land like Australia with an island – New Zealand. Canada and Switzerland have found that as small fields decline then the whole industry declines because the smaller fields are nurseries. If Australia declines because of the environment then what effect would this have on New Zealand? – this sort of research also needs to be completed.

If skiing is to develop it needs investment. In some places overseas ski fields (Switzerland) run at a loss but are considered as infrastructure as they bring tourists into the region.

There have been studies done in Methven and Ruapehu into the economic multiplier and this is something like 5%.

5.2.3 Mountain biking and cycling summary

Topic	Mountain biking and cycling summary
Information summary	Various on and off road rides are described in the upper catchment. These rides allow visitors to experience the scenic beauty of the area as well as the physical challenge of mountain bike riding. Mountain bikers are likely to take into consideration the environment they are biking through when assessing the quality of their ride. The Mackenzie Country is considered a major touring route for cycle touring. Anecdotal evidence suggests that mountain bikers make up a significant proportion of users on some traditional walking tracks.
Quantitative data	20%–30% of users of some tracks are mountain bikers. Four rides are described in the Kennet Brothers Classic New Zealand Mountain Bike Rides.
Significance	Mountain biking is a popular and mainstream activity in New Zealand. Mountain biking is a popular recreation activity in the upper catchment.
Future trends	A general increase in year-round tourism use is likely to increase the popularity for mountain biking in the area. The area may follow the trend of places like Queenstown which now has a strategy in place to develop mountain bike trails to cater for demand.
Water flow level influence	Water use changes are not expected to directly influence mountain bikers. Indirectly the effects on changed landscapes may change some experiences but in what way and to what degree is not known. Examples of change would be changes to landscapes if irrigation turned tussock in the Mackenzie Country into pasture.
Information sources	Lonely Planet. 2000. *Cycling New Zealand*. Lonely Planet. Richard McNamara (Department of Conservation – Twizel, Programme Manager – Recreation). Kennett P. 1999. *Classic New Zealand Mountain Bike Rides*. Kennett Bros, Wellington.
Information explanation and assessment	The information presented is mainly descriptive from well known mountain bike guide books. An assessment of the proportion of bikers on tracks is also given.
Information coverage	The descriptive information describes some current experiences. It does not present information from surveyed or interviewed users which would better explain experiences and values.
GIS maps in companion report	Refer to page 58.

5.2.4 Mountain biking and cycling information

Lonely Planet. 2000. *Cycling New Zealand*. Lonely Planet.

The Lonely Planet described the Mackenzie Country as part of one of the main touring routes in New Zealand. After riding from Timaru to Fairlie, day two ends at Lake Tekapo. "At the southern end of the lake of the same name the small settlement of Lake Tekapo has sweeping views across the turquoise lake with the hills and snow capped mountains as a backdrop." The next day from Tekapo to Omarama is a "ride on absolutely shadeless roads through the New Zealand outback. Spectacular mountain views accompany you everywhere. There is very little traffic along the tourist route beside the hydro canal to Lake Pukaki". Lake Ruataniwha is mentioned for its camping facilities.

> *"Day 4 follows the Waitaki Valley, mostly descending to the coast, making the longer distance less onerous. Brown, tussock grass covered hills again dominate the scene. In the first 5 km you climb over a small range of hills, getting a fine view of the southern part of Lake Benmore, New Zealand's largest artificial lake."* (Lonely Planet, 2000, pp. 264–265)

Richard McNamara (Department of Conservation – Twizel, Programme Manager - Recreation)

Mountain bikers currently use existing tracks. Areas such as Ahuriri, Hopkins and Ben Ohau and McCauly are an increasing component of use; probably 20–30% of use and increasing.

Kennett P. 1999. *Classic New Zealand Mountain Bike Rides*. Kennett Bros, Wellington.

The Kennett brothers guide to New Zealand mountain biking contains these excerpts about rides in the upper catchment.

> *"Godley Glacier (Grade 3, 2–3 days, 140 km return). Starting at Lilybank Station near the end of Lake Tekapo the ride follows a 4 WD track up to Red Stag Hut, which is only a walk away from Godley Glacier Lake."* (Kennett, 1999, p. 245).
>
> *"Lake Ohau Loop (Grade 3, 1–3 days, 126 km loop). This loop around Lake Ohau is mainly on gravel roads and 4WD track with one river crossing at Hopkins River at the end of the lake. It starts and ends at Twizel."* (Kennett, 1999, p. 247).
>
> *"Tasman Glacier (2–4 hours return, 34 km): From Mt. Cook Village to Ball Shelter this road deteriorates in to a single track and some bike carrying is necessary."* (Kennett, 1999, p. 255).
>
> *"Hakataramea Valley (3–4 days, 200 km): This classic touring route starts at Burke Pass village and crosses Mackenzie and Hakataramea Pass, where you get great view of the Alps. From Kurow the ride follows Highway 83 to Benmore Dam, a gravel road across a saddle to Lake Benmore and up Stoney River to Burke Pass."* (Kennett, 1999, p. 255).

5.2.5 Tramping, walking and hunting summary

Topic	Tramping, walking and hunting summary
Information summary	The main on-land recreation activities below Mt Cook (see previous section) are tramping and walking opportunities managed by DoC. Information that DoC holds is predominantly descriptive of the types of experiences that visitors have. DoC finds it difficult to accurately measure use levels because technical difficulties create high costs. DoC in Twizel believe that the majority of walking is done by people on day trips and use patterns are moving away from long multi-day trips. Basic track descriptions are in the table below. Trampers travelling with guides is increasing and these are both overseas and New Zealand visitors. These visitors are being displaced from other more well known tracks such as the Routeburn and the Milford tracks. Guided walkers are predicted to be 2–3% of visitors with about 20–30 guides using the area. Concession applications are increasing as more people move into guiding as a tourist business. There are conditions placed on guides, such as only being able to take 50% of bunk space in huts. Overseas visitors are becoming a greater proportion of visitors, estimated at 15–20%. There seems to be a new type of visitor coming who desire a higher standard of facilities and more comfortable accommodation to traditional hunters' huts. Huts and tracks will be brought up to prescribed DoC standards in the coming years with increased facilities management funding. This is likely to facilitate even more growth. Tenure review has already provided more opportunities for recreationists as musterers' huts and tracks come under DoC management. This is an evolving process but the changes in land area managed and recreation opportunities is likely to be considerable. DoC uses normal tourism visitor channels such as the Pukaki Visitor Centre to provide information about its recreation opportunities. In the future one of the big impacts on natural areas is predicted to come from four wheel drive use on river beds. Already there is an issue of bird and fish habitat and with increased popularity this will increase. It is perceived that a small percentage of visitors are nature tourists interested in species such as the black stilt/kaki. **Hunting** Hunting is a popular activity in the upper catchment. Various valleys are described in hunting texts including the Hopkins, Dobson, MacCauley. Animals hunted for include tahr, red deer and chamois. Hunters will access the area by helicopter and on foot. No estimate has been made of hunter numbers. Guided hunters are predicted to be 20% of hunters. There is predicted to be 10 to 15 hunting guides in the area. Waterfowl hunting is also popular on lakes and rivers. Fish & Game New Zealand hold records of hunter interviews but these have not been accessed to give specific information for this report.

Topic	Tramping, walking and hunting summary
Quantitative data	Estimate that 70% of recreational trampers are day walkers. There is an estimate of 1500 bed nights at huts in the Ohau Range. Tekapo walkway is the most popular track with about 10,000 visitors per year. Ahuriri, Temple, Huxley catchments experience about 2000–2500 visitors per year. Guided trampers comprise about 2–3% of trampers. Guided hunters comprise about 20% of hunters. 20–30 tramping guides working in the area. 10–15 hunting guides in area. Overseas visitors are about 15–20% of users. Tenure review management could change management from 188,000 hectares to about 500,000 hectares. This is still in negotiation. Currently 150 km of tracks, 30 huts and 17 tracks (in brochure) are managed.
Significance	The land-based recreation opportunities in the upper catchment are increasing in popularity. This is due to growth from overseas users and from people seeking alternatives to other more popular and well known tracks. While Mt Cook has icon status in New Zealand, its neighbouring opportunities are also significant and seem to be growing in significance. The tracks provide a good variety of traditional New Zealand tramping and walking opportunities. Significance is likely to increase further if more opportunities are made available through tenure review.
Future trends	The Department of Conservation believes there is massive potential for growth in the next 20 years. With the development of winter skiing in the area and the Mackenzie Heritage Centre due to open in 2006, the popularity of this area is likely to increase significantly for trampers. With more management and opportunities to be managed by the Department as a result of tenure review this will also add to the area's reputation and popularity. Facilities will increasingly meet DoC's prescribed standards which will convert assets once developed for hunting into purpose built recreation facilities for visitors. This is also likely to increase
Water flow level influence	Water flow levels are not likely to directly affect recreation opportunities. The main use is water for drinking, cooking and cleaning. The largest effect would be on visitors' experiences if landscapes are changed due to water use.
Information sources	Richard McNamara (Department of Conservation – Twizel, Programme Manager – Recreation) Dave Wilkins (Department of Conservation – Canterbury Conservancy – Recreation Planner) Mike Clare (DoC Canterbury Conservancy Tenure Review) Roberts G. 1997. *Game Animals of New Zealand: A portfolio*. Shoal Bay Press, Christchurch. Joll G. 1968. *Big Game Hunting in New Zealand*. Whitcombe & Tombs Ltd, Christchurch. Mark Webb (Fish & Game New Zealand) Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development, Wellington.

Topic	Tramping, walking and hunting summary
Information explanation and assessment	The information provided is mainly descriptive. It outlines opportunities and user profiles from management perceptions. It also describes the changes that are likely to land management in the future.
Information coverage	The information provided in this section considers recreation from a management perspective. It is not based on current monitoring or information taken from visitor experience or preferences research.
GIS maps in companion report	Refer to pages 4, 5, 10, 52, 54, 56, 60, 62.

5.2.6 Tramping, walking and hunting information

Richard McNamara (Department of Conservation – Twizel, Programme Manager – Recreation)

The main recreation activities in the area are tramping. Day walks are 70% of users and the rest are predominantly overnight use. The trend is for one to two day tramps rather than long four to five day tramps that may have been more common in the past. Occasionally people go for longer tramps but these are rare.

Track numbers are estimates – the wide valleys are difficult to corral people in for counting. Figures are an observation and there needs to be more quantification.

Lakes in the summer are the greatest use.

There is a maximum of 1500 bed nights per annum at huts in the Ohau Range.

Tekapo walkway gets about 10,000 visitors a year and is the most popular walk. The Ahuriri, Temple, Huxley catchments receive about 2000–2500 visitors per year.

Guided visitors are currently predicted to be 2–3% of the tramping market.

Guided hunters are currently predicted to be 20% of the total numbers.

Lower Huxley up to Monument hut is a classic tramp while more adventurous trampers go to the Landsborough.

Demand is increasing as a result of classic tramping tracks like the Routeburn and Milford becoming more crowded and so people do it themselves in this area or get a guide.

Concessions are increasing – there have been five inquiries in the last month. Concessions are for mainly guided walks, hunting and flying. Guides take both overseas and New Zealand visitors.

There could be 20–30 guides using the area but they do not use the area all the time. Some may go for three to four trips a year up the Huxley Brodrick. General conditions are that guides can only have 50% of the beds in a hut and may need to use tents.

There may be 10–15 hunting guides who use the area.

Helicopter access landing is generally remote from where other visitors are but noise is the issue so management tries to restrict flight paths. All concessionaires have a maximum number of landings allowed per year. The most popular sites for landing are Faith Cob, Upper Hopkins, Gladstone, Liebig Range north of Tekapo, Neuman range, Ben Ohau (heli-skiing), Hooker (restricted), Huxley (limited), Tasman (flight route).

Mountain bikers using Ahuriri, Hopkins and Ben Ohau and McCauly use existing tracks. It is an increasing component of use – probably 20–30% of use and increasing.

More overseas people are using facilities in recent years. Overseas proportion of use is now between 15% and 20% and increasing.

As New Zealand and overseas people in increasing numbers participate in short duration one to three day activities, people push things more so it means they will try and cross rivers when in the past they stayed in the hut.

The arid basin of the Mackenzie is a contrast to the rainforest of the coast. The range of things that people can enjoy in such a short space of time is the advantage of New Zealand. People can jet ski and heli-ski on the same day.

There is a need to be able to cater for and manage growth.

Deer cullers and trampers were the pervious users of facilities (huts tracks) in the area and now facility upgrades are bringing in a new type of user – people who are more comfortable in a higher standard of facility. Something like 30 huts are going to be upgraded in the area as new asset management money is used to upgrade assets in the coming years.

There are 200,000 hectares managed at the moment by the Department and this could become 500,000 hectares in the future with tenure review. This could result in more 4WD use, tramping, mountain biking and huts and structures. In the last two years the Department has acquired eight huts. This is more huts than envisioned would be acquired at the beginning of the tenure review process. The Department will acquire more huts and tracks in the future.

Currently in the area there are 150 km of track, 30 huts and 80 structures.

There is massive potential for growth in the next 20 years.

Information is mainly provided from the Pukaki Visitor Centre, the Twizel Visitor Centre, Ohau and Mt Cook and people come for specific information from DoC office – weather and river information.

4WD tracks and motorbikes and quads are being more greatly used. Disturbance and damage on the rivers can be significant. There will be increased conflicts over 4WD drive use on conservation estate in the future. This is an issue in Ahuriri at the moment.

The heli-ski use can be quantified but the rest of the concessions are more difficult.

A small percentage of people are nature tourists; 5–10% of people are bird watchers. There is a commercial bird viewing hide and about 2% of users would visit the hide.

Walk/ tramp information extracted from DoC brochures

Location within Waitaki Catchment	Name of walk	Difficulty	Length
Mackenzie Basin and Waitaki Valley	North Temple Valley	Tramping track	5 h return
	Temple View	Walking track	1 h return
	Freehold Creek	Tramping track	5 h return
	Ben Ohau Peak	Tramping track	4 h return
	Pukaki Boulder	Walking track	10 min return
	Lake Tekapo Walks (see below)	Walking track	1–4 h return
	Twizel Walkway	Walking track	3 h return
Lake Tekapo Walkway	Cowans Hill Track	Walking track	1.5 h return
	Pines Beach Walk	Walking track	1 h return
	Mt John Summit direct route	Walking track	2.5 h return
	Mt John Summit via lake shore	Walking track	3.5 h return
	Lake George Scott Loop	Walking track	2 h return
Ohau Conservation Area	Ahuriri Valley	Route	multi – day
	Temple Valley	Route	multi – day
	Maitland Valley and Snowy Gorge	Route	multi – day
	Dobson Valley	Route	multi – day
	Huxley and Hopkins Valleys	Route	multi – day

Future change: Tenure review and recreation opportunity review

Dave Wilkins (Department of Conservation – Canterbury Conservancy – Recreation Planner)

"In May 2002, the New Zealand Government announced that it would dramatically increase funding for outdoor recreation facilities on public conservation land in New Zealand" (Retrieved 8 November 2004, from http://wwwdoc.govt.nz). In October 2004 the Department completed consultation on how that new funding would be spent and what assets would be retained, replaced or built to provide new opportunities.

Within the Waitaki Catchment there will be little change to the management of most assets, although huts and tracks will be upgraded to meet prescribed standards for the asset type.

Mike Clare (DoC Canterbury Conservancy Tenure Review)

Mike Clare believes it is difficult to accurately estimate the increased number of hectares DoC will manage as a result of the tenure review of pastoral lease land. DoC is still in negotiation with lease holders and the outcomes are still to be confirmed.

Mike's suggestion was that perhaps either the 900 m contour, class 7 and 8 land or indigenous vegetation would be a rough estimate of land that DoC may manage in the future.

The Department has provided a basic description of changes that may occur with tenure review which is contained in the GIS report. DoC may begin to manage 40% to 50% of land that is currently managed under pastoral lease. This is an evolving process and relies on the outcomes of negotiations between DoC and the current pastoral lease holders.

Roberts G. 1997. *Game Animals of New Zealand: A portfolio*. Shoal Bay Press, Christchurch.

> *"Many well-travelled hunters contend that the Hopkins is the finest of our alpine valleys. Certainly it offers variety, with red deer, tahr and chamois hunting and good trout fishing."* (Roberts, 1997, p. 7)

> *"Their preferred habitat [Himalayan tahr] is bluff systems above and adjacent to tussock basins and sub-alpine scrubland, but tahr will also readily frequent the rugged bluffs common in steeply forested river catchments, such as Irishman's and Stoney creeks in the Dobson Valley."* (Roberts, 1997, p. 98)

> *"You will almost certainly find tahr in the mountains of Dobson Valley."* (Roberts, 1997, p. 104)

> *"The Macauley Valley. With renewed public access into this area hunting pressure has increased dramatically, which could motivate animals to move into adjacent catchments."* (Roberts, 1997, p. 113)

Joll G. 1968. *Big Game Hunting in New Zealand.* Whitcombe & Tombs Ltd, Christchurch.

> *"Such rivers as the Waimakariri, Havelock, Godley and Murchison, being the centre of chamois country and easily accessible, have been heavily hunted in recent years."* (Joll, 1968, p. 197)

> *"The rivers in the following list are in tahr range and all carry good number: Landsborough, Hopkins, Godley. Rangitata, Havelock, Rakaia, Waimakariri. Two subsidiary mountain ranges, the Liebig Range and the Ben Ohau Range, offer fine hunting."* (Joll, 1968, p. 181)

> *"Such rivers as the Godley, Havelock, Rangitata and lately the Landsborough have all produced horns that are well above the 12 inches which is considered the minimum for trophy qualification."* (Joll, 1968, p. 182)

Mark Webb (Fish & Game New Zealand)

Fish & Game New Zealand hold hunter interview information from over 800 interviews over 10 seasons. This has not been analysed in detail for purposes specific to the assessment of the Waitaki Catchment but a small summary is in the Fish & Game New Zealand submission for Project Aqua. A better understanding of hunting in the Waitaki Catchment could be obtained with further analysis of the Fish & Game New Zealand hunter interviews.

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development, Wellington.

Sinclair Knight Mertz (2004, p. 114) report that the valuation of the recreation value from water fowl hunting is difficult, due to the lack of firm numbers of the number of hunting trips which take in the Waitaki.

Frank Hamilton (Aorangi Recreation Hunters Club)

There are 48–50 members who mainly hunt small game – geese, ducks, wallabies. Club members conduct about 25% of their hunting in the Mackenzie Basin. Club members go on local trips for geese etc.

5.2.7 Gliding summary

Topic	Gliding summary
Information summary	Omarama is an important place for gliding nationally and internationally. National events are regularly held there. Gliding businesses are based in Omarama. World records are regularly broken due to the favourable gliding conditions. Water use is minimal but gliders do see the effects of water use when they are in the air and it is likely that this could affect the experience of those interested in scenic views.
Quantitative data	It is estimated that there are 2500 flights a year and about 6000 to 8000 hours a year from Omarama airfield. There are about 400 to 500 people a year flying with Southern Soaring. World records are regularly broken.
Significance	Gliding in Omarama is nationally and internationally significant due to the world records that are frequently set here.
Future trends	As tourism grows in the future it is logical that commercial glider flights will also increase. Omarama, because of its gliding conditions, will remain a focus for gliding in New Zealand.
Water flow level influence	The effects of changing water use are unknown. Changing water use could affect the visual experience of those in the air. The extent of the impact of experiences is not known. The comment was made that significantly changing the area of water bodies could affect air currents but further research based on actual scenarios would be needed to verify this.
Information sources	Southern Soaring website http://www.soaring.co.nz Gliding New Zealand website, http://www.gliding.co.nz Doug Hamilton (Southern Soaring)
Information explanation and assessment	Information is from one key interview of a knowledgeable participant and descriptive information is from websites.
Information coverage	Specific research into gliders' experiences would give a clearer picture of how changing scenery may affect people's experiences. The potential of gliding as a tourist attraction could show the economic value of the activity. The impact of changing water conditions on gliding conditions would show the impacts of changing water use on gliding.
GIS maps in companion report	Refer to page 12.

5.2.8 Gliding information

Retrieved from Southern Soaring website 12 November 2004, from http://www.soaring.co.nz

In the heart of New Zealand's Southern Alps, Omarama is the world's most spectacular soaring site. World and national gliding records are broken here on a regular basis and our famous wave conditions provide a unique opportunity for long distance and high altitude flight. The soaring season runs from September to April. These are warm summer months in New Zealand (from 3°C at night to 30°C by day).

Doug Hamilton (Southern Soaring)

There are 2500 flights a year and about 6000 to 8000 hours a year from Omarama airfield.

There are about 400 to 500 people a year flying with Southern Soaring.

Direct water use is relatively small for airfield – it is used on planes and for drinking.

People like looking at the lakes and rivers though, so the aesthetics do matter. If Pukaki or Tekapo are low it is commented on by people who fly over them.

More irrigated land could make it easier for landing but it depends on what happens – border dyke irrigation may make it more dangerous to land in paddocks.

Larger water bodies could affect air flows. In general the effects are unknown. Other clubs include Omarama aviation club, Glide Omarama and private people.

Retrieved from Gliding New Zealand website 12 November 2004, http://www.gliding.co.nz

Clubs and organisations listed for Omarama on Gliding New Zealand's website: Gavin Wills' Mountain & Wave Soaring School, High Country Gliding, North Otago Gliding Club, Omarama Gliding Club (formerly Wigram GC), Southern Soaring.

Events held in Omarama include the following.

2004/05 soaring season			
Event	**Year**	**Practice**	**Contest days**
South Island Gliding Championships	2004	13 November	14–20 November
National Championships: 18 m, 15 m, Standard, Open, Club Class	2005	2 January	3–14 January

5.2.9 Events summary

Topic	Events summary
Information summary	In the upper catchment a variety of events take place annually. Some are water-based sport events, such as rowing, yachting, kayaking, jet boating and fishing competitions. Several multi-sport events are also regularly scheduled and some contain a water-based component such as kayaking. Other sport events are directly related to the scenic physical values provided by the area, such as mountain bike or running races.
Quantitative data	For the first half of 2005 approximately 20 sport events are scheduled in the upper catchment area. It is difficult to estimate exact numbers, as not all events have been advertised and they are publicised through many different sources.
Significance	Several competitions are of national significance such as the Maadi Cup (rowing), the Whitewater Nationals, the Aviemore Classic (yachting) and That Dam Run (running), which hosts the New Zealand 100km championships in 2004. The mountain bike and multi-sport events have entries from all over New Zealand and are also significant.
Future trends	Events have been booming over the past decade, especially multi-sport events, such as the Speight's Coast to Coast or the Southern Traverse are attracting international competitors. Due to the scenic and physical values provided in the upper Waitaki Catchment, the potential for running this sort of event is very high.
Water flow level influence	Water flow level is a major influence for all the water-based events mentioned above. Currently Meridian Energy manages the water levels accordingly during events to ensure safety and to meet competitors' recreational needs.
Information sources	Raewyn Moss (Meridian Energy) http://www.meridianenergy.co.nz http://www.mtcook.org.nz/
Information explanation and assessment	The information derived on events is mainly descriptive and based on one information provided by Meridian Energy and web research for advertised events. Since it is difficult to estimate the amount of events that have not been covered by these sources, actual numbers are only estimates.
Information coverage	There is no research available on impacts, satisfaction or user numbers taking part in the events listed below.
GIS maps in companion report	No specific page.

5.2.10 Events information

Raewyn Moss (Meridian Energy)

For many events Meridian Energy may not sponsor them but it works with the event organisers to ensure they meet safety requirements. For example Meridian Energy manages recreational releases for the kayakers on the upper Tekapo and Pukaki Rivers, holds lake levels steady for rowing at Lake Ruataniwha and the open day of duck shooting season at Lake Waitaki and canal safety requirements. Meridian manages flows in the Lower Waitaki River during salmon spawning, and so on.

Regularly sponsored Meridian events include:

- Kayak Marathon – Meridian sponsors annually (kayak race from Lake Pukaki to Lake Benmore down the canals)
- Aviemore Classic – Meridian sponsors annually (yacht race)
- Waitaki Salmon Fishing Competition (this event has not run the last couple of years as the event organisers have not been able to get a permit from Fish & Game New Zealand for the event)
- Twizel Half Marathon/Pyramid Run.

Events which are one-off or less regular which Meridian has sponsored include:

- Whitewater Slalom Nationals – Easter 2004, (Tekapo canoe course)
- rowing events (anything from schools events to national championships) at Lake Ruataniwha
- DoC Twizel Summer Programme.

Other events Meridian is aware of include:

- Bloody Good Event – Mt Cook to Christchurch race (multisport event)
- Round Lake Tekapo Mountain Bike race
- Jet Boating events on the Lower Waitaki
- Fishing competitions – lakes, lower Waitaki, and possibly canals.

Retrieved 10 November 2004, from http://www.meridianenergy.co.nz

The Meridian Energy Aviemore Classic

The Meridian Energy Aviemore Classic Yacht Race is a trailer yacht race held each Labour Weekend on the beautiful Lake Aviemore in the Waitaki Valley, 40 minutes inland from Oamaru or Waimate. The Classic is a spectacular sight, all of the race can be viewed from the roads on the north and south side of the lake amidst some of the most beautiful scenery in New Zealand. A great day or weekend for the whole family.

The Meridian Energy Kayak Challenge

The Meridian Energy Kayak challenge is an annual Labour Weekend event held on what is regarded as the premier kayak marathon course in New Zealand. Being held on the Pukaki and Ohau Canals adds to the excitement of the event as there are three portages down the side of the hydro station where competitors must get out of their kayaks, carry them around the station and jump back in on the other side. This is truly unique opportunity kayaking down the Meridian Energy canal.

That Dam Run

Contested in the beautiful Waitaki Valley every November, That Dam Run consists of several races and this year has been chosen to host the New Zealand Athletics 100 km Championship.

Twizel Half Marathon

The one-lap 21.1km course cuts a very scenic route around Lake Ruataniwha and over the Ohau Canal Road, beginning and finishing in the Twizel township.

Retrieved 10 November 2004, from Mackenzie Tourism http://www.mtcook.org.nz/

Date	Where	Event	Other information
30 October to 7 November 2004	Fairlie	Mackenzie Art Week	A week of art viewing and classes for everyone.
7 November 2004	Albury	Opawa Homestead Picnic Day	Family picnic day with music, wines, sausage sizzle, bake stall, art and crafts, the Mackenzie Highland Pipe Band. $5 adults, $2 students, children under 12 free.
November 2004	Twizel	Aoraki Regatta	Rowing regatta on Lake Ruataniwha.
27 November 2004	Twizel	Mistletoe Market	Food and craft stall with a Christmas Parade.
1 January 2005	Fairlie	New Year's Day Parade	The Fairlie Heritage Museum hosts the parade of Vintage machinery and vehicles along Fairlie's Main Street to entertainment and stall on the Fairlie Village Green.
2 January 2005	Kimbell	Kimbell Day	A day of country fun and entertainment in the area behind the Silverstream Hotel, Kimbell.
7–10 January 2005	Lake Tekapo	Mackenzie Muster	Naturist Festival
January 2005	Twizel	Otago Rowing Championships	Rowing regatta on Lake Ruataniwha.
January 2005	Twizel	Canterbury Rowing Championships	Rowing regatta on Lake Ruataniwha.
22 January 2005	Twizel	Twizel Air Show	Event is every two years, alternates with Wanaka Warbirds. A great setting on Lake Ruataniwha at water's edge and among trees with ample parking and controlled access. Commenced about 10 years ago. Now air and water craft/family oriented. All air and water craft pay own costs (www.airshownz.com).
29 January 2005	Twizel	Salmon Wine Festival	11 am to 5 pm, Twizel Events Centre.
February 2005	Fairlie	The Howes Brothers Mountain Bike Race	A choice of two great mountain bike rides: 'The Farm Track MTB Race' 22 km or the 'The Spur Road/ Bridal Track MTB Race' (www.mtbpursuits.com).
25–27 February 2005	Mt Cook	The Mt Cook Bloody Good Race	(www.bloodygoodevents.co.nz/mtcook-inde.htm)
Waitangi Weekend	Fairlie	Lions 4 Wheel Drive Safari	A Fairlie Lions fundraiser visiting properties not usually available to the public.
6 February 2005	Mt Dobson	The Reiker Cycles Mount Dobson Mountain Bike Race	An event to challenge both the serious and the recreational mountain biker in a unique and special mountain environment (www.mtbpursuits.com).

Date	Where	Event	Other information
February 2005	Twizel	South Island Rowing Championships	Rowing regatta on Lake Ruataniwha.
21–26 February 2005	Twizel	New Zealand Rowing Championships	Rowing regatta on Lake Ruataniwha.
February 2005	Twizel	Helibike Challenge	Helicopter Up and Mountain Bike Down. Heli Biking combines the excitement of a helicopter flight with the adventure of a mountain bike ride down high country farm tracks.
February 2005	Fairlie	Fairlie Youth Triathlon	A triathlon focusing on participation as individuals or teams – for primary and secondary students. Around the outskirts of Fairlie.
March 2005	Burkes Pass	Pass to Pub Mountain Bike Race	An exciting event over the hills from Burkes Pass to the Albury Pub. Website: www.mtbpursuits.com.
March 2005	Twizel	South Island Secondary Championships	Rowing regatta on Lake Ruataniwha.
March 2005	Twizel	New Zealand Secondary Schools' Championships	Rowing regatta on Lake Ruataniwha.
3rd weekend in March 2005	Fairlie	Fairlie 500 Men's Golf Tournament	Play 72 holes over two days on Fairlie's Glencairne course.
Late March/ early April 2005	Fairlie	Fairlie Ladies' Glencairne Golf Tournament	Women compete around 36 holes of golf over the weekend.
Easter Monday		Mackenzie Highland Show	Mackenzie County's Agricultural and Pastoral Show – the largest one day show of its type in the Southern Hemisphere.
June 2005	Lake Tekapo	The Run 79 Lake Tekapo Mountain Bike Pursuit	New Zealand's most scenic 90 km MTB Race through rivers, past the stations and beside the lake before heading for the finish in Lake Tekapo. Website: www.mtbpursuits.com.

Date	Where	Event	Other information
Labour Weekend October 2005	Twizel	Hard Labour Weekend	Each year Twizel hosts the following three events over Labour Weekend and entrants in all three events are eligible for prizes as “Hard Labourers”. Saturday – Ben Ohau Pyramid Run – 18 km off-road run in the magnificent Mackenzie Country. Contact: Mark and Kate at tel/fax 03 435 0800 (email msanders@clear.net.nz). Sunday – Meridian Energy Kayak Challenge. Kayak down the spectacular canals and lakes. Contact: Bob Buchanan (ph: 03 339 0949, email kayakbob@xtra.co.nz). Monday – The Totara Peaks Gutbuster Mountain Bike Race. A choice of 15 km or 26 km over well-maintained 4WD. Contact: Jo (ph: 03 435 0076) or Dave (ph: 04 435 0008) or email tpda@twizel.com).
Last Saturday of November 2005	Twizel	Mistletoe Market	Food and craft stall with a Christmas Parade.

5.3 Tourism activities

5.3.1 Tourism summary

Topic	Tourism summary
Information summary	The upper Waitaki Catchment including Mt Cook is an important tourist destination. Tourism growth is significant and commercial activities such as skiing, scenic flights, guiding are major attraction within the area. State Highway 8 is one of the major tourist routes in New Zealand, and the region attracts short stop visitors travelling between Christchurch to Queenstown. Facilities that cater for travellers, such as the Pukaki Visitor Centre or the planned Mackenzie Heritage Centre, have the potential to be large tourist attractions. The scenic values are outstanding and need to be considered for any future development.
Quantitative data	Important tourism numbers: • 1.2 million visitors per annum along State Highway 8 (Transit New Zealand) • visitor spend 2004: $124.4 million; forecast for 2009: $167.5 million (35% increase) • visitors to the Pukaki Visitor Centre: currently 118,000 per annum • visitor numbers for specific commercial recreation activities, such as skiing and guiding are discussed in the activities section of the report.

Topic	Tourism summary
Significance	Mt Cook is a significant destination in the upper Waitaki Catchment. The catchment is a significant touring route between Christchurch and Queenstown. Scenic flights are an important commercial activity in the Mt Cook area and as a national tourism product. The lakes serve as a summer holiday destination for New Zealanders, whereas the majority of tourists drive through the area without staying overnight. It is likely that the region will become more significant in the future due to tourism growth (see future trends). Lake Tekapo (Church of the Good Shepherd) and Lake Pukaki are significant stopping points for bus travellers (photos and toilet facilities).
Future trends	The development of the Mackenzie Heritage Centre in Tekapo (2006) will attract visitors (estimated 200,000 visitors). Skiing is currently a significant attraction for many New Zealanders. Growth in this activity and subsequent accommodation for winter visitors is likely to stimulate year-round tourism growth. This is likely to be beneficial for existing operators such as heli-bike and scenic flight operators. Growth is also likely to stimulate new tourism activities in the area. Review of high country pastoral leases is likely to bring further land under DoC's management. This will provide further recreation opportunities and is likely to enhance the overall reputation of the area as a place for outdoor recreation activity. Fishing is likely to grow as on overseas tourist activity as the New Zealand Pure marketing attracts increased visitor numbers. Lake-based water sports, typical of New Zealand summer holidays, are likely to increase in popularity as they are currently reported to grow each year.
Water flow level influence	All commercial activities described in this section rely on natural experiences and scenic values. It is unclear what influence a change of water level will have on those attributes and hence tourism activities. Irrigation will change the current physical attributes (sere land colours; the visual openness of the land surface giving a sense of vast scale) substantially. Future tourism growth relies on reliable water supply to allow the towns in the region to expand. The ski industry relies on water being available for snow making.
Information sources	Densem G. 2004. *Waitaki Landscape Study*. Waitaki District Council. *Aoraki Mt Cook/Mackenzie Trade Handbook 2004*. Karen Mullaly (Mackenzie Tourism) Department of Conservation, Twizel Area Office Brian Tierney (Brian Tierney Management Services) Malcolm Anderson (Mackenzie Centre Community Trust) Martin King (Mackenzie District Council – Planner) Tourism Research Council. 2004. *Commercial Accommodation Monitor*. Alistair Shearer (ECAN senior resource care officer and heli-bike operator) Tim Rayward (Air Safaris)
Information explanation and assessment	Visitor arrivals, guest nights and spend are available through the commercial accommodation monitor from Tourism Research Council New Zealand (TRCNZ). Traffic counts are available from Transit NZ. The recent Waitaki landscape study gives a good overview of scenic physical values in the catchment. Other assessments are based on individuals personal accounts.

Topic	Tourism summary
Information coverage	Mackenzie Tourism do not conduct any primary research and rely on that completed by the TRCNZ. The area covered by TRCNZ includes Timaru and Mackenzie districts. There is no primary research of visitors' experiences in the catchment.
GIS maps in companion report	Refer to pages 12, 14, 16, 50 as well as specific activity maps.

5.3.2 Tourism information

Karen Mullaly (Mackenzie Tourism)

Mackenzie Tourism does not conduct any primary research and relies on that done by the Tourism Research Council. Mackenzie Tourism has provided a list of operators in the area from their publication :*Aoraki Mt Cook/Mackenzie Trade Handbook 2004.* This list reveals that most activities are outdoor recreation and nature based.

Attractions and activities (Mackenzie Tourism, 2004, p. 18)		
Alan's 4WD Tours	Glencairn Golf Club	Mt Hay Station
Alpine Guides (Aoraki) Ltd. Alpine Recreation	Glentanner Horse Trekking	Mt John University Observatory
Barry Clark Fishing Guide	Hawkswood Arabians	Mt Nessing Golf Club
Ben Ohau Golf Club	Heli-Bike and Heli-Hike	Mt Dobson Ski Area
Benmore Salmon – 4 pm fish feeding	Heliski Tekapo	Ohau Snow Fields
Big Sky Adventures	Heslip's Hatchery	Roundhill Ski Area
Blue Art Gallery	High Country Expeditions	Ski Shack
Braemar Station Golf Cross	Hovabuzz	Spry Fly NZ
Brede Arkless Mountaineering	Icesport Tekapo	Stargazing Tekapo Tours
Burkes Pass Church	Mackenzie Alpine Trekking Company	The Church of the Good Shepherd
Camerion	Mackenzie Country Hunting Guides	The Fly Hatchery
Discover Tekapo – Adventure Centre	Mackenzie Golf Course	The Garden Cottage and The Parkbrae Estate Gardens
Fairlie Golf Club	Max's Fly Fishing Tours	The Mackenzie Heritage Centre
Fairlie Heritage Museum	Mid Southern Tracks Ltd.	The Professionals Armstrong Alpine Realty Ltd
Glacier Explorers	Morelea Farm Experience	Tussock Country Horse Treks
Glacier Sea-Kayaking	Mt Cook Fishing Safaris	Twizel Recreation and Hire Limited
Glacier Southern Lakes Helicopters	Mt Cook Salmon Limited	Wilderness / Outdoors at Twizel
	Mt Cook Ski Planes	

Department of Conservation concessions on public conservation land

Estimates based on DoC information (not exhaustive)

Type of service	Number of concessions (active)
Alpine guiding	5
Aircraft flights (helicopter)	7
Accommodation	1
Guided walking	5
Guided hunting and fishing	6
Aircraft landings (scenic; plane)	2
Ski field (area)	3
Helicopter skiing and boarding	2
Horse trekking	1

Brian Tierney (Brian Tierney Management Services)

Brian has completed business plans for tourism clients in the past and they have been specific to projects in the Mackenzie. Information extracted from these reports shows:

- 1.2 million visitors per annum along State Highway 8 based on information from Transit New Zealand
- a visitor spend in 2004 of $124.4 million rising to $167.5 million in 2009 or a 35% increase over the five years
- visitors to the Pukaki Visitor Centre are currently 118,000 per annum while those using the car park and toilets are estimated to be in excess of 200,000 per annum.

Malcolm Anderson (Mackenzie Centre Community Trust)

The Mackenzie Centre Community Trust has been working to develop the Mackenzie Heritage Centre. The centre will be in Tekapo and is planned to open in 2006. It is expecting to attract 200,000 visitors per year.

Retrieved 5 November 2004 from http://www.nzmuseums.co.nz

> *Planned to open in 2006 in Lake Tekapo, the heart of the Mackenzie region. Our inspirational stories will be told using both technology and people to convey key messages. Facilities that the Mackenzie Heritage Centre will house: eight themed story areas, 120 multi-media experience, themed retail space, two licensed cafes, entertaining live interpreters, interactive database on the Mackenzie, 100-seat conference room, 40-seat education room.*

Martin King (Mackenzie District Council – Manager of Planning and Regulations)

The new district plan does not contain a lot of information about recreation and tourism. The plan is regulatory and not trends- or advocacy-focused. The council is going through zoning changes for tourism in Twizel and Tekapo to allow for development. This will Allow for more backpackers and motel extensions. Land will be allocated for different forms of zoning to allow for growth.

The Heritage Centre in Tekapo has a consent to allow development in the near future. It is predicted there will be more intensification in Ohau and Ruataniwha. Fishing and hunting, heli-skiing, tramping and mountain biking commercial applications are increasing.

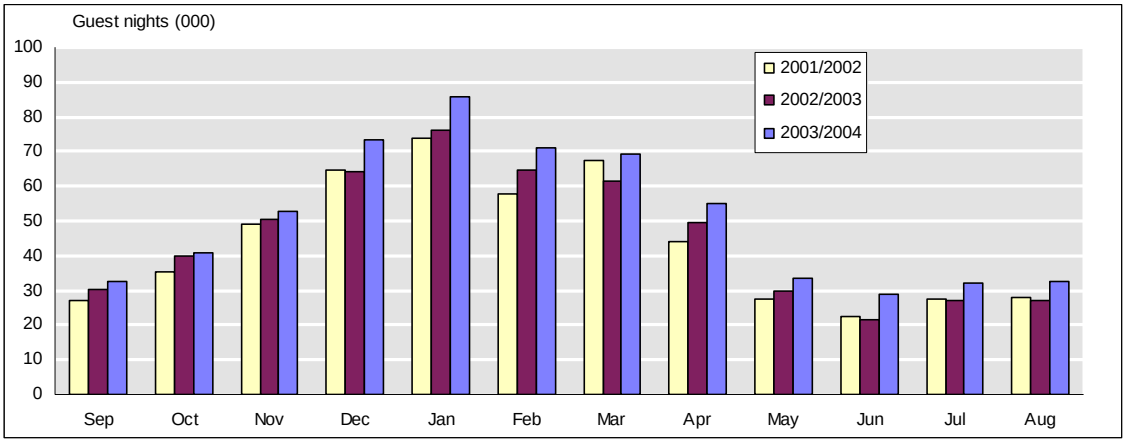
No formal studies have been completed of tourism and impacts and demands in the area – there is no formal strategy for tourism at the council level but there may be a need for one.

It is difficult to predict 15 to 20 year growth. There is a development boom taking place at present though.

While there is not a council tourism strategy, the Tourism Board advocates on the council's behalf.

Tourism Research Council. 2004. *Commercial Accommodation Monitor*. Retrieved 1 November from http://www.trcnz.govt.nz.

Mackenzie/Timaru total guest nights – September 2001 to August 2004



Note that this is from Mackenzie/Timaru and is not restricted to accommodation providers within the catchment. These figures give an indication of the general increase in tourism in the general area. They show the summer peak in accommodation use.

Lake Pukaki Visitor Centre

The Lake Pukaki Visitor Centre provided figures for July 2003 to June 2004 of 117,602 visitors. Visitors for 2002/2003 equalled 92,615, which equates to a 28% increase from 2002/2003 to 2003/04.

The most recent figures for June 2004 to October 2004 are 28,798. This equates to a 20% increase from the previous year for the equivalent period which was 24,055.

This shows that tourism numbers continue to show healthy growth of over 20% per annum.

Traffic figures

Relevant information from Transit NZ produces the following traffic characteristics and identifies the growth in tourist traffic. The following table summarises the relevant information regarding traffic flows along SH8 from Transit NZ, adapted for Lake Tekapo (source: Brian Tierney 2004).

Traffic characteristics – SH 8 – Tekapo/Pukaki	2001 peak	2001 off peak	2002 peak	2002 off peak	2003 estimated annual	2004 estimated annual
Total vehicles/day	**1250**	**750**	**1250**	**750**	**2058**	**2091**
Commercial vehicles	50	35	50	35	50	35
Coaches	75	40	75	40	121	125
Passenger (light)	1125	675	1125	675	1852	1881
Camper vans	85	42	85	42	134	140
Passengers/day	**4586**	**2111**	**4668**	**2111**	**7090**	**7450**
Coaches	3000	1120	3000	1120	4350	4660
Passenger cars (1.4)	1456	886	1456	886	2405	2440
Camper vans (2.5)	212	105	212	105	335	350

Using these Transit NZ figures, the total number of visitors in 2001 was 1.215 million. During the peak season 835,000 travellers passed along SH8 between Tekapo and Pukaki and in the off peak 380,000 travelled the same route. Tourism New Zealand validates these calculations.

No statistics are available for the number of coaches and camper vans that stop at Pukaki but random observations in the peak period indicate up to 15 coaches in the car park at any one time and the public toilets reportedly cater for up to 200,000 people per annum.

Using these figures, the number of travellers on SH8 in 2001 was 1,300,140 – during the six-month peak period there were 891,900 travellers and off-peak 408,240 travellers. Tourism New Zealand figures confirm the validity of these calculations. Transit NZ estimates that 58% of SH8 traffic is south bound, indicating many tours and tourists journeys are circular, south through the Mackenzie and returning either north up the West Coast, north through Dunedin/ Oamaru/Waimate, or north flying out of Queenstown. It is not possible to quantify these routes (source: Brian Tierney, 2004).

Note: The above information is all traffic, and not just tourist traffic. However it is acknowledged that the coaches, passenger and campervan statistics are heavily weighted towards the tourist.

Landscape

Landscape and scenery is important to visitors to New Zealand. "Visitor interest in a particular activity is driven by a number of different features of that activity ... the location the activity is set in – one of the main reasons visitors choose to come to New Zealand is because of the scenery. For this reason the area an activity is in can have a big influence on the decision to do an activity" (AC Nielsen, 2002, pp. 6–7).

The effect landscape and scenery has on visitors' experience in the upper Waitaki is not known. Specific research is needed to be able to assess the importance it plays in visitors' experiences at the moment and how changing landscape appearance through water use could impact on visitors' experiences.

The following excerpts are from a recent landscape study of the catchment by Graham Densem, 2004.

Densem G. 2004. *Waitaki Landscape Study*. Waitaki District Council.

Some landscape values in the Upper Waitaki are:

- *unique turquoise lake colours;*
- *sere land colours;*
- *the visual openness of the land surface;*
- *the continuity of the land surface, undivided by fences, roads, shelterbelts, and such rural developments;*
- *the importance of long views, giving a sense of vast scale;*
- *the wide visibility of hill and mountain backdrops surrounding basin areas, sometimes at 30 or 40 kms distance;*
- *the unimproved and lightly improved tussock/grassland vegetation;*
- *the seasonal patterns of grazing, mustering and high country management;*
- *the low rates of occupation by human and farm activities;*
- *the braided river beds and their seasonal flow patterns;*
- *Lake Ohau*
- *the sense of difference to down land New Zealand*
- *the weather patterns and atmospheric clarity – winds, light and cloud patterns, snow, rainstorms, fogs and frosts, shimmering summer heat;*
- *night time moon and star patterns, brightness and clarity; the artificial lakes – Benmore, Ruataniwha*
- *silence wind and river noise*
- *the artificial lakes – Benmore and Ruataniwha.* (Densem, 2004, p. 22)

Ahuriri land unit values

... The predominant landscape value is of unity and naturalness from continuity of the lightly modified vegetation, openness from lack of trees, sense of the landform and overall structure of ranges, basin and river.

The value of unity is diminished by extensive perimeter-plantings of shelter trees on flats east of the river, and by liberal farm trackage on prominent side slopes west of the access road. Neither of these developments have been carried out in ways that fit in with the landscape, and they therefore needlessly diminish the considerable values of the lower valley.

The Ahuriri River is of value for the impressive feature of its braided bed and terraces, the vistas these afford, but also for its rarity within Waitaki District as a braided river of this size still unregulated by human regimes. (Densem, 2004, p. 42)

Alistair Shearer (Environment Canterbury Senior Resource Care Officer (soil) and heli-bike operator)

He believes that a common figure quoted is that 40,000 hectares out of 1 million could be irrigated above the hydro lakes in the catchment.

What visitors see in the Mackenzie country could be the biggest effect.

Centre pivot irrigators will be obvious and the green grass that they create – it will not be like the recent Mackenzie country vista if the brown tussock is changed to green grass. Most of the water taken for irrigation would be taken out of the dams and would be something like 2% of water – the value of the vista and impact on it is unknown.

Scenic flights: Tim Rayward (Air Safaris)

Total numbers depend on the weather conditions each season and is in the vicinity of 15,000–20,000 people per annum.

There is more competition for visitors now compared with 10 years ago when scenic flights were one of the few activities in the area.

This activity appeals to higher spending tourists . There are inter-airport flight options that suit people passing through and Air Safaris operate between Lake Tekapo, Glentanner Park, Mt Cook and Pukaki. More people staying in the area would increase use numbers.

Ninety-five percent of people are from overseas: 30–40% Japanese, 10% German, 10% other Europe, 10% Australian.

People are attracted to the scenic appeal of Mt Cook Glaciers, Fox and Franz Joseph Glaciers. Air Safaris is competing against a lot of other areas, such as Milford Queenstown, Fox and Franz. People often only do one flight when they are on holiday. Air Safaris finds if a bus comes through from the south it might only get a few flying as the rest all flew into Milford from Queenstown. This would work the other way too.

It is a relatively big business for the area, providing income for 15 people.

Air Safaris does satisfaction surveys that ask about visitors' experience and satisfaction. It is a big job to keep track of records but 99.5% of comments are positive.

Low lake levels and associated dust detract from the beauty of the area. The lake is unusable for recreational boaties when at low levels and Lake Tekapo has suffered in popularity because of this.

This problem seems to have got worse in the last 5–10 years.

Other scenic flight operators

Other operators did not want to give commercially sensitive information about use numbers and flight numbers, but provided similar nationality breakdown to Air Safaris.

6 Lower Catchment: Waimate and Waitaki Districts (Below Omarama)

6.1 On-water recreation activities

6.1.1 General recreation studies summary

Topic	General recreation studies summary
Information summary	For Project Aqua, the Recreation Effects Assessment Report (2003) investigated current recreation use of the Waitaki River. The report was based on three pieces of primary research: survey of Waitaki River recreational users, from 3 January to 6 February with a three-day pilot period in late October and early November 2001 and two additional survey days completed on the 16 and 17 March; a local community survey conducted during the same period as the recreation survey; and a low river flow trial. These reports aimed to evaluate the significance of the recreation activity and opportunities that exist in the area (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 5). A literature review was also conducted as well as a review of statutory documents. Unfortunately, "The survey period was marked by high river flows and generally poor weather" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 4). This is believed to have had a major effect on the on-river recreation survey, which was influenced by weather conditions. This research has been used in this report to provide descriptive information about individual activities. It has not been used as a comprehensive description of recreation users of the Waitaki River mainly because of the conditions that unfortunately influenced results: poor weather and high river flows during the survey period (89% of the survey period the river was flowing above 400 cumecs); the one month plus five days survey timeframe; limited (13) places where surveys were administered; and small sample sizes for individual activities (i.e. 13 swimmers and 15 jet boaters). These factors are considered to bias the sample and not be representative of the typical river user population. General findings from the study are discussed further below. Another study of the lower Waitaki River by the Waitaki River Committee, 1978, has been discussed. This research was restricted to fishing and is outdated but provides examples of previous research methods.
Quantitative data	Limited reliable quantitative data about recreation participation has been collected through general recreation studies. The following activity-based sections of the report provide quantitative data about particular activities where it is available.
Significance	Significance information is unavailable at the general level but some information is available at the individual activity level in the following sections.
Future trends	Trends for recreation in general cannot be stated from general recreation reports but are noted in the individual activity sections that follow.
Water flow level influence	Water flow level influence cannot be determined from general recreation studies but is noted against the individual activities in the following sections.
Information sources	Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*. Special Lower Waitaki River Committee. 1978. *The Lower Waitaki River Statement on the Future of the Lower Waitaki River and its Recreational Opportunities,* Waitaki Valley Acclimatisation Society.

Topic	General recreation studies summary
Information explanation and assessment	The general information available about recreation use of the Waitaki Catchment does not allow a confident assessment to be made of recreation activities at the general level. Information about individual activities is provided in the following sections.
Information coverage	There are some studies based on primary research of visitor experiences for the lower catchment but it is considered that they do not provide a reliable or up-to-date overview of recreation use of the Lower Waitaki Catchment. Information contained in the *Project Aqua Recreation Effects Assessment Report* (2003) helps describe recreation activities in the sections that follow.
GIS maps in companion report	Refer to pages 68, 68, 70, 72.

6.1.2 General recreation studies information

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*.

As this is the most significant and high profile recreation research recently conducted in the catchment it was considered important to discuss it in depth.

The lower Waitaki valley offers a range of recreation opportunities. These activities were listed during the community survey with the percentage of people who participate in them in brackets: hunting (19%), walking (9%), golf (8%), tramping (6%), picnicking (3%), horse riding (3%), gardening (3%), bowls (3%), sightseeing (3%), waterskiing (3%), squash (2%), scenic driving (2%), cycling (2%), swimming (2%), camping (2%), gardening tours (2%), photography (2%), tennis (2%), 4WD (1%), other (28%) (Boffa Miskell, Rob Greenaway & Associates 2003a, p. 9).

Discussion of sample and representativeness of results

This report was prepared to "assess the potential for the proposal to affect recreation activity and opportunities for recreational use and enjoyment of the lower Waitaki River valley" (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 5). The report aimed to describe two things:

- the nature of current recreation use and opportunity in the area of the lower Waitaki River valley between the Waitaki Dam and coast; and
- anticipated changes to recreational use and related opportunities as a consequence of the Project Aqua proposals (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 5).

The information gained in achieving the first of the two bullet points above is considered the most valuable for the current recreation and tourism research review. The second, though, may potentially inform the changes that could occur in the changing water use discussion.

The report is based on three pieces of primary research: survey of Waitaki River recreational users, from 3 January to 6 February with a three-day pilot period in late October and early November 2001 and two additional survey days completed on the 16 and 17 March; a local community survey conducted during the same period as the recreation survey; and a low river flow trial. These reports aimed to evaluate the significance of the recreation activity and opportunities that exist in the area (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 5). A literature review was also conducted as well as a review of statutory documents.

Unfortunately, "The survey period was marked by high river flows and generally poor weather" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 4). This is believed to have had a major effect on the on-river recreation survey, which would have been directly influenced by weather conditions.

The poor weather and high river flows are likely to have influenced the respondents who used the river during this period and so would have biased the sample who completed survey forms. A mean daily flow chart compares the river flow of the main survey period with the average flow for the period 1965–2002 (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 4). The chart shows that the mean daily flow is above 500 cumecs for most of the survey period, while the average for the years 1965–2002 is entirely below 300 cumecs.

Only using the mean daily flow to interpret the river conditions could be misleading, however, as the Waitaki River's flow regularly fluctuates and it is possible for the river to be below 350 cumecs for part of a 24-hour period but still have a mean daily flow of over 500 cumecs. The number of hours the river flowed within each 50 cumec range during the recreation survey study period is considered to give a reasonable indication of river conditions. The table below shows the number of hours the river flowed in each cumec range for the main study period. Note that this is for all hours and non-survey hours (including night time) are also included.

Table 1: Number of hours the Waitaki River flowed in each cumec range for the period 03/01/02 to 06/02/02[1]

River flow in 50 cumec ranges	Number of hours river flowed within 50 cumec range	Percentage of total hours river flowed within 50 cumec range
201–250 cumecs	7	0.8%
251–300 cumecs	1	0.1%
301–350 cumecs	8	1.0%
351–400 cumecs	76	9.0%
401–450 cumecs	159	18.9%
451–500 cumecs	171	20.4%
501–550 cumecs	311	37.0%
551–600 cumecs	104	12.4%
601–650 cumecs	3	0.4%

While there are no strict definitions of ideal flow rates for recreation activities, at over 400 cumecs the river is commonly described by many participants to be a 'big river'. Particular river conditions are likely to influence participants' decisions to fish, jet boat and swim on or in the river. While the exact effect is unknown, the predominantly high river flow for the survey period is likely to have influenced recreationists' decisions to use the river in a particular way or not use the river at all. It is not possible to know for instance how many out-of-town users checked the river flow from home and decided to not use the river for their recreation during the survey period because of the high river flow conditions.

[1] Information extracted from mean hourly flows (cubic metres per second) for the Waitaki River at Kurow (site 71104) supplied by Environment Canterbury for the period. Environment Canterbury consider the information provided as provisional information and has not been checked using the Council's Quality Assurance audit procedures.

The low response rate on many days of the survey is potentially on effect of the high flow rate and poor weather conditions. While surveyor effort can not be exactly determined from the report, on five days of the main survey period five or less people were surveyed.

Other factors that influenced sample selection should also be considered. Corbett (2004, pp. 8–9), in his audit of the report comments when assessing method appropriateness and reliability that the effect of the survey timeframe on the survey: "... it is understood that the focus of the survey was on the peak season, when the greatest number of people who would be affected by Project Aqua, would be present. I find this to be a defensible position, although it would have been desirable to extend the survey period throughout March to gather more data from salmon anglers". Kerr (2004, p.10) states when discussing the survey: "This sample is temporarily biased. It also targeted locations where large numbers of recreators were expected, so may not be a representative cross section of river users at the times surveying was undertaken."

While surveying was conducted in order to survey as many users as possible during the peak season the bias created by only surveying for one month of the year can not be fully known. One bias is known, though: small game hunters, were not surveyed because the survey period was outside their season. While both Corbett and Kerr commented on the timing of the survey neither commented on the high river flows of the survey period.

The survey was conducted by surveyors on the banks of the river at 13 access points. While it is a difficult methodological issue to overcome, users on the river in boats were not able to be contacted to survey. The report states that this was the case in 26 cases (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 9). Users who accessed the river from points away from the 13 survey points also would have missed being surveyed. Again, this was a difficult challenge to overcome for this survey; the bias created by not surveying people who were not using the 13 surveyed points again cannot be known. The respondents to the community river recreation and community survey identified 50 access points (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 49–50).

The recreation survey report discusses error and bias created by the survey method. "The survey cannot be considered an effective random sample of all visitors to the Waitaki River as it did not continue throughout the year and it did not target visitors throughout the entire river system. Rather, survey sites were selected on advice to gain the greatest level of response possible. However, it can be considered an effective sample of the survey population, which is all recreational visitors to the river during the survey periods" (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 7). The last sentence needs to be interpreted to more accurately represent the survey sample used in the survey: the survey population was those contacted at 13 popular access points; and the recreation visitors were those prepared to access the river during a survey period when the weather was reported to be generally poor and for 89% of the time (including night time) the river was flowing above 400 cumecs. For these reasons, this report should only be used to provide a general description of recreation use of the river.

The recreation effects assessment report uses four indicators to assess recreation significance: *dedication, loyalty, alternatives and local* (Boffa Miskell, Rob Greenaway & Associates 2003a, p. 73). The survey factors discussed above and the low response rate for some activities influenced the results. For example, swimmer dedication is assessed to be not very high as only one third of respondents use the Waitaki River. Their loyalty is assessed to be high as they spend 84% of their time on the Waitaki River (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 73). These results are from participants who are likely to have chosen to access the river during high river conditions and in total there were only 13 respondents. These results cannot be seen to represent the behaviour of all swimmers.

Similarly, the sample of jet boaters surveyed was only 15 people and the conclusions drawn about their behaviour cannot be treated to be representative of jet boat users on the Waitaki River.

The recreational significance ratings of the main recreation activities in the Recreation effects assessment report (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 76–77) will not be included in this report. This is because of poor weather and high river flows during the survey period; the one month plus five days survey timeframe; limited places where surveys were administered; and small sample sizes for individual activities. These factors are considered to bias the assessment and so the sample the study is based on is considered to not be representative of the typical river user population.

Discussion of findings: Boffa Miskell, Rob Greenaway & Associates, 2003 recreation and community reports

The following section discusses findings from the recreation and community survey.

General description of river use

> *Demographics. Respondents were more middle-aged or older, male, employed or retired, and had higher level of tertiary qualification than the New Zealand average. The percentage of Maori participants was low (3%) compared with the national average and comprised less than a third of the percentage of Maori in the South Island population (7%). More then half of the respondents were from South Canterbury. (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 2)*

Higher than average level of tertiary qualifications is a common finding of recreation profile research (Devlin et al, 1995, p. 45). The male dominance of the survey may be due to the high number of fishers surveyed, with over 90% of fishing licence holders in New Zealand believed to be held by males (Unwin & Image, 2003, p. 18).

As has been discussed above, it is not known what effect the weather and river conditions of the survey period and the locations surveyed from had on the demographic profile of the survey sample. Analysis may be: there may have been fewer younger people involved in swimming on the river because of the high river flows (13 respondents stated swimming as their main activity); there may have been fewer females surveyed as part of a family group jet boating trip because families may not have considered the river suitable for jet boating during these river conditions (only 15 respondents stated jet boating as their main activity); and there may have been fewer people from out of South Canterbury on the river than usual because those travelling to use the river may have checked river conditions at home and decided the conditions were not suitable for their recreation activity. The accuracy of this analysis is unknown, but the point is that the effect of the survey conditions on the demographic profile of river users cannot be stated. More importantly, how this sample represents the 'normal' river user population can not be known.

The Waitaki Valley Community Survey interviewed one person from 60% of occupied dwellings in the Waitaki Valley (total of 387 door-to-door interviews). A quarter of respondents had visited the Waitaki River at least once a week in the last year. Seventeen percent had not visited the river at all in the preceding 12 months. Fishing, walking and golf topped the list of the most common recreation activities (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 45).

"While trout fishing was spread the length of the lower Waitaki River, salmon fishing was largely limited to the lower reaches of the river (77% below Papakaio). Whitebaiters and other sea fish anglers congregated at the mouth of the Waitaki, while picnicking, dog walking and swimming were most popular between Kurow and Duntroon. Jet boaters used the length of the river" (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 2). These results represent the respondent location preferences of those who completed survey forms. As has already been stated, the effect of the survey conditions on who completed surveys and where they were is likely to have influenced results but the exact effect is unknown.

River stay length and loyalty

"Respondents were asked how many days their visit would be for. Twenty-three percent described themselves as locals, and therefore not on a visit... the majority (56%) had stayed or intended to stay two days or less. If 'locals' are excluded from this group, the total who had stayed or intended to stay two days or less rises to 71%" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 18). Again, it is not known what effect weather or river conditions had on results. But it is assumed that if river and weather conditions are better, people will stay in a place where they are recreating for longer. If there has been better weather and different river conditions there may have been a higher proportion of respondents from outside of the local region who completed survey forms.

"The majority (60%) had been visiting for 10 or more years. Twenty-two respondents (6%) had been doing so for 50 years or more, and one had more than 75 years experience of their favoured activity on the Waitaki River" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 19). This shows the length of time since the respondent's first visit to the river. It does not state the number of times the respondent had visited the river.

While it is difficult for a recreation respondent to estimate past visit frequency, the number of visits in the last 12 months was asked. This was used as a way to calculate river loyalty by comparing the number of visits to the Waitaki River as a percentage of the number of visits to any river. From these figures jet boaters were considered to be the least loyal participants with 43% of their time spent on the river (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 20). This seems to be a crude measure of loyalty as jet boaters who are members of clubs will be involved in 'river runs' that are organised for other rivers. So while they may value the Waitaki River for its high recreation value they may engage in activities on other rivers to be part of a group activity. This type of analysis was not part of this survey. Also, the sample of 15 who stated jet boating as their main recreation activity is a small sample. Similarly, the high loyalty of swimmers (84%) should be treated with caution as only 13 respondents (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 20) stated swimming as their main activity.

River preference

The survey asked respondents to list their preferred river for their activity and then state other rivers that they choose for their activity. They were then asked to rank their preferred rivers. Sixty three percent of respondents selected the Waitaki River as their preferred river for their activity. The second most commonly ranked river as a preferred river for the respondents was the Mataura River (38%). One hundred and ninety five respondents ranked the Waitaki river, compared with 16 who ranked the Mataura river. Apart from being able to state that for the respondents who completed the survey the Waitaki was highly ranked, not a lot else can be taken from these results, because of the low sample size of the alternative rivers to the Waitaki.

Fish & Game New Zealand's review of the report calls into question whether fishing another river makes it an alternative. "The other rivers are just as likely to be fished because they offer different experiences" (Webb, 2002, p. 1).

A question that was asked but not reported on in this section was, "For the most **preferred location**, could you describe why you ranked it number one?" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 42). Answers to this question may have revealed reasons why the river was selected as the most popular river but are unknown.

Popular activities and place of origin

Trout fishing; salmon fishing; trout/salmon fishing; whitebaiting; taking a break (driving); picnicking; viewing river; jet boating; swimming; and walking the dog were the activities most commonly listed as main river activities (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 7). Place of origin was mainly from a range of South Island places, with the most common being Oamaru (25%); Dunedin (17%); Christchurch (8%); Timaru (8%). The only other places that were non-South Island places were Europe (3%) North Island (2%), North America (1%); Australia (1%). The effect of weather and river conditions on those who chose to use the river or stay in the area is not known. Those on holiday who have a choice of where they stay are likely to travel to a place that has better weather and/or recreation conditions.

Change of experience

Respondents were asked if their main activity in this area was better, same or worse than the first time they visited. It is to not surprising that 39 percent of respondents (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 29) stated that they thought their main activity was worse. River conditions are constantly changing and it is not surprising that the river conditions were perceived to be worse than the first time the respondent visited. The most significant reason by far that the river was worse was fewer fish (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 29).

Conflict

Conflicts on the river were minor with 83 percent of interactions with other users being positive (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 30). The recreation effects assessment report claims that this shows the river is below its social carrying capacity (Boffa Miskell, Rob Greenaway & Associates 2003a, p. 40). This result should be verified at a time when river conditions were more optimum for a range of recreation activities, and when more users are likely to be present.

Site preference

The report states, "Respondents were asked why did they choose to undertake their main activity in the study area" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 30). The exact wording was "why did you choose to <say main activity> here? (what are the special features of this location)" (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 42). I believe it is unclear whether the respondent would have understood the question to be the actual part of the river they were using or the river as a whole. Some responses to this question seem to be related to a specific site on the river rather than the river as a whole. Responses with percentages who responded in brackets: fishing (size, number, variety) (23%); close to home (12%); easy access (10%); nice/pleasant/ peaceful area (6%); close to accommodation (4%); close to road (2%); recommended (1%); size of river (1%); safe (1%); shady/sheltered (1%); family/friends here (1%); good boating (1%); always come here (1%); clean/clear river (1%); organised event (1%); convenient (1%); off road (1%); other (30%).

Respondents were asked to name the most important feature of the study area. The fish (32%), the peacefulness (15%), quality of water (14%), the accessibility (12%), and the accessibility (12%) were the most commonly selected responses. From a list of environmental descriptors views were relatively evenly spread across a spectrum from 'untouched' to 'modified' (Boffa Miskell, Rob Greenaway & Associates, 2003b, pp. 31–32).

Respondents were asked to list activities that they would not like on the river. The three most common responses were jet skiing (37%); jet boating (25%) and jet boat racing (19%) (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 33).

Respondents were asked things they cannot do on the river now. The response to this question illustrates the height of the river during the survey period as one third of respondents stated they could not participate in their desired activity because the river was too swift (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 34).

Overview flights

Two flights were conducted to observe river activities. The first was on 27 January 2002. Environment Canterbury cumec readings show that the river was running around 540[2] cumecs during the first flight period. This was a Sunday and 51 people were observed. The second flight took place on the 2 February, the river was running at approximately 420 cumecs and 34 people were observed. The high river flow is likely to have influenced recreational use of the river and these results.

The activities observed were: fishing, walking, camping, jet boating, kayaking, windsurfing, boating swimming, sailing walking dog and picnicking (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 39).

Special Lower Waitaki River Committee. 1978. *The Lower Waitaki River Statement on the Future of the Lower Waitaki River and its Recreational Opportunities*. Waitaki Valley Acclimatisation Society.

This work discusses recreation issues and values on the lower Waitaki in the context of the effects of future use of water on recreation values. The work is now over 25 years old but the issues discussed are still relevant. Importantly the methods used to assess the value of the river for recreation could inform future research.

Angler surveys carried out by Boud for the Waitaki Valley Acclimatisation Society (WVAS) in 1973–74, 1974–75 and by WVAS in 1975–76, 1976–1977 (174, 401, 859 and 717 interviews respectively) were reported on. These showed that over half the fishers on the river came from outside the Acclimatisation society's district (Special Lower Waitaki River Committee, p. 11). They also give the percentages of overseas visitors that varied between 5%, 1%, 1% and 2% for the years surveyed.

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[2] Information extracted from mean hourly flows (cubic metres per second) for the Waitaki River at Kurow (site 71104) supplied by Environment Canterbury for the period. Environment Canterbury consider the information provided as provisional information and has not been checked using the Council's Quality Assurance audit procedures.

Other methods used were aerial surveys, which revealed the number of anglers on the river at one time; angler density measure; comparison with other equivalent international rivers; diary scheme; angling effort and catch rate (pp. 12–15). While this work is now considered out-of-date the research methods used could be informative if repeated.

6.1.3 Fishing summary

<table>
<tr><th>Topic</th><th>Fishing summary</th></tr>
<tr><td>Information summary</td><td>Compared with the national average, fishing has above average popularity in the Central South Island region, of which the Waitaki Catchment makes up a significant part. The fishers in this region are loyal and spend a lot of their time fishing within their own region compared with other New Zealand regions.

The lakes provide good fishing opportunities for both brown and rainbow trout, which leads to high user numbers on Benmore (Ahuriri Arm) and Aviemore lakes.

NIWA have used the data from the National Angler Survey to make a simple assessment of different water bodies' significance for fishers. "The Waitaki River is arguably one of the most highly valued river fisheries in New Zealand, and regarded by FGNZ as nationally important (see Tierney et al, 1982), attracts anglers form throughout the country" (Unwin & Deans, 2003, pp. 14–16).

The Waitaki River is accessed by (jet, row) boats, and from banks for fishing. Salmon fishing on the Waitaki tends to be split amongst mouth and upriver anglers, with fishing from anchored jet boats also providing a popular option. A unique feature of the Waitaki River is the presence of major fisheries for both species of trout, and salmon occurring in the same river. The Waitaki provides good habitat resulting in big fish being caught there. Tributaries to the Waitaki, including the Maerewhenua and Hakataramea are also important rivers for fishing. The Hakataramea has been important in the past for salmon spawning.

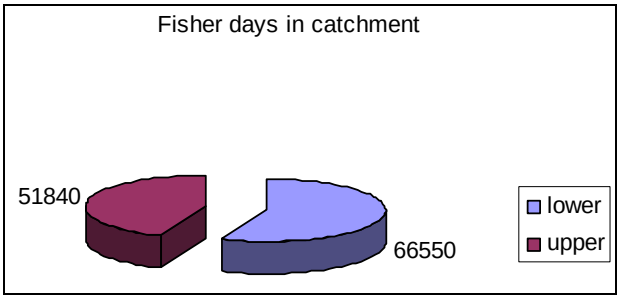
Due to its large size, the Waitaki River provides a unique 'big river' fishing experience. As user densities vary between river stretches, the river provides for both solitude seekers and fishers seeking social interaction.

The river mouth of the Waitaki River provides whitebaiting opportunities in early spring. The river mouth is also a popular spot for various other fish species.</td></tr>
<tr><td>Quantitative data</td><td>For the whole Central South Island regions the recorded fishing days were as follows.

<table>
<tr><td>Lake</td><td>30,800 ± 2.7</td></tr>
<tr><td>Reservoir</td><td>41,000 ± 2.5</td></tr>
<tr><td>Mainstem river</td><td>59,200 ± 3.8</td></tr>
<tr><td>Lowland river</td><td>10,600 ± 1.3</td></tr>
<tr><td>Back country</td><td>12,200 ± 1.1</td></tr>
<tr><td>Canal</td><td>14,500 ± 2.4</td></tr>
</table>

Central South Island Fish & Game New Zealand region:

<table>
<tr><td>Adult male population</td><td>34,700</td></tr>
<tr><td>Whole-season licences</td><td>5,520</td></tr>
<tr><td>Licences as % of adult males</td><td>14.3%</td></tr>
</table>
</td></tr>
</table>

Topic	Fishing summary
Quantitative data (continued)	Number of lower catchment fishing days compared with the upper catchment:  Fisher days in lower catchment from NIWA 2001/02 Angler Survey: Aviemore Lake 11,580 Bell's Pond 220 Benmore Lake 21,900 Cameron Loch 120 Hakataramea River 1,610 Kurow River 60 Maerewhenua River 200 Otamatapaio River 50 Otematata River 180 Waitaki Lake 3,050 Waitaki River 27,580 Total lower catchment 66,550 Visitors to the Central South Island region contributed an estimated 62,200 fishing days. Central South Island licence holders recorded only 11,500 angler-days in other fishing regions.
Significance	The general reputation as a fishing area and anecdotal evidence of popularity according to local fishers and fishing guide books would lead to the conclusion that the hydro lakes and the Lower Waitaki River are at least nationally significant for fishing. Factors which reflect the significance of the Waitaki River are: • three major fish species can be caught on the same river • the size of the river allows for solitude and limited interaction with others • the size of fish caught. Fishers from outside the area are reported to commonly visit the Waitaki River to fish it for a week. The commonly made statement is that the Waitaki is a different and special fishing experience which has greater water pressure and requires different fishing techniques to other rivers. The river stays clean and fishable during Canterbury Nor'westers when other rivers are not.

Topic	Fishing summary
Future trends	Fishing is a very popular activity in the modified environment of the hydro lakes in the lower catchment area. The NIWA research suggests a trend for river fishing to be decreasing in popularity and lake fishing to be increasing in popularity. The reasons for this change cannot be known from the survey results. A combination of more people generally using lakes and hence more people fishing, and lower satisfaction due to fewer fish being caught in rivers is one possible explanation. Fishing popularity on the Waitaki River is likely to be reversed with a large salmon run on the Waitaki River. Summer recreation and fishing on the hydro lakes is likely to remain popular or increase in popularity. The lower Waitaki is a very popular river for fishing, as it provides a unique "big river" experience, which is likely to continue to attract both New Zealand and international visitors.
Water flow level influence	Modification of the Lower Waitaki is likely to impact fishing experiences, as it will change the big river experience that can be gained there at the moment. The extent habitat and experiences are changed would be determined by the amount of impact. Fishing habitat is likely to be changed with lower water levels resulting in fewer fish stocks. Fishing intensity is likely to increase with greater access resulting from lower water levels, which would allow more reaches to be fished which is likely to deplete fishing stocks. Lower water levels could lead to more impacts on the river bed caused by 4WD use that would gain greater access to the river. This is likely to impact fishing experiences and habitat. Scenic values are likely to be changed if there is greater irrigation use of water and change to landscapes. The impact of farming use on waterways could also impact fishing habitat. The large amount of water in the river at the moment is reported to protect the Waitaki River. This protection is likely to decrease the more water is extracted from the river. Decreasing the size of the river is likely to decrease the number of braids which would increase the level of conflict between jet boaters and fishers. A more consistent river flow would allow greater access to the river. This would be perceived as a positive factor for some fishers while others would consider it negatively, due to some of the factors discussed above. Less experienced anglers may find lower river levels on the Waitaki River safer and more appealing. A reduced river flow would make the Waitaki more like other smaller rivers. Lower water levels is likely to decrease The Hakataramea River as a spawning river for salmon. A controlled water flow during whitebait spawning may improve spawning rates.

Topic	Fishing summary
Information sources	Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*. Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development. Unwin U, Image K. 2003. *Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results for the 2001/02 National Angling Survey*. NIWA Client Report CHC2003–114. Unwin U, Deans N. 2003. *Travel Distance as an Index of Angling Value: A Preliminary Study Base on the 2001/02 National Angling Survey*. NIWA Client Report CHC2003–113. Giles R. 2002. *Catch that Trout: Fishing the South Island of New Zealand*. Reed Publishing, New Zealand. Busch T. 2003. *Trout Fishing: A guide to New Zealand's South Island* (5th ed). Bateman, Auckland. Kent J. 1998. *South Island: Trout Fishing Guide*. Reed Books, Auckland. Kent J, Madsen PM. 1997. *New Zealand's Top Trout Fishing Waters*. Reed Books, Auckland. Neville Ellis (Tim) (President New Zealand Salmon Anglers Association) Mark Webb (Fish & Game New Zealand) Frank Greig (Glenavy store owner, former fishing competition organiser) Sid Campbell (Waimate Rodd and Gun Club) Graeme Warren (fishing guide) Alan Holmquist (Waitaki river Liaison Group) Bruce Parker (local fisher and founding president of the Waitaki River Users Liaison Group) Kevin Pearce (DoC, Oamaru)
Information explanation and assessment	Confidence can be placed in the data gained from the NIWA Angler Survey. The information sourced gives a good description of the number of fishers in the local area and also the number of fishers who use particular waterways. The NIWA travel distance report provides some initial analysis of the importance of individual rivers. The information taken from texts provides fishing descriptions of individual waterways. Information from individual fishers and groups describes some of their values, especially for the Waitaki River, and the experiences they have. The Boffa Miskell studies for Project Aqua provides limited information about fisher experiences for this report. Factors that limited the survey were: poor weather and high river flows during the survey period; the one month plus five days survey timeframe, limited places where surveys were administered, and small sample sizes for individual activities. For these reasons the survey results were not greatly used to inform this discussion.

Topic	Fishing summary
Information coverage	The information collected is mainly NIWA Angler Survey data and descriptive information from a range of sources. The NIWA data gives a broad outline of the number of people who fish in the area and the number of fisher days spent on individual waterways. The descriptive information gives an initial picture of fishers' experiences, values and opinions about fishing conditions. This information is from a very limited number of sources and cannot be considered representative of fishers. The people who have been interviewed are people who have a relatively high involvement and interest in fishing. In light of there not being a comprehensive study of fishers' experiences and values, these interviewees have been contacted to gain some insight into what issues are most important to fishers.
GIS maps in companion report	Refer to pages 74, 75, 76, 77, 78, 79, 87.

6.1.4 Fishing information

Unwin U, Image K. 2003. *Angler Usage of Lake and River Fisheries Managed by Fish & Game New Zealand: Results for the 2001/02 National Angling Survey*. NIWA Client Report CHC2003-114.

This report provides estimates of angler effort for lakes and rivers managed by Fish and Game for the 2001/02 season. Fisher numbers for particular rivers are contained in Appendix One.

Note: Further review of this report is in the fishing activity discussion in the Upper catchment section of this report.

Extracted from estimated angling effort (angler-days ± 1 standard error) for 25 rivers which were subdivided into two or more reaches (Unwin & Image, 2003, pp. 22–29).

Waitaki River	River not specified 1580 ± 480
	Waitaki Dam to Kurow Bridge 3600 ± 960
	Kurow Bridge to stone wall/pylons 4640 ± 760
	Stone wall/pylons to SH1 4640 ± 900
	SH1 to tidal limit 2330 ± 390
	Mouth and tidal zone 10,770 ± 2070
	Total, all reaches 27,580 ± 2640

Unwin U, Deans N. 2003. *Travel Distance as an Index of Angling Value: A Preliminary Study Base on the 2001/02 National Angling Survey*. NIWA Client Report CHC2003-113.

This report analyses the data gathered for the National Angling Survey 2001/02 in an effort to "develop a conceptual model of New Zealand river fisheries in which their importance is related to their total annual usage, and to the distance anglers are prepared to travel to reach them" (Unwin & Deans, 2003, p. i).

This report and analysis supported previous opinions that had been held about particular rivers and most notably for the Waitaki that "many rivers which have previously been identified as nationally important, such as the Mataura, Rakaia, Waitaki, Ahuriri, Hunter, and Mohaka, continue to feature prominently when there importance ranking is taken into account" (Unwin & Deans, 2003, p. 18).

Added value in this report comes from the Central South Island Fish & Game New Zealand region being used as a case study. In particular two Waitaki Catchment rivers, the Tekapo and the Waitaki, are included in the analysis. This comment is made in the results discussion:

> *The Waitaki River, arguably one of the most highly valued river fisheries in New Zealand, and regarded by FGNZ as nationally important (see Tierney et al, 1982), attracts anglers from throughout the country.* (Unwin and Deans, 2003, pp. 14–16)

Note: Further review of this report is in the fishing activity discussion in the upper catchment section of this report.

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*.

This report contains a recent overview of fishing on the lower Waitaki River.

> *Trout and salmon fishing were introduced in the Waitaki River in the early 1900s by acclimatisation societies set about extending New Zealand's existing sporting resources. Today, as a direct result of their success, particularly at the Hakataramea hatchery, the Waitaki River is a well-known trout and salmon fishery.*
>
> *Most angling occurs during the main fishing season, which runs from 1 October to 30 April. There is an extension to the season below SH1 from 1 June to 31 August, and no salmon angling is permitted between the Maerewhenua mouth and the Waitaki Dam in April. Fishing is still available at some of the inland hydro lakes outside this period. The Waitaki River is known to have a later salmon run than (sic) rivers further north (the Waimakariri and Rakaia especially) and the main season for salmon on the Waitaki runs through late February and March... A daily bag limit of no more than six sport fish (of which no more than two may be salmon and no more that four may be trout) has been set by Fish and Game New Zealand to protect the fishery.*
>
> *Fishing is popular along the entire length of the Waitaki River using jet boats and direct access along the banks. Anglers who which to access the central islands and quieter back braids frequently use dinghies. Fish and Game has identified 26 sites of public assess to the river, with a further two currently under construction ... Respondents to the 2002 community and river surveys undertaken for this project indicated 50 access points, many of which are over private land and are used by agreement.*
>
> ***Trout***
>
> *The Waitaki River and a number of the tributary rivers feeding into it provide the habitat for brown and rainbow trout fisheries. The species composition of trout in the lower Waitaki River was shown for netting studies to be about 35% rainbow and 65% brown in 1988-89, with the proportion of rainbows higher in the upper half of the river (about 45%) than further downstream. The percentage composition varies between years.*
>
> *Sea-run brown trout enter the estuarine areas of the Waitaki River generally during the months of November through February. Average size range from 3 lb to 8 lb, but it is not uncommon for sea-run trout to be landed in the 10 lb to 14 lb range.*

A unique feature of the Waitaki River is the presence of major fisheries for both species of trout, and salmon occurring in the same river. Rainbow trout spawning is only known to occur in the three main tributaries, the Awakino, Hakataramea, and Maerewhenua Rivers, with the first two the most important. In general the most favoured method of fishing trout on the Waitaki is casting with artificial baits, spinners and wobblers. The next most favoured method is taking trout is fly fishing.

Salmon

The Waitaki salmon fishery was established between 1901 and 1907, when 1.5 million Chinook/King salmon ova were successfully hatched and released from the purpose built hatchery on the Hakataramea River. The released salmon spread over the following 15 years to most major east coast rivers. In May 1905, four years after the first release in the Hakataramea River, a lone salmon was captured in a trap returning from the sea. Subsequent catches, although varying from year to year, increased steadily to a level where the long-term sustainability of the Waitaki fisheries resource was ensured. The river currently produces catches of salmon in excess of 18 kg (40 lb).

Many anglers own baches or cribs at the river mouth and access the river on a daily basis. During peak salmon runs, hundreds of anglers can be found on the river on any given day. The usage peaks for the annual events such as the Waitaki Salmon Fishing competition, which is normally held in March each year and attracts around 900 contestants (although the 2002 salmon Fishing Competition was cancelled due to a shortage of salmon in the river). Salmon fishing on the lower Waitaki River is predominantly undertaken with spin bait, as opposed to feathered lures.

Salmon fishing on the Waitaki tends to be split amongst mouth and upriver anglers, with fishing from anchored jet boats also providing a popular option. Although adult salmon enter the Waitaki River between Late November and May each year, the peak runs occur between January to March, with spawning occurring from April to June. The fishery is noted for its later run than other rivers further North, and this is reported to provide regional anglers with a 'finale' to their salmon season.

To ensure the long-term sustainability of the resource, salmon fishing in the Hakataramea River and the Upper reaches of the lower Waitaki River (i.e. between the Waitaki Dam and the mouth of the Maerewhenua River) is prohibited during the month of April ...

Other fishing

Throughout the year kahawai, flounder, mullet, cod, skate, and a variety of other salt-water fish are recreationally fished for at the river mouth. At least 23 species of native fish are also present n the lower Waitaki River and tributaries, including shortfinned and longfinned eels.

The South Island Eel Industry Association currently estimated that approximately 10 tonnes of long finned eels is caught annually on the Waitaki River. Of this catch, commercial eelers take approximately 9.5 tonnes, with the remaining 0.5 tonnes fished by recreational eelers ...

... Eeling activity on the Waitaki is centred on the north side of the river immediately opposite Duntroon.

Whitebaiting

The Waitaki River supports a popular recreational and commercial whitebait fishery. Each year in later winter and early spring whitebait migrate up the Waitaki River to spawn in the river's swampy riparian margins. (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 51–57)

Comments from the following texts about specific water bodies are contained below:

Giles R. 2002. *Catch that Trout: Fishing the South Island of New Zealand*. Reed Publishing, New Zealand.

Busch T. 2003. *Trout Fishing: A Guide to New Zealand's South Island* (5th ed). Bateman, Auckland.

Kent J. 1998. *South Island: Trout Fishing Guide*. Reed Books, Auckland.

Kent J, Madsen PM. 1997. *New Zealand's Top Trout Fishing Waters*. Reed Books, Auckland.

Hakataramea River

"This favoured salmon spawning stream was subjected to severe flooding in 1985 followed by a drought. It has since recovered and holds good stocks of brown and rainbow trout which can at times be spotted and fished for with dry flies and nymphs. In the lower reaches trout, tend to be smaller but plentiful (140 small and medium-sized fish/km). Higher upstream in the gorge, trout are less plentiful but larger. Early in the season there is 30 km of fishable water, but fish tend to drop back downstream during the summer low-water conditions. A very popular small stream with easy access, it has a rock and shingle bed and is fringed with willows." (Kent 1998, p. 149)

Lake Aviemore

"Most fish are taken from the shore by spinning or by trolling from a boat. There are few fly-fishing spots, especially along the shallow shoreline adjacent to the main road (SH 83), where fish can be taken on all fly methods. Other useful spots are the Otematata River delta, the lower reaches of this stream, and some of the small stream mouths, where cruising fish can be seen on their beat. The deep water above the Aviemore Dam and at the mouth of Deep Stream is worth fishing at night with a well-sunk night lure, either from the shore or from a boat. There are basic camping facilities at Waitangi." (Kent 1998, p. 151)

"It is well stocked with both rainbow and brown trout and, being encircled by road providing adequate access, requires only a general description. All methods of fishing are practised successfully here." (Busch 2003, p. 210)

Lake Benmore

"This large lake has 116 km of rather inaccessible shoreline. There are two arms to the lake: Haldon Arm with its somewhat milky glacial water from the Tasman Glacier and from spillway discharges; and Ahuriri Arm with clear, snow-fed river water. The lake holds vast stocks of brown and rainbow trout and a few land-locked sockeye salmon. The Ahuriri mouth and delta is very popular for fly fishing. Winter fishing is quite popular in this lake, and good catches are made deep trolling from boats even when the surrounding country is covered with snow." (Kent 1998, p. 152)

"The left arm of the lake is parallel to and accessible in places from Highway 83 and provides excellent fly fishing. The convergence of the Ahuriri River with the head of Lake Benmore is an excellent position for trout. It is worthy of several days exploratory fishing by anglers using either technique." (Busch 2003, p. 212)

Lake Waitaki

"Waitaki holds brown and rainbow trout averaging 1 kg, which are generally landed by deep trolling from boat or by live-bait fishing. The lake water is sometimes milky from glacial sediment. There are some shallow inlets adjacent to the main road where fish can be spotted and stalked in bright summer conditions. There's a basic campsite at Fishermen's Bend." (Kent 1998, p. 149)

Otematata River

"This is an excellent medium-sized, stable river with well-developed pools and runs flowing through isolated, barren hilly, tussock country. It holds browns and rainbows up to 2 kg and fish can be spotted. Trout from Lake Aviemore spawn in this stream, so early in the season fish can be in poor condition. The fish population tends to be greater where the river opens out across flats. The Clear Stream tributary offers another 10 km of excellent water before falls block fish progress, but a great deal of tramping is required to fish this stretch of river." (Kent 1998, pp.151–2)

Waitaki River

"Some stretches can only be reached by boat, as the river follows a braided course below Lake Waitaki. The water is sometimes a milky-green colour due to glacial silt, but in summer clarity is usually good. There are good-sized brown and rainbow trout here, most of which are caught by spinning. There's often a good sedge rise late in the summer evenings, especially just above and below the Hakataramea confluence. Good water can be reached from an access track down the true left bank, both below and above the Kurow bridge. At the mouth a few good sea-run fish are taken on spinners by salmon anglers. Birds working and fish splashing herald the onset of good fishing. A boat is a definite advantage here. This is a famous quinnat salmon river." (Kent, 1998, p. 148)

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development.

Sinclair Knight and Mertz (2004) use a very basic equation to calculate the value of the river for fishing resulting in a figure of $475,000 and $1.3 million. The authors believe that the river will stay steady for fishing use over its study timeframe (Sinclair Knight Mertz, 2004, p. 112).

Neville Ellis (Tim) (President New Zealand Salmon Anglers Association)

The three main branches of the Salmon Anglers Association are Christchurch, Otago and South Canterbury. There are about 800 members in total.

Most members would fish the Waitaki for possibly a week per year. Difficult to exactly state the number as some will fish the Waitaki for four weeks and others for a day. Fishers from the North Island come down for a week to fish the river. It is a very productive river – it is possible to catch all three fish species in one day. Neville has a preference to fish up the river and uses a jet boat to get access.

It is different fishing from any other river – it is a big wild water river; different technique and type of fishing; the average fish is a bigger size. The river always flows at a good rate. The river is stronger and has stronger pressure than other rivers. The upper range does not matter so much because the river stays clean because the dams act as a filter. If there is a big nor'wester in Canterbury many will go to the Waitaki because it is likely to be fishable.

Removing more than one-third of the river will destroy the fishery according to United States studies. Hakataramea River is no longer good for spawning because of water extraction, as the water flow is too low to allow access for fish to spawn.

In 1930, 1000 fish returned to the river. The run dropped from 100,000 to 10,000 when the Waitaki dam was built. Because the Hakataramea has been affected the run may now be down to about 5000. Fish used to spawn in the rivers above the dams that are not cut off.

The Waitaki River is the only river with a wild flow to it and is unique. It is the original river that salmon were released from.

Mark Webb (Fish & Game New Zealand)

Above the dams, information is not written in a formal way. NIWA's National Angler Survey is key information. Some values and some use information may be available from a lot of rivers.

The NIWA study is only looking at national anglers and there may be more overseas in the upper catchment.

Frank Greig (local fisher, Glenavy store owner, former fishing competition organiser)

Frank Greig has been fishing for 40 years. On the Waitaki he catches salmon and trout. Frank can go five minutes from home and catch a fish. Fishing is a popular activity in the area with 90% of locals participating.

Frank believes people go fishing to relax and be with their own company but it is also possible to meet a lot of people when fishing.

Frank noted that people from many nationalities fish the Waitaki River. German and Japanese – people find out about it through the internet. Many people find out through word of mouth and a lot of people who fish here are very 'into it'. From November to February there are a lot of internationals on the Waitaki river. There are three local guides with jet boats.

Frank stated that the river can rise very quickly and catch people – if the river is more stable it allows more consistent access. Constant flows also allow access for picnic areas and toilet areas. Access needs to be maintained by cutting and maintaining tracks.

Frank believes gorse and broom a lot worse in the last 20 years. Local community with Mayor are looking at developing tracks but will need a lot of money to make it work. Dairying feeds the gorse and broom but the local community is working to clean up. A lot more people would get out fishing if the weeds were gone.

Frank used to run fishing contest which had up to 800 contestants. There has been 380–400 in past years. Last year the fishing was not too bad but there still was no fishing competition. February to March is the peak time – some come every year and some only come when there are fish.

Frank believes 280–340 cumecs is good for fishing. Most are fishing for salmon at the mouth. Access is the biggest problem for fishing in the river.

Sid Campbell (Waimate Rodd and Gun Club)

There are 65 members in Waimate Rodd and Gun Club. Most are hunters and fishers. The river attracts people from out of the area – this is supported by NIWA surveys.

The increase in fishers is due to other rivers being unfishable; for example, Waiao and Kakanui. Without a good flood for the last four years, trout fishing has improved, and is especially good for rainbow trout. He believes rainbow now outnumber brown 60%–40%.

A lower water flow would lead to less fish because of less water to feed in. There were a lot of fishers out on opening day but because of the size of the river not many are seen. Taking out water would mean there would be fewer pools to fish and also fewer places to shoot (backwaters). When the water is higher there are pools everywhere. It is possible to get to a lot of good water on foot.

Sid is unsure how long the fishery could sustain a lower water flow.

Graeme Warren (fishing guide)

Graeme takes people all over the catchment: Waitaki, Maerewhenua, Hakataramea, Dobson, Greys, Ahuriri, Tekapo and so on. The nature of the work means that exactly where and when is not disclosed. Graeme decides on the day based on the client and the weather where he will go fishing. His aim is to go where he is likely to catch fish.

Overseas fisher experience

The guide allows people to get to good water in a short space of time (few other anglers). New Zealand is seen as good because the quality of fish are still good – 3 lb is average here but this is good to overseas fishers. Fishing is good value, especially when the dollar is low. Fishing is different to visitors' home country because there are not many other people around and they can fish their own stretch of water. Many overseas fishers are used to fishing with a lot other anglers. Places like the Tekapo are getting busy though. All places have been getting busier over the last 20 years from an increase in New Zealand and overseas fishers.

It is possible to get brown and rainbow trout when fishing in the catchment. Graeme does backcountry and a total experience; dry, nymph fly fishing and 'spotting fish'. Water is pure and clear, scenic value is high (mountains, spring creeks), and visitors get to meet local people. Some clients come back for 10 to 20 years or more visits. Sometimes they catch a lot of fish and sometimes only a few. It depends on the weather and the water conditions.

Most clients are European, English, Irish, Dutch, American – very few New Zealanders. Some guides will not guide New Zealanders or Australians for fear of them coming back to the same piece of water in following years.

He guides for 100–120 days of the year – some people are here for a week and some for just a day. He is a full time guide and it is difficult to estimate the number of other guides there are. The New Zealand Professional Fishing Guides Association tries to regulate the industry for consistency.

There is an increase in the numbers of users from out of town. It is unknown how many people from overseas are fishing in the area. There always seems to be a lot of overseas people, and in particular Australians, around Twizel, Hakataramea and Ahuriri. Many 'freedom anglers' would have been out numerous times previously and would have learnt the local fishing methods and do not use a guide. There is a perception that overseas guides are working in New Zealand but it is difficult to regulate as they may just be perceived as friends fishing together and payment is undisclosed. Guides come in from other districts and are not regulated to only one fishing region. People can come independently from overseas and already have a lot of information from their own association – information access is easy to obtain.

If water flow dropped permanently in the river (Waitaki) and opened up access the river fishing experience would be greatly diminished in a few years. Fishing would be very different. The river would become similar to the Ahuriri and the Tekapo and could result in size and quality of the fish being reduced, as there would be fewer places for fish refuge. There would be a reduction in the deeper wilder waters and the stiller backwaters.

Currently Graeme can catch fish regardless of the river flow. He believes a fisher is unlucky to catch a fish under two and a half pound. Fishers can catch fish over 5 lb and often 7 lb or 8 lb. Common fish are between 2 lb to 5 lb.

Alan Holmquist (Waitaki River Users Liaison Group)

The Waitaki River Users Liaison Group have four hundred member names on their database. One quarter of the members are fishers and so the rest of members are people who are simply interested in preserving the 'big river' experience.

This is a key issue for the Waitaki River and what a 'big river' is needs to be defined.

A survey completed by the liaison group revealed that 250–350 cumecs is the ideal river condition. Apart from 250–350 cumecs, it is difficult to define what a 'big river' is. The river can be dangerous because of its size and because it can change quickly but this is an attraction of the river.

All the activities that are possible on the river may make it the most popular river in New Zealand. The Waimakariri is the most popular but it is also very close to the large urban Christchurch population.

The attraction of the river is shown in the fact that Rangatata and Rakaia fishers come to fish the Waitaki but Waitaki fishers do not often go the other way because all fishing is provided on the Waitaki; it is possible to get brown and rainbow trout and salmon.

There is no conflict on the river at the moment because of the river's size. There could be 200 to 300 fishers on the river but they cannot see each other because of the river's size.

There are negative aspects of the river at the moment, most notably the gorse and broom. Part of this is because there are no longer any big floods to clean the river.

There is little conflict on the river because of its size. There may be 200–300 fishers on the river but you can see no one else because of the size of the river. Quiet fishers can fish alone and the fisher has the option of going to the mouth if they want a more social experience.

There are studies completed for the benefits of hydro-electric development and irrigation but studies have not been funded for recreation. There is the argument against retaining the river in its current state because the river is already modified but the fact is that the river is still a big river with 368–388 cumec average flow.

The difference between the Waitaki River Liaison Group and Fish and Game is that Fish and Game desires to maintain the fishery, whereas the Waitaki River Users Liaison Group aims to maintain the fishers' experience.

Some people prefer the canals but the Waitaki is a different experience.

The group was formed in 2001. Alan is unsure about the ideal river flow; believe a minimum flow is also likely to become a maximum flow. A flow of about 280 to 300 cumecs over the summer and around 250 over the winter may be okay but many factors have to be considered. In some way this crudely mimics nature and that is the next best thing to leaving it totally alone. The river needs a high flow now and then to clean it.

At the moment the river is a barrier and a challenge but if it is a lot smaller it will not be the same, especially if it is possible to drive across it. If the river flows slower the river will eventually get down to a single braid.

People cannot understand the big river experiences of the river until they are on it.

Bruce Parker (local fisher and founding president of the Waitaki River Users Liaison Group)

Bruce has been fishing on the river for 40 years. He believes there are knowledge gaps in the tourism and recreation use understanding of the river. There is no major Waitaki River study but they have been done for the Rakaia and the Rangatata.

Waitaki is the only river on the East Coast that is a 'big river'. The size of the river is what protects and regulates it. The value of the river comes from its size. Gorse and broom does not matter once someone is on the river. The size of the river stops 4WD use and so limits their impacts.

Tourism use is currently minimal on the river, but overseas fishermen are looking for the best water. The Waitaki River allows a natural experience. The size of the river braids makes the river valuable.

Variety of the river is the key issue. Water is different and changing every day.

Bruce believes to assess the value of the river one should look at the rivers of the east coast and the water quality over the last 25 years and Waitaki stands out on the graphs for water quality.

People come for the salmon, space and quality. The river could sustain far greater use but currently Bruce values the space available due to low use.

Fishing is not a competition, it is an experience, free time and time out.

A fisher could go out there and find six to eight people bridge to bridge or could go out there on Labour Weekend and find 250 people on the river.

Bruce does most of his fishing by dory boat.

Numbers of other people can affect fishers' experiences, a fisher walking the back may find two to three people too many. Fishermen want virgin water and so good water is water that no one has already used on that day. If a fisher goes where there is good road access they will see 'spooked fish'

Growth in the fishery would depend on the success rate. If more fishers mean fish cannot be caught then there would be an impact.

At the moment not everyone can get to all the river. Variability also protects the river.

Bruce takes 50% New Zealanders and 50% overseas people when guiding.

Whitebaiting: Kevin Pearce (DoC Oamaru)

There are no licences for whitebaiting. Most of the whitebaiting is done at the mouth of the river. The season is from 15 August to 30 November. Fishing is allowed between 5 am and 8 pm, and 6 am and 9 pm during New Zealand daylight saving.

The wide expanse of the river makes it difficult to whitebait further up. There is also whitebaiting in the irrigation channel on the south side of the river.

Most whitebaiting is done in the waves on the incoming tide. Depending on the whitebait 'run', there may be 50–60 whitebaiters out at one time. This may be down to six if the whitebait are not running.

Kevin believes high river flows upset whitebaiting. If there was a controlled river flow during spawning time it is predicted there would be better spawning as eggs get washed away with high river flows.

6.1.5 Jet boating summary

Topic	Jet boating summary
Information summary	The Waitaki River has been a special place for jet boating for the past 40 years. It is the home of the jet boat and many early trials were completed on the river. The conditions the river provides are different every time jet boaters visit. They appreciate the braided nature of the river and the high and low water flows. As water flows get higher the river becomes more of a challenge requiring greater skill. There are a number of events held on the river each year. International events are hosted on the river. Events provide greater safety for participants and enhance the social aspect of the experience. Only 40% of jet boaters are members of the jet boat association making assessing numbers of users on individual rivers difficult. Many fishers use jet boats to gain access to the river for fishing.

<table>
<tr><th>Topic</th><th>Jet boating summary</th></tr>
<tr><td>Quantitative data</td><td>Jet boat association membership:
<table>
<tr><th>Area</th><th>Full</th><th>Family</th></tr>
<tr><td>Canterbury</td><td>(639)</td><td>(85)</td></tr>
<tr><td>Otago</td><td>(132</td><td>20</td></tr>
<tr><td>Southland</td><td>185</td><td>10</td></tr>
<tr><td>Waitaki</td><td>116</td><td>16</td></tr>
<tr><td>Total</td><td>1072</td><td>131</td></tr>
</table>
Attempts have been made in the past to estimate jet boat user numbers but has not been possible.</td></tr>
<tr><td>Significance</td><td>The Waitaki River is a very significant river for jet boating. It is where the jet boat was invented and current users place special significance in it as a jet boating river.
Because of its history and current high appreciation and use for international events the river is considered internationally significant for jet boating</td></tr>
<tr><td>Future trends</td><td>Jet boating is likely to remain a popular recreation activity and the Waitaki a popular venue. Use associated with fishing is also likely to retain popularity.</td></tr>
<tr><td>Water flow level influence</td><td>Water flow levels affect jet boating experiences. Lowering water levels would reduce the ‘big river’ experience. It is also likely to reduce the number of braids in the river and reduce the quality of the experience. This is likely to lead to greater conflict between fishers and boaters.
Maintaining a constant flow on the river would make it more predictable which is considered to increase its appeal to novice boaters but decrease its appeal for experienced boaters.</td></tr>
<tr><td>Information sources</td><td>Katie Jameson (Jet Boat Association)
John Young (Jet Boat Association – former river officer)
David Wright (Jet Boat Association, Otago)
Boffa Miskell, Rob Greenaway & Associates. 2003a. Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment.
Bloxham L, Stark A. 1994. The Jet Boat: The making of a New Zealand legend (2nd ed). Reed Books, Auckland.
Sinclair Knight Mertz. 2004. Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River. Ministry of Economic Development.</td></tr>
<tr><td>Information explanation and assessment</td><td>Information comes from club member reports and descriptions contained in the Project Aqua study and from a history of New Zealand jet boating.</td></tr>
<tr><td>Information coverage</td><td>Jet boat enthusiasts have given brief descriptions of their participation in get boating. No comprehensive study of jet boat experiences have been completed.</td></tr>
<tr><td>GIS maps in companion report</td><td>Refer to pages 87, 88.</td></tr>
</table>

6.1.6 Jet boating information

Katie Jameson (Jet Boat Association)

Katie attempted to do a count of jet boat users two years ago but found it was too difficult to do. No satisfactory way of counting or estimating jet boat use was found. It is known though that there is multiple use of the river.

Only 40% of jet boaters are members of the Jet Boat Association, unlike fishers where a compulsory license means there is a user base to research on.

The Waitaki River is the home of jet boating. Apart from the Waimakariri the Waitaki would be the most popular river. There are world events on the Waitaki. It is known that the river is heavily boated and will be in the future. Minimal flow was 140 cumecs during the Project Aqua trial but there was not enough information at this level. The brief time of the trial did not provide enough information to complete a confident assessment. This was because the residual ground water would affect flow for some time after the water flow was reduced.

There are 2000 boaters in the membership not including families. Katie believes lower flows would cause added pressure on river use.

It was felt that quarter the usual flow would inevitably reduce the river to a single braid and the same number of users would cause significant pressure on recreational resources.

One way to assess the number of use would be to fly the river for a five-month period.

The river has played a vital role for jet boaters for the past 40 years.

John Young (Jet Boat Association – former river officer)

At 500 cumecs the river is different river to below 350 cumecs – every day there is a different experience on the river because of the flows. At 350 cumecs the river is still a big river. If the river is high, jet boaters will normally go with another boat for safety – engine failure is dangerous on the river. On occasions jet boaters have been known to lose their boat in a boat failure incident.

Rivers like the Waimakariri and the Rakaia have a lower mean flow so the rivers are not as big.

Above 150 cumecs on the Waitaki River jet boating is okay but that is not the end of the argument in considering low river flows. Somewhere between 350 and 150 cumecs there is a larger number of braids but it is not a clear cut issue. John believes that the Waitaki river is a different experience every time a jet boater visits some better and some worse.

David Wright (Jet Boat Association Otago)

David stated that the Otago Jet Boat Association use the river quite a lot for events and outings. Everyone likes the Waitaki – there are six or more events a year. It is a fun ride because of the number of channels. The Waitaki is not a one channel river.

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*.

The Waitaki River, between Kurow and the sea, is considered at times of higher flows to offer a rare 'big river' jet boating experience by providing an opportunity to boat a large, fast-flowing river over a considerable distance. Although the river is sometimes considered unsafe by some recreational jet boaters (particularly during periods of high flow), the Waitaki represents a challenge to experienced boaters who enjoy the river's length, braided nature and variable flow. The Waitaki is also a historical niche by having close association (in the upper reaches) with the invention of the Hamilton jet.

Jet boating on the Waitaki River occurs from above Kurow Bridge down to the sea, with formal boat launching ramps provided at Kurow Bridge, Duntroon, and on the south bank immediately downstream of the South Highway 1 Bridge. Other opportunities exist for boat launching in favourable conditions along the northern and southern river margins, including at Ferry Road, Priest Road, the Lower Waitaki irrigation intake (Bortons), Henstridges Road, and east of the Hakataramea confluence. Many jet boaters are also anglers and the two recreational activities are often combined ...

Generally, recreational jet boaters require about a metre of water to start safely, this depth decreases to approximately half a metre as the boast pick up speed and start to plane. Usage of the various launch sites depends heavily o the flow regime of the river and the depth of the braids at the entry/exit point. Given a river system that is frequently changing, many launch sites that are popular one week may not be launchable the next. In general, however, the most reliable boat launching sites are considered to be Kurow Bridge, Duntroon, Ferry Road and the State Highway1 Bridge.

The busiest months for jet boating the Waitaki are October to April. Each year, over this period, the New Zealand Jet Boating Association organises around six to eight events on the river, which cater for both recreational usage and national and international sporting events. Many of these events provide families and individuals who are new to the sport an opportunity to jet boat the river with the support of experienced boaters. Local members have indicated it is not uncommon for such family river trips to involve 90 to 100 boats. Other events cater solely for experienced jet boaters, such as the various international and national marathon events, which typically run between Kurow and the State Highway 1 Bridge, and require flows in excess of 300 cumecs. A jet sprint course, which requires occasional dredging, exists immediately downstream of the Kurow Bridge. (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 57–59)

Bloxham L, Stark A. 1994. *The Jet Boat: The making of a New Zealand legend* (2nd ed). Reed Books, Auckland.

Throughout his life Bill's [Hamilton] love of the back country took him camping, deerstalking and fishing. After the war he bought a second-hand power boat and he and Peggy spent many happy holidays exploring Lakes Wanaka, Hawea, Tekapo and Ohau. It was the aftermath of one such holiday in 1951 that caused Bill to remember his childhood dream. He was driving homewards along a track by the willow-lined Waitaki River when Peggy, captivated by the beauty of the area, suggested that they stop and camp for the night. Bill pondered the view for a long time before bluntly replying: "But there's nothing to do here."

His wife interpreted his remark as a refusal, but Bill was lost in thought, remembering his boyhood wish. At last he broke the silence: "Well, it would be fun if you had a boat that could go upstream," he mused. After a lapse of 40 years the dream had been rekindled. Now he had the opportunity and the expertise to fan the sparks of an idea into reality. He returned to Irishman Creek, eager to meet the challenge. (Bloxham, 1994, p. 9)

Even in the early days of jet boating Lake Ohau, Dobson and Hopkins River were popular with locals and Australian and New Zealand tourists. The Tekapo River was a challenge, even for insiders, and "it was not at all uncommon to go over to the Waitaki River and find them drifting five miles downstream in swimsuits and life jackets just for the joy and satisfaction of finding out what would happen if anyone went overboard"

Although Queenstown was attracting overseas tourists in ever-increasing numbers, the Waitaki Basin remained a holiday haven for South slanders, and even this species jealously guarded its independence, camping out beneath the stars and sailing its own boats. (Bloxham, 1994, pp. 50–2)

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development.

Sinclair Knight Mertz (2004) discuss jet boating and come to the conclusion that it is difficult to provide a quantitative dollar figure of jet boating on the Waitaki. This is because it is difficult to quantify the number of days jet boated on the river and there is no equivalent study of jet boating in New Zealand that could provide an indication of jet boating value (Sinclair Knight Mertz, 2004, p. 113).

6.1.7 Camping, power boating, sailing, boardsailing and swimming summary

Topic	Camping, power boating, sailing, boardsailing and swimming summary
Information summary	Camping facilities in the lower Waitaki Catchment are located around the hydro lakes, near Waitaki River downstream from Kurow and at Danseys Pass. While most campers at the lakes use the area for boating and windsurfing, the campground users near the river are more likely to take part in fishing activities. Camping is becoming more popular each year around the lakes. Users are mainly New Zealanders seeking a summer holiday experience unique to the area. Both sailing and boardsailing are popular activities at Lake Aviemore, where consistent offshore afternoon winds provide outstanding opportunities. National competitions in both sports have been held at this lake. These activities also occur at other hydro lakes. Most users camp at the lake where they participate in water sport activities. Power boating is a popular activity on all of the lakes. Swimming is one of the recreational activities on the lakes. Due to the water temperature smaller lakes close by the bigger hydro lakes and Waitaki River are preferred. The Waitaki River does not provide a lot of safe swimming holes and better swimming is found at Bell's Pond and in the Maerewhenua River.

<table>
<tr><th>Topic</th><th>Camping, power boating, sailing, boardsailing and swimming summary</th></tr>
<tr><td>Quantitative data</td><td>There are some campground figures available to give an estimate of the campground use and trends in the area.
Camping estimated in the Waitaki Lakes on the Waimate side of the river:
<table>
<tr><th>Year</th><th>Numbers of visitors*</th></tr>
<tr><td>2003/04</td><td>25,000</td></tr>
<tr><td>2002/03</td><td>22,000</td></tr>
</table>
Kurow Holiday Park 11,167 recorded overnight stays (December 2001).
Estimates state that up to 50,000 people could use the lakes camping over the summer.
Revenue from campgrounds at the Waitaki Lakes (administered by the Waitaki District Council):
<table>
<tr><th>Year</th><th>Camping fees in NZ$</th></tr>
<tr><td>2004</td><td>$80,200</td></tr>
<tr><td>2003</td><td>$68,600</td></tr>
<tr><td>2002</td><td>$69,400</td></tr>
<tr><td>2001</td><td>$65,400</td></tr>
</table>
It is difficult to state a number, but it is estimated that between 70 and 130 boats are launched on a busy day from Sailors Cutting.</td></tr>
<tr><td>Significance</td><td>The hydro lakes are an important summer holiday destination for New Zealanders. Camping and water sports are very popular amongst users. Lake Aviemore is a nationally significant lake for windsurfers and sailors.</td></tr>
<tr><td>Future trends</td><td>The increase in camping numbers leads to the conclusion that the hydro lakes are going to become more popular in the future. An increase in lake use has been reported by participants in a range of activities.</td></tr>
<tr><td>Water flow level influence</td><td>Water flow levels are a main influence for all water based activities listed in this section. Differences in water levels on the hydro lakes also influence the adjacent campgrounds. Swimming in the Waitaki River is dependent on the water management at the hydro dams.</td></tr>
<tr><td>Information sources</td><td>Boffa Miskell, Rob Greenaway & Associates. 2003a. Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment.
Sinclair Knight Mertz. 2004. Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River. Ministry of Economic Development.
Waitaki District Council – Lakes Camping 2000/01 Satisfaction Survey.
Carolyn Johns (Waimate District Council)
Shaun Perrin (Service Roading Manager – Waitaki District Council)
Bev McCaw (Waitaki Lakes Committee)
Struan Munro (Waitaki District Councillor)
Ron McDougal (Environment Canterbury – Enforcement at Sailors Cutting)
Bill Burgess (Timaru Yacht Club)
Tony Limburg (windsurfer)
Otematata brochure</td></tr>
</table>

Topic	Camping, power boating, sailing, boardsailing and swimming summary
Information explanation and assessment	Some basic numbers on use are available on camping. Estimated camping user numbers at the lakes are based on overnight ticket sales that do not include seasonal passes. Representatives of recreational user groups did give overviews and estimates on water sports (sailing, swimming and windsurfing) that reflect their personal perceptions.
Information coverage	Visitor satisfaction has not been researched in the lower catchment area. Camping numbers are not very detailed and reliable. All other estimates of user frequency are descriptive and based on interviews with recreation users and District Council representatives.
GIS maps in companion report	Refer to pages 81, 84, 85, 87 89, 92, 93.

6.1.8 Camping, power boating, sailing, boardsailing and swimming information

Camping

Campgrounds from various sources include:

Danseys Pass	Danseys Pass Holiday Park
Duntroon	Duntroon Domain Recreation Reserve
Glenavy	Gateways Caravan Park Glenavy Motor Camp
Kurow	Kurow Holiday Park
Lake Aviemore	Parsons Rocks Briar's Gully Te Akatarawa Waitangi Camping Reserve Wildlife Reserve Camping Fisherman's Bend Camping Reserve Loch Laird Camping
Lake Benmore	Falston Creek Haldon Arm Motor Camp Lake Benmore Holiday Park Sailors Cutting Ohau C Camping
Otematata	Otematata Holiday Park Otematata Boat Harbour Camping

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment.*

> *Although there are many formal lake and riverside camping grounds in inland areas of the Waitaki Valley, only four are sited along the lower reaches of the Waitaki River. The Kurow Holiday Park location on the south side of the river, immediately north of Kurow township is the most inland of these camping areas. Privately owned and operational through the year, the campground provides a range of tourist flats, cabins, powerpoints, tent sites and backpacker accommodation. There is also the usual array of toilet, cooking and laundry facilities. From January to December 2001 inclusive, there were 11,167 recoded overnight stays at the campground, and some residents reside at the campground on a permanent basis ...*
>
> *Inland from the river and further to the south of Duntroon is the Danseys Pass Camp Ground. Offering similar services as the Kurow Motor camp, the campground can accommodate around 200 visitors a night. In 2001 there were approximately 20,000 overnight stags at the Danseys pass Camp Ground.* (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 59-60)

Carolyn Johns (Waimate District Council)

Camping is the main council managed recreation/ tourism activity.

Prices for the Waitaki Lakes in 2004: $165 season or $10 per day.

Camping estimated in the Waitaki Lakes on the Waimate side of the river:

Year	Numbers of visitors*
2003/04	25,000
2002/03	22,000

* Figures are based on day ticket sales of three to four people per site. The average length of stay was five to six days based on ticket sales. Note that Season Ticket sales are not included in the above estimate so actual visitors are likely to be considerably higher. Day trippers are also not counted.

Camping facilities provide for boating, fishing and picnicking. The experience provided is a traditional New Zealand summer holiday camping experience.

Shaun Perrin (Waitaki District Council – Service Roading Manager)

Shaun commented that not many records are held about visitor numbers and experiences. Lakes camping is held over from development by ECNZ.

Fees are $200 per year, $5 per person or $10 per family per day. Management is contracted out to 'lake local authority trading enterprises'.

Some sites are for day trippers – most camps have boat launching. Most land is still vested with LINZ.

The community is looking to do more in the way of tracks.

Revenue from campgrounds at the Waitaki Lakes (administered by the Waitaki District Council):

Year	Camping fees in NZ$
2004	$80,200
2003	$68,600
2002	$69,400
2001	$65,400

Prices for the Waitaki Lakes in 2004 Waitaki District Council:

- season tickets: $200 per site for whole season for nominated dependant family only
- overnight tickets: $10 per family per night, $5 per person per night
- Duntroon camping run by community – $2 per night during the summer
- camping area opened this season: 17 September 2004 – 16 May 2005.

Waitaki District Council – *Lakes Camping 2000/2001 Satisfaction Survey*

People in each camp site:

- Falston: 57% of sites had three or more people in each camp site
- Ohau C: 88% of sites had three or more people in each camp site.

Length of stay:

- Falston: 95% staying six or more days
- Ohau C: 44% staying three to five days, 44% staying six or more days.

Eighty-six percent of respondents stayed with boats on the Falston campground, whereas only 56 percent took their boat to their holiday at Ohau C campground.

Bev McCaw (Waitaki Lakes Committee)

Bev McCaw works with people from three councils to advocate for campers. Bev is unsure of camping numbers.

Struan Munro (Waitaki District councillor)

Struan is unsure of the number of users on the lakes but stated there are a large number of day trippers and the busiest camping is at Christmas, Labour weekend and Easter.

Power boating

Ron McDougal (Environment Canterbury – Enforcement at Sailors Cutting)

Ron mainly works at Sailors Cutting. On average 70 boats are launched per day at the Cutting on busy days. There have been up to 130 boats launched on one day. How popular it is depends on the weather. It is difficult to estimate exact numbers.

Many people are not in the camping ground and come from Oamaru or Timaru. Sailors Cutting is popular because it is half way between Otamatata and Omarama. It is also popular because it is enclosed waters. There is access through to main lake via cutting. There are a lot of backwaters and people can water ski off the banks.

There is a ski lane and most go through the cutting.

Of 100 launchings, only two would be jet boats.

In Kurow there are a lot of jet boats launched.

Numbers are increasing. More boats are sold each year and more people are on the lakes for a longer period of the year.

Sailing

Bill Burgess (Timaru Yacht Club, Otematata crib owner)

Bill stated there are about 280 people in Timaru Yacht Club and there has been up to 360 in the past. Two members are involved in the America's Cup.

Timaru Yacht Club runs the Meridian Aviemore Classic which is the biggest trailer yacht regatta in New Zealand. In 2004 Labour weekend there were 3000 people involved; 77 yachts on the water. This year was the sixteenth running of the event. The regatta hosted up to 100 yachts some seasons. The regatta was first run to commemorate the 25th anniversary of filling the hydro lakes. Yachts come from the North Island and Invercargill to the regatta.

Bill estimates 50,000 people use the lakes camping over the summer. He believes there could be up to 3000 boats on the lakes on busy weekends.

Bill believes that Lake Aviemore is the best yachting lake in New Zealand because of the consistent afternoon offshore breeze.

He believes that the lakes are getting busier by about 5–10% each year.

The Lakes committee wants to retain total access to the lakes in the future.

Boardsailing

Tony Limburg (windsurfer)

Aviemore is the best place for boardsailing in the catchment.

Lake Aviemore is known as the best windsurfing in the lower South Island because of the afternoon sea breeze and its clean blue water. Many windsurfers take their annual holidays there and major events including the South Island cup and the 2000 Windsurf Nationals have been held there.

Lakes Waitaki, Benmore, Ohau and Ruataniwha are all used by windsurfers. Most people camp in the area that they windsurf.

Otematata brochure

> *Sailing, windsurfing, power boating, water skiing and canoeing are all enjoyed on these lakes. Boat mooring facilities and concrete launching ramps are provided at the Boat Harbour and Waitangi. Launching ramps and water ski lanes are provided in many of the camping and picnic areas around the lakes.*

Swimming

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment.*

> *Safe swimming holes are often limited on the Waitaki River ... Bathing occurs in quieter and more stable locations typically located along the river's edge and the quieter back braids. Known swimming areas include the Hakataramea Groyne area and near the Kurow Motor Camp, but in general swimming in the wider area is significantly more popular at destinations located around the inland lakes, and along the Hakataramea River and other Waitaki tributaries.* (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 61-62)

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development.

> *"While an important pastime to those who swim in the river, the nature of the river and the small number of swimmers is not believed to give rise to a significant extent of recreational value at a national scale."* (Sinclair Knight Mertz, 2004, p. 115)

Otamatata brochure

> *The lake water is cold in early summer but warms sufficiently to allow swimming for mid summer until early autumn. Loch Laird is a very popular swimming area close to Otamatata. Beaches adjacent to Te Akatarawa and Waitangi Reserve are also very popular.* (Otamatata brochure)

6.1.9 Shooting and hunting summary

Topic	Shooting and hunting summary
Information summary	The riverbed and riparian area of the Lower Waitaki provides good opportunities for hunting a variety of waterfowl. Easy public access is one of the reasons for its popularity. Shooting activity is dictated by the preferred habitat and migration patterns of each bird species within the valley. The terraces and hills surrounding the lower Waitaki River also provide additional hunting opportunities for rabbits, possums, quail and chukar. Other species popular with hunters are the brush wallaby populations found in the Hunter Hills north of the river and the pig and deer populations found on the lower river terraces of the valley.
Quantitative data	Central South Island Fish & Game New Zealand issues approximately 1700 to 1800 whole season gamebird hunting licences annually. Of these approximately 490 (28%), are issued in the Oamaru/Kurow/Waimate area. The Waitaki River and its associated wetlands account for approximately 31% of all gamebird hunting activity in the CSI region. Sinclair Knight Mertz (2004) report that the valuation of the recreation value from water fowl hunting is difficult, due to the lack of firm numbers of hunting trips to the Waitaki.
Significance	Fish & Game New Zealand considers the Waitaki River associated wetlands outstanding publicly accessible gamebird hunting and waterfowl habitats of at least regional importance (Webb, 2002, p. 25).
Future trends	Hunting is predicted to continue to be popular if current conditions prevail.
Water flow level influence	For game bird shooting the size of the river means there is a lot of backwater for birds to hide in. If the river is lowered this would be lost. This is likely to lead to worse hunting conditions and increased conflict between participants.

Topic	Shooting and hunting summary
Information sources	Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*. Mark Webb (Fish & Game New Zealand) Webb M. 2002. *Review Notes on Project Aqua Reports*. Central South Island Fish & Game New Zealand. Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development. Sid Campbell (Waimate Rodd and Gun Club) Frank Hamilton (Aorangi Recreation Hunters Club)
Information explanation and assessment	Information is mainly descriptive accounts from the Project Aqua Study, individuals and Fish & Game New Zealand.
Information coverage	Fish & Game New Zealand hold hunter interview information from over 800 interviews over 10 seasons. Since this has not been analysed in detail, a better understanding of hunting in the Waitaki Catchment could be obtained with further analysis of these hunter interviews.
GIS maps in companion report	Refer to pages 80, 97.

6.1.10 Shooting and hunting information

Boffa Miskell, Rob Greenaway & Associates. 2003a. *Project Aqua: Recreation Effects Assessment Report. Appendix N to Project Aqua Assessment of Effects on the Environment*.

The Waitaki Valley is an important shooting ground for a variety of game animals and birdlife. The riverbeds and ponds of the Waitaki Valley and their surrounding riparian areas provide habitat for the diversity of native game birds, including the grey duck, shoveler duck, paradise shelduck and pukeko, and introduced species such as the mallard duck, Canadian goose, feral goose, Californian quail, pheasant, chukar and to a lesser extent black swan ...

Each year recreational hunters visit the lower Waitaki River to make the most of the freshwater shooting ground and diverse birdlife. The river's popularity as a hunting destination is also secured by the ability of recreational hunters to access large parts of the river without requiring the permission of adjoining landowners ...

Shooting activity, although distributed along the entire length of the river from the Waitaki Dam to the sea is heavily dictated by the preferred habitat and migration patterns of each bird species within the valley. Although many hunters have a preference for one type of game bird, which dictates where they shoot, others prefer the type of hunting experience associated with a particular shooting environment. The Waimate Rod and Gun Club distinguish three distinct shooting grounds with the Waitaki River. These are the central backwaters and islands of the riverbed, the willowy riparian margins at the river's edge, and the distinct ponds and wetlands scattered up and down the river valley.

The terraces and hills surrounding the lower Waitaki River also provide additional hunting opportunities for rabbits, possums, quail and chukar. Other species popular with hunters are the brush wallaby populations that can be found in the Hunter Hills north of the river and the pig and deer populations that can be found on the lower river terraces of the valley. But this is a rarity due to the widespread settlement of people in the area. With the exception of chukar, quail and other game birds, there are no regulations specifying at what time of the year hunting can and cannot occur. The main hunting periods are, however, generally between March and September. (Boffa Miskell, Rob Greenaway & Associates, 2003a, pp. 60-61)

Mark Webb (Fish & Game New Zealand)

Fish & Game New Zealand hold hunter interview information from over 800 interviews over 10 seasons. This has not been analysed in detail for purposes specific to the assessment of the Waitaki Catchment but a small summary is in the Fish & Game New Zealand submission for Project Aqua. A better understanding of hunting in the Waitaki Catchment could be obtained with further analysis of the Fish & Game New Zealand hunter interviews.

Webb M. 2002. *Review Notes on Project Aqua reports*. Central South Island Fish & Game New Zealand.

Central South Island Fish and Game issues approximately 1700 to 1800 whole season gamebird hunting licences annually. Of these approximately 490 (28%) are issued in the Oamaru/Kurow/Waimate area. The Waitaki River and its associated wetlands account for approximately 31% of all gamebird hunting activity in the CSI region. Over 5 May to 29 July 2001 gamebird season hunters spent just under 9000 hours on the Waitaki and 16,400 waterfowl were harvested. Hunters have above average success compared with the remainder of the region and there are a higher proportion of non-local hunters using the river compared to the regional average.

Fish and Game consider the Waitaki River associated wetlands are outstanding publicly accessible gamebird hunting and waterfowl habitats of at least regional importance. (Webb, 2002, p. 25)

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development.

Sinclair Knight Mertz (2004, p. 114) report that the valuation of the recreation value from water fowl hunting is difficult, due to the lack of firm numbers of the number of hunting trips which take in the Waitaki.

Sid Campbell (Waimate Rodd and Gun Club)

There is always good shooting on the Waitaki river. For game bird shooting the size of the river means there is a lot of backwater for birds to hide in. If the river is lowered this would be lost. There may have been 250–300 using the river on opening weekend of the shooting season. Hunters can shoot in good and bad weather – Lakes like Lake Wainono which is only good when the weather is bad.

Frank Hamilton (Aorangi Recreation Hunters Club)

Aorangi Recreation Hunters Club has about 48–50 members. They mainly hunt small game – geese, ducks and wallabies. Twenty-five percent of hunting is in the Mackenzie Basin.

6.2 Off-water recreation activities

6.2.1 Walking, tramping, mountain biking, climbing and skiing summary

Topic	Walking, tramping, mountain biking, climbing and skiing summary
Information summary	These non-water based activities vary in significance in the lower catchment area. There are several tramps, walks and mountain bike trails described in brochures and books (e.g. Otematata; day walks of the Mackenzie Basin and Waitaki Valley – DoC). The climbing area near Duntroon is renowned in New Zealand and offers a variety of limestone climbs that have been used for international competitions. Awakino skifield is the only skifield in the lower catchment area and is a club skifield.
Quantitative data	There is no quantitative data available on these activities in the lower catchment.
Significance	As mentioned above, the climbing opportunities around Duntroon are of national significance according to several guide books. The Hakataramea round trip is a classic mountain bike (touring) ride and can therefore be described as regionally significant. The walking and tramping tracks in the Waitaki Valley are locally significant, but not on a regional or national scale. The ski field is locally significant, as it is used by clubs and provides the only skiing opportunity in the lower Waitaki Valley.
Future trends	The walking, tramping and mountain biking activities in the area are not likely to increase in the near future, due to the outstanding opportunities provided in the upper catchment area. Nevertheless, there is a potential to develop opportunities in the future Mountain biking around the lakes has the potential to become increasingly popular. The climbing opportunities are significant, and due to publications in popular guide books, are likely to attract more users in the future.
Water flow level influence	The water flow levels are unlikely to have a significant impact on these activities.
Information sources	DoC and local community brochures Kennett P. 1999. *Classic New Zealand Mountain Bike Rides*. Kennett Bros, Wellington. Mark Gurnett (Waimate Mountain Bike Club) Wethey T, Taw P. 1994. *Canterbury Rock*. New Zealand Alpine, Christchurch. Vostinar I, Wethey T. 2000. *South Island Rock*. Arthur Tschepp (Awakino ski field)
Information explanation and assessment	There is only descriptive information from brochures, guide books and interviews available at this stage.
Information coverage	Estimates on visitor numbers can not be made, as there is no quantitative research available. No surveys have been conducted that cover user satisfaction or preferences.
GIS maps in companion report	Refer to pages 68, 95, 96.

6.2.2 Walking, tramping, mountain biking, climbing and skiing information

Information taken from DoC and local community brochures on walking:

Location within Waitaki Catchment	Name of walk	Difficulty	Length
Waitaki Valley	Benmore Peninsula (Walkway)	Easy	2 hrs 6 km
	Deep Stream	Easy	1 hr 2 km
	Boat harbour walks (near Otamatata	Easy	1 hr
	Lake side tracks (near Otamatata)	Easy	1 hr
	Wildlife Reserve (near Otamatata	Easy	1 hr
	Kurow Hill	Steep	45 minutes
	Omarama Vineyard	Easy	45 minutes
	Awakino to Ski fields	Range	Half to several hours
	Kirkliston Range	Difficult	1 to 2 days

Mountain biking

Kennett P. 1999. *Classic New Zealand Mountain Bike Rides.* Kennett Bros, Wellington.

The Kennett brothers' guide to New Zealand mountain biking contains these excerpts about rides in the lower catchment.

> *Waimate Forest (Grade 3+, 3–5 hours, 42 km): This ride through Waimate forest is on sealed road and gravel road and provides good views from the top of the climb.* (Kennett, 1999, p. 248)
>
> *Pentland Traverse (Grade 2, 1 day, 60 km from Waihao Forks): West of Waimate this ride leads up to Pentland Hill and down to Waihao River, to return as a loop trip via Kaiwarua Station to Waihoa Forks.* (Kennett, 1999, pp. 248–9)
>
> *Hakataramea Valley (3–4 days, 200 km): This classic touring route starts at Burke Pass village and crosses Mackenzie and Hakataramea Pass, where you get great view of the Alps. From Kurow the ride follows Highway 83 to Benmore Dam, a gravel road across a saddle to Lake Benmore and up Stoney River to Burke Pass.* (Kennett, 1999, p. 255)

Otematata brochure

The tracks around the lake edges, the Wildlife Reserve and Boat Harbour are suitable for mountain biking. Cycling these tracks is a great way to enjoy the beauty of the Otamatata area. Experience a relaxing single or double track ride or a speedy cross country jaunt.

Mark Gurnett (Waimate Mountain bike club)

There are only a few riders in his club – two to three go for rides but there are more in the school holidays. Mark has organised an event in the past but it has been cancelled for the last few years because of the weather. In 2000 had 80 people, 2001 60 people and 2002 20 people; lower numbers were due to poor weather.

Climbing

Wethey T, Taw P. 1994. *Canterbury Rock*. New Zealand Alpine, Christchurch.

> *Fawlty Towers: It may have had more interest from hot European climbers than any other New Zealand crag. Nannette Rabout, Francois Lombard, Raphael Cabane, and Claudine Trachor all climbed there. The white marks from the competition are still visible. That they should think this is the best we can offer ... oh the shame. Mind you it inspired some things – interest in the area, and the Christchurch YMCA wall. There are three good lead routes at present. Check the top for the anchors.* (Wethey, 1994, p. 277)

> *Elephant Rocks: This I guess was the breeding ground for the bouldering competitions that have proved immensely popular to date. It was also the catalyst for a small number of people to see into the future! Doug Carson has, without doubt, been the man with the vision who has held the torch for climbing comps and bouldering circuits that today's generation of sportclimbers are enjoying the fruit of. Even though there aren't a lot of lead climbs here, with the Hulk Hogan Wall at Simpsons, provides the total body work out ... Around to the L is a shack of a toilet ... for your convenience. A great place for a social boulder: Elephant Rocks.* (Wethey, 1994, p. 279)

Vostinar I, Wethey T. 2000. *South Island Rock*.

> *Duntroon: In this limestone area south of the "Speights County Line", there's something for everyone. Extremely good bouldering is to be had at Elephant Rocks (slabs and faces) and at Island Cliff Valley (pumpy and powerful overhangs). It you aren't into leading yet, this is a good place to learn because falling typically involves a free-flight into open space. There's nobody much to disturb your peace, and the rock is simply sublime.* (Vostinar and Wethey, 2000, p. 372)

> *Summary: The Duntroon area has some of New Zealand's premier limestone bouldering. Close to Duntroon township is the boulder field of Elephant Rocks. Beside the road nearby Island Cliff Valley, there's the bizarre, overhanging Hulk Hogan Wall. Those who have never hung upside down before will find it a totally disorienting climbing experience. There's routes at Island Cliff Valley too, at Willow Wall, Sin City, Rhino Rocks and Fawlty Towers. These areas are closed during August and September for lambing.*

> *History: Doug Carson and Murray Judge scouted around here in the late 80s when looking for somewhere to hold New Zealand' first sportclimbing competition in the New Year 1988/89. They found Elephant Rocks and (manufactured) Fawlty Towers.* (Vostinar and Wethey, 2000, p. 373)

Skiing

Arthur Tschepp (Awakino ski field)

Arthur stated Awakino ski field was open seven weekends in 2004. There was an average of 20 people on the field each day. Awakino is very much a club field. It costs $20 per day to ski. Main tow is 800 metres long. Have a main tow, ridge tow and learner tow. Everyone up there is local. Accommodation sleeps 40 people. There are hot water showers, TV (3 channels).

Road clearing is the biggest challenge. Water comes from out of the stream from two outlets, most water is recycled. The club intends to stay as a club field.

6.3 Tourism activities

6.3.1 Tourism summary

<table>
<tr><th>Topic</th><th>Tourism summary</th></tr>
<tr><td>Information summary</td><td>
There are no reliable tourism data for tourist activity in the Waitaki Valley (in terms of employment, accommodation etc) but there are some data which relate to the Waitaki District generally (Tourism Waitaki). Currently the lower Waitaki is considered as a through route by Tourism Waitaki.

A number of people have made the comment that there is little understanding of the current visitors, the experiences they wish to enjoy and what they value in the area.

An alternative tourist route between Christchurch and Queenstown is aimed to increase use. This culture and heritage trail, promoted by councils, will be linked to Maori rock art in Timaru and will tell the stories of the culture and heritage of the Waitaki Valley including the Takiroa Maori Rock Drawings.

The local Waitaki community is very active in developing its own tourist ventures. Projects that are planned: Kurow to Duntroon Walkway; Kurow Island; Kurow and Waitaki Dam project.

These projects would complement the Vanished World Centre which is an exciting and successfully community development project which has a base in Duntroon but also moves visitors around the area.

Other tourism development may be linked to a viticulture industry which is popular in other regions of New Zealand.

There is a belief expressed by people in the community that there is growth occurring in the tourism industry at present and there is potential to enhance it through nature, culture and heritage tourism.
</td></tr>
<tr><td>Quantitative data</td><td>
292,000 bed nights in the Tourism Waitaki area in the last 12 months.

Transit New Zealand road count figures:
<table>
<tr><th>Description</th><th>Type</th><th>AADT*</th><th>Car</th><th>LCV</th><th>MCV</th><th>HCV1</th><th>HCV2</th><th>HMV%</th></tr>
<tr><td>Kurow west of SH 82 junction</td><td>Non-continuous</td><td>766</td><td>642</td><td>34</td><td>42</td><td>25</td><td>23</td><td>11.75</td></tr>
</table>
* Average annual daily totals

Oamaru I – site information centre
<table>
<tr><td>2002/03</td><td>70,000</td></tr>
<tr><td>January 2002</td><td>9,508</td></tr>
<tr><td>January 2003</td><td>11,102</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Topic</th><th>Tourism summary</th></tr>
<tr><td>Quantitative data (continued)</td><td>
Paid and complementary Vanished World centre visitors
<table>
<tr><th>2003–04</th><th></th></tr>
<tr><td>Adults – paid</td><td>783</td></tr>
<tr><td>Family – paid</td><td>791</td></tr>
<tr><td>Group – paid</td><td>343</td></tr>
<tr><td>Complementary</td><td>87</td></tr>
<tr><td>Educational</td><td>44</td></tr>
<tr><td>Total – paid, complementary, educational</td><td>2048</td></tr>
<tr><td>Total – information, sales, interest</td><td>3632</td></tr>
<tr><td>Total for year</td><td>5680</td></tr>
</table>
Kurow information centre visitor numbers
<table>
<tr><th>Year</th><th></th></tr>
<tr><td>June 2001/May 2002</td><td>5490</td></tr>
<tr><td>June 2002/May 2003</td><td>5561</td></tr>
<tr><td>June 2003/May 2004</td><td>5460</td></tr>
</table>
Danseys Pass Holiday Park bed nights
<table>
<tr><td>1998</td><td>1000</td></tr>
<tr><td>2004</td><td>6800</td></tr>
</table>
</td></tr>
<tr><td>Significance</td><td>The lower Waitaki is not currently a highly visited international tourist destination. Growth is reported though and the development of community initiatives and the alternative route between Christchurch and Queenstown is likely to increase its significance.

The lakes are a significant summer holiday destination for many predominantly local visitors.

The Waitaki River attracts a considerable number of visitors especially during the height of the salmon fishing season.</td></tr>
<tr><td>Future trends</td><td>The Vanished World initiative is an example of how future tourist development could occur in the lower Waitaki. It is a community driven project that is based on strong co-operative partnerships and community support. Other tourism initiatives based on the same principles are likely to be equally successful.

Tourism development based on significant industries such as viticulture have also been proposed. There is immense potential to develop a tourism industry that plays to the existing strengths of the area, including nature based experiences and local culture and heritage. There are many interesting stories and nature-based recreation experiences to be had in the lower catchment including the social history of the dams, the experiences to be had on the river, and physical activities such as walking, biking and climbing.

Summer holiday experiences for New Zealanders camping and enjoying the lakes is already a considerable tourist market and is likely to be sustained.</td></tr>
</table>

Topic	Tourism summary
Water flow level influence	On-water tourism activities such as fishing and jet boating would be affected by changing water levels in the same way as they would be for recreational users. The extent would depend on the level of change. Off-water activities are likely to be affected if tourists negatively perceive the environmental change. Tourists appreciate the landscape they enjoy recreation activities within and if landscape changes then appreciation of experiences is also likely to change.
Information sources	Susan Houston (Tourism Waitaki) Julie Familton (Tourism Waitaki) Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development. Malcolm Anderson and Aoraki Development Trust Mike Grey ('Way Forward' committee) www.trcnz.govt.nz Oamaru I – Site Information Centre Kurow Information Centre visitor numbers Transit New Zealand road use figures Roger Blackburn (Vanished World) Neil Thorpe (Danseys Pass Holiday Park) Kurow trail and the Ocean to Alps trail brochures Densem G. 2004. *Waitaki Landscape Study*. Waitaki District Council.
Information explanation and assessment	Information is based on descriptions provided by local tourism managers and developers. Comment has also been gained from members of the community interested in developing tourism opportunities. The information is considered to give a basic description of current tourism activities and initiatives.
Information coverage	The information presented comes predominantly from the tourism provider's perspective. There is a limited understanding of current or potential tourists preferences, values and expectations and these have not been presented.
GIS maps in companion report	Refer to pages 68, 70, 94 and other specific activity maps.

6.3.2 Tourism information

Susan Houston (Tourism Waitaki)

Tourism Waitaki has visitor surveys from 2001 (discussed below) and they are mainly domestic tourists. Tourism Waitaki uses the brand 'naturally better'.

Waitaki is not considered an international destination. There were 292,000 bed nights in the last 12 months. Tourism Waitaki is currently planning with Kingsgate Hotel to develop Oamaru as a focal point for trips (Dunedin, Mt Cook etc). They are trying to make the most of the upper Waitaki – salmon and Ohau skiing. This initiative is part of a $1 million push. Looking at eco-tourism centre and making the most of fossil world at Duntroon and heritage of the surrounding area. Also focusing on the dams as an attraction.

Two markets are international/Australian and domestic – regional. The international market does not know about the river and does not stop on it. The value of the river is for locals and not internationals. Tourism Waitaki see future in development and this will affect local recreation but won't affect international tourist market.

Tourism Waitaki do not have a lot of information about visitors' experiences. It is believed there are not many visiting at the moment. Do not know what will be altered about the visitor's experience if water allocation changes. Belief that there is nothing in the river that cannot be found somewhere else.

Susan sees fishing as a local activity and does not see that tourism is a large deciding factor – river is a through route at the moment.

Julie Familton (Tourism Waitaki)

About 10 operators at Tourism Waitaki Operator networking meeting made comments about tourism visitors and use of the river. Many said they help plan their visitors' itinerary. The comment was made that many are interested in nature tours and move from Kaikoura to penguins to Taiaroa Heads albatross.

Sinclair Knight Mertz. 2004. *Draft National Cost Benefit Analysis of Proposals to Take Water from the Waitaki River*. Ministry of Economic Development.

> *"The major objective of the national cost benefit analysis is to identify the 'economic value-added' to the national economy generated by alternative applications of the water resource."* (Sinclair Knight Mertz, 2004, p. 1)

The Sinclair Knight Mertz (SKM) report discusses the impact of increased irrigation on tourism. It notes that there are generic impacts to farming operations which have the potential to impact recreation. These are predicted to have a greater impact on recreation than the water extraction itself. The high value placed on water-based recreation in the catchment highlights the need for careful mitigation (Sinclair Knight Mertz, 2004, p. 124).

> *"If chemical and effluent runoff and seep to waterways from intensively farmed land can be managed, then there are unlikely to be any significant effects on the main recreation activities within the Waitaki Catchment."* (Sinclair Knight Mertz, 2004, p. 125)

The Sinclair Knight Mertz (SKM) report does not place any value in the current Mackenzie country dry landscape which would be changed by irrigation. The report simply debates if green pastures would be a more attractive landscape for visitors (Sinclair Knight Mertz, 2004, p. 125). The contribution of the Mackenzie barren landscape to the visitor experience cannot be known without asking visitors. The effect of increased irrigation on future recreation use in general cannot be fully understood without further research.

The SKM report discusses the value irrigation may add to tourism. Viticulture and a wine industry is the main option discussed. While a wine industry and its value are discussed in general terms the report states that an assessment cannot be made on the current data (Sinclair Knight Mertz, 2004, pp. 125–126).

The SKM report also discusses the effects of the hydro-electricity development relative to the Project Aqua proposal. The specifics of the project will not be repeated here. These were considered the negative impacts of the development: it would limit the use of the river by high skilled jet boaters; reduce the big river angling experience and increase the overall level of dust entrainment from the riverbed; decrease wetland habitat and bird species; increase conflict between recreation users. These were considered the positive aspects of the project: it would increase the accessibility to the river for less experienced anglers who don not appreciate the big river experience; increase the safety of the river for some activities (swimming) (Sinclair Knight Mertz, 2004, p. 131).

The SKM report also discusses existence values and states: "As noted above, it is recommended that a study of these existence values be undertaken in order that the full picture of impacts can be made" (Sinclair Knight Mertz, 2004, p. 132).

Malcolm Anderson and Aoraki Development Trust

Alternative touring route

The Aoraki Development Trust and Malcolm are involved with four councils – Mackenzie, Timaru, Waitake, and Waimate – in developing a touring route connecting places beyond Omarama and linking with the Maori rock art story in Timaru. The route would focus on telling the culture and heritage stories of the area. The route is likely to take in Timaru > Oamaru > Kurow > Omarama > Twizel >Fairlie > Wanaka/Queenstown.

Malcolm made the comment that there is need for more research into current visitors' experiences. All that is known presently is the basic information from Transit State Highway 82 and 83 road counts. There is little known about visitors' experiences. In particular, there is little known about what things visitors find interesting, what people are currently doing and the potential in terms of culture and heritage tourism in the future.

Mike Gray (Chairman, 'Way Forward' committee)

The 'Way Forward' committee was formed in March 2004 with an open meeting in Kurow. The group is developing a number of community initiatives. The group's purpose is to facilitate economic and social development in the rural communities of the Upper Waitaki Valley.

The vision for the valley in 20 years is: weed free, better access to the river, better recreation, better tourism, vibrant towns. The Way Forward committee is developing a strategic plan. Their desire is to get a co-ordinator for all projects. They are developing a project action plan for each project and intend to achieve goals in stages. The 12-month goal is to have a coordinator in place to help develop the following projects.

Kurow to Duntroon walkway

The committee is planning to put a walkway along the old Ministry of Works road from Kurow to Duntroon – it gave access in the past and the desire is to return it. It would open up access for walkers, anglers and cyclists. It would be developed in stages.

Kurow Island

At Kurow the committee is looking to open up access to the island with Waitaki District Council, Meridian, Canterbury Regional Council and DoC. Looking to clean up the site and stage opening up the island to enable picnicking and access for anglers.

Kurow and Waitaki Dam project

There has been a desire for a while to open up the Waitaki Dam as an historic dam as it was the last dam built with pick and shovel. Not having a spill way and the water going over the top of the dam is another feature. The community would drive the project. A problem at the moment is the narrowness of the road for buses but this can be overcome. The Benmore Dam story is more about the physics and engineering of building dams and this would be more about the social history of things such as the beginning of social welfare in New Zealand. The concept was previously explored with Meridian Energy but this process has currently lapsed.

Duntroon

At Duntroon there is an aim to develop a wetland. There was a wetland in the Project Aqua proposal and there is a hope within the community that this can still be achieved in the future.

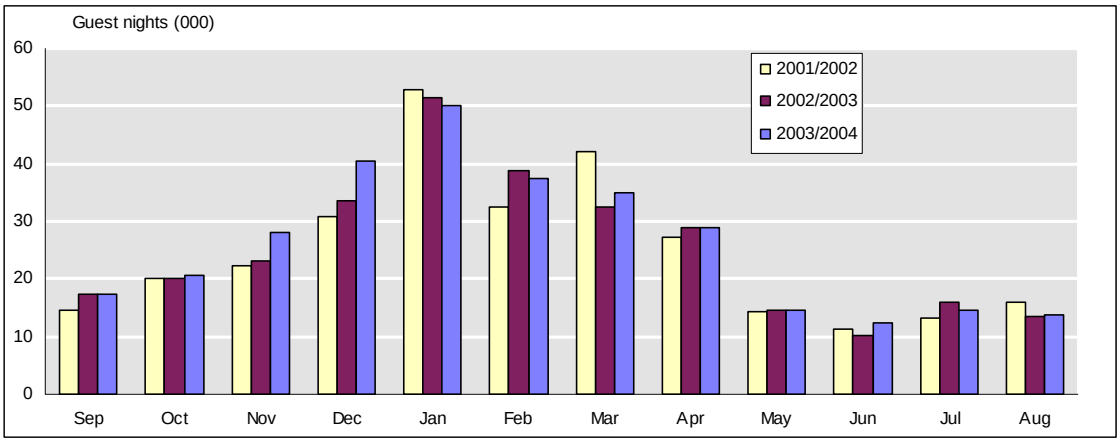
The Vanished World and Fossil Centre is another feature of Duntroon.

Alternative highway route

In general there is the aim to have the alternative route concept down State Highway 83 as a tourist route. The committee is looking for a branding 'go Waitaki valley'. Is currently a popular route for campervans. Themes in each town: Otematata 'that dam town' – history of workers and the village; Duntroon a Scottish theme – currently a blacksmith store and historic gaol. Attempt to increase the route's features and make it more interesting. River was initially the highway then the road and then rail and the aim is to make the most of this history.

Historically one of the features along the road is the Maori rock art.

Tourism Waitaki total guest nights (September 2001 to August 2004)



Source: Commercial Accommodation Monitor. Guest nights for year ending August 2004 (retrieved 5 November 2004 from www.trcnz.govt.nz)

The growth in tourism (as measured by overnight guest nights) within the Waitaki region has not kept pace with the Queenstown/Lakes – Central Otago.

The Tourism Research Council has not completed a 10-year forecast study for the Waitaki Regional Tourism Organisation so it is not possible to base predictions on this source as it is in the upper catchment.

Oamaru I – Site information centre

Visitor numbers to the information centre in Oamaru have more than doubled since 1998. The statistics show that more than 70,000 visitors entered the information centre in the 2002–2003 year. The counts for January show that visits increased considerably within that month from 9508 in 2002 to 11,102 in 2003.

Kurow information centre visitor numbers

Year	
June 2001/May 2002	5490
June 2002/May 2003	5561
June 2003/May 2004	5460

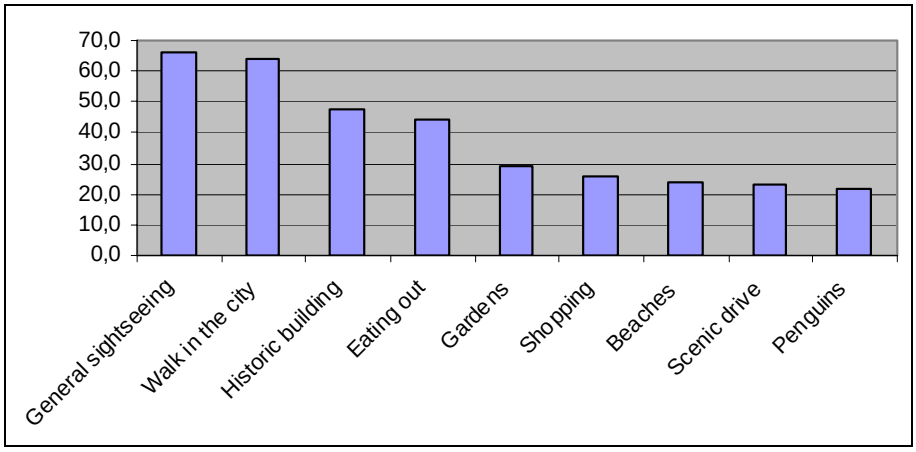
Visitors are recorded by manually counting visitors who enter the centre.

Paid and complementary Vanished World centre visitors

2003–04	
Adults – paid	783
Family – paid	791
Group – paid	343
Complementary	87
Educational	44
Total – paid, complementary, educational	**2048**
Total – information, sales, interest	**3632**
Total for year	**5680**

Most popular activities	
General sightseeing	66.2%
Walk in the city	63.9%
Historic building	47.7%
Eating out	44.0%
Gardens	29.2%
Shopping	25.5%
Beaches	23.6%
Scenic drive	23.1%
Penguins	21.8%

Most popular activities



> *"NB: The penguin colonies and the historic precinct were not offered as an option in this survey. In the author's opinion, if they were they would have been among the top four or five activities."* (Oamaru I – Site information centre report)

More than 40% of all visitors have been to Christchurch before their visit and another 24% continue to Christchurch after their visit. Dunedin (17%), Mt Cook (16%) and Queenstown (12%) are other popular destinations with visitors entering the visitor centre in Oamaru (Oamaru I – site information centre report).

> *"The huge popularity of Canterbury with visitors before they reach the Waitaki probably reflects its status as the South Island's main tourist hub."* (Oamaru I – site information centre report)

The most popular means of transport to Waitaki were: car – rental 45.6%; car – private 24.2%; campervan 17.7%; bus or coach 7.9%. Note that visitors on coach tours are less likely to complete this type of survey so may not reflect the actual transport form proportions (Oamaru I – site information centre report).

Transit New Zealand road use figures

Transit New Zealand road counts for Waitaki Valley roads are contained in the table below.

Description	Type	AADT	Car	LCV	MCV	HCV1	HCV2	HMV%
Kurow west of SH 82 junction	Non-continuous	766	642	34	42	25	23	11.75
Omarama past township	Non-continuous	1368	617	351	268	63	69	29.24
Duntroon west of township	Non-continuous	732	631	27	49	11	14	10.11

Notes: AADT = average annual daily totals; LCV = light commercial vehicle; MCV = medium commercial vehicle; HCV1 = heavy commercial vehicle 1; HCV2 = heavy commercial vehicle 2; HMV% = percentage of heavy vehicle.

Source: Average annual daily totals road count sums 2003, Canterbury and Otago regions.

Roger Blackburn (Vanished World)

Vanished World is in its third year of operation as a trail and second year as a visitor centre. The trail was set up by people in the local community, community employment group and Otago University.

The Visitor Centre is at Duntroon and the trail starts at Waimakarua and runs down the coast to Oamaru before going inland to Duntroon. The trail covers a particular period in history from about 23–34 million years ago – the eocene period. The sites visited are where some significant fossils have been recovered.

The Vanished World trail is a heritage trail with interpretation boards in different areas that describe the different geology and shapes they are seeing. The trail takes in the sites near Duntroon: Elephant Rocks; Anatini and Earthquakes.

The period covered is significant for changes occurring to penguins, a range of dolphins that are now extinct, and changes occurring to whales. A main reason participants follow the route is that during the period of time covered the land visited was under the sea and so people have to imagine they are under the sea.

The Vanished World Centre and the trail work together. The centre gives the highest level of interpretation. The centre concentrates on local and national geology and things that relate the period of time covered. Products are sold with the centre's logo on and no doubt the trail and centre will grow in popularity.

Centre developers are working on a relationship with the Oamaru Blue Penguin Colony who promote the blue and yellow eyed penguins and so the fossil penguins have been linked as part of a package.

The Vanished World Centre and trail are trying to market to 'geotourists' – a niche market. There are similar centres in the United States, Canada and England. The market they are attempting to tap into is based on the belief that the older population is trying to learn more about history.

Through the Vanished World project the area is telling its own unique story and connects with heritage stories based around limestone. The other major geological feature in the area is the Moeraki Boulders which is an old tourist attraction and so forms a nice link with the trail.

Neil Thorpe (Danseys Pass Holiday Park)

Danseys Pass Holiday Park is experiencing considerable growth. This is believed to be a result of more people choosing to travel through the Waitaki Valley. This growth has been noticeable in the last three years.

In 1998, 1000 bed nights recorded at the park. In 2004 Danseys Pass Holiday Park experienced 2000 visitors with an average stay of 3.4 nights which equates to 6800 bed nights. In 2001, there was believed to be 50,000 vehicles using Danseys Pass.

The growth is due to the increased appreciation of the Central Otago area, including places like Naseby for activities such as mountain biking. Visitors using Danseys Pass Holiday Park are interested in experiencing activities such as gold panning, walking, trekking, mountain biking, horse riding, forest and bird and back to basics 'kiwi camping' and are not sedentary holiday makers who just want to relax.

Danseys Pass Holiday Park also has many visits from school and field trips.

Other operators (activities) in Waitaki District

Operator Waitaki	Location
Fishing Guide	Kurow
Kurow Golf Club	Kurow
Kurow Heritage Centre -Pioneer Museum & Art	Kurow
Kurow Information Centre	Kurow
Dunstan Tours	Omarama
Fly Fishing Fundamentals	Omarama
Omarama Information Centre	Omarama
Max's Fishing Tours	Omarama
Omarama Golf Club	Omarama
Omarama Trout Fishing Services	Omarama
Southern Soaring	Omarama
Totara Peak Gallery	Omarama
Omarama Four Season Tours	Omarama
Meridian Energy Benmore Centre	Otematata
Otematata Golf Club	Otematata

Activities listed in local brochures

There are various trails outlined in different brochures which guide people through the Waitaki Valley taking in places of interest. These include the Kurow trail and the Ocean to Alps trail.

The Waitaki Valley Brochure describes the valley: "The valley is a popular spot for people who like fishing, and for boating enthusiasts. The area is a 'sportsman's paradise with the fabulous lakes on the Waitaki River. Visitors flock form through New Zealand and overseas to enjoy outdoor pursuits and tranquillity."

Gold panning	Pans available at Danseys Pass
Swimming	Maerewhenua River
Golf	Tokarahi Golf Course, Kurow, Otamatata and Omarama
Bowling clubs	Kurow and Otamatata
Horse trekking	Craigneuk Horse trekking, Duntroon
Tokarahi homestead	Guided tours of restored homestead
Places of interest	Nicol's Blacksmith, St Martin's Church, Rattling Rocks, Duntroon Gaol, Robert Campbell Park and house view from the road, Maori Rock Art, Valley ceramics, Parsons Rock, Doctor's House (Kurow)

Earthquakes	Is the result of slumping, caused by the erosion of softer sediments underlying the limestone.
Hydro dams are described as places of interest	*Benmore* – One of the largest each dams in the southern hemisphere, is built between two natural rock outcrops... Guided tours through the powerhouse take place during the summer months... Visit the Benmore Centre for more information about the Benmore, Aviemore and Waitaki dams. *Aviemore* – Aviemore structures can be viewed from the road across the top of the dam and the lookout on the Canterbury side. *Waitaki* – Construction of this dam, built with picks and shovels, began in 1928 and was completed in 1934. Information about Waitaki can be found on the viewing platform adjacent to the old village and overlooking the powerhouse.
Takiroa Maori Rock Drawings	The Maori Rock Drawings are situated under a large limestone bluff on a bend in the main road. The drawings are executed in charcoal and red ochre of various time between the moa-hunter period and European contact.
Vanished World Centre and trail	The Vanished World Heritage trail reveals the ancient history of North Otago – fossil sites, extinct volcanoes, mineral localities, and major landforms. The trail may be self-guided or may be taken as part of a commercial tour.

Fishing guiding

Fishing is an activity undertaken by visiting overseas tourists. It is difficult to accurately quantify the number of fisher days because the National Angler Survey does not currently include them in its survey sample. This is the overview given from the National Angler Survey:

> *Country of origin data were available for 8 127 overseas licence holders, representing a total of 82 nationalities. Numerically, the most common regions/countries of origin were Oceania (primarily Australia) and North America (primarily the US), followed by the British Isles, Southeast Asia (primarily Japan, Singapore, South Korea, and Hong Kong), and Europe (Table 6). Most overseas visitors (82% of the total) purchased a short-season licence, particularly those from Southeast Asia and Oceania. By contrast, European anglers (over half of whom came from just four of the 23 European countries represented: Germany, Denmark, Switzerland, and the Netherlands) were much more likely to invest in a whole-season licence.* (p. 26)

Landscape

Densem G. 2004. *Waitaki Landscape Study*. Waitaki District Council.

Landscape and scenery is important to visitors to New Zealand. "Visitor interest in a particular activity is driven by a number of different features of that activity ... the location the activity is set in – one of the main reasons visitors choose to come to New Zealand is because of the scenery. For this reason the area an activity is in can have a big influence on the decision to do an activity" (AC Nielsen, 2002, pp. 6–7).

The effect landscape and scenery has on visitors' experiences in the lower Waitaki Catchment is not known. Specific research is needed to be able to assess the importance it plays in visitors' experiences at the moment and how changing landscape appearance through water use could impact experiences.

The following excerpts are from a recent landscape study of the catchment by Graham Densem.

Benmore land unit

Values:

A second major value is the 'Benmore hydro' landscape which is nationally regarded both as New Zealand's premier engineering project of the 1960s and 1970s and for the considerable landscape features that have resulted. Significant features within this land unit are the Benmore Dam, and Lakes Benmore and Ruataniwha. While Lake Benmore undeniably obliterated an outstanding reach of the Waitaki River, it in itself constitutes an impressive landscape feature. Its values result from:

- *the human-dwarfing scale of Benmore Dam itself and the sensed 'tension' of the massive head of water it holds back;*
- *the 'power-house of New Zealand' identity;*
- *the graphic shapes created by the horizontal water surface and its interlacing with the complex natural hillsides along its shoreline;*
- *the sense of contrast between the smooth horizontal lake surface and the steep, rugged, complex land forms;*
- *the unique vivid turquoise water colour (under bright light conditions) and its contrast with the calm dun-coloured landforms.* (Densem, 2004, p. 43)

Lower Waitaki Valley

Values:

- *The Waitaki River, referring to its bed and flood plain, is in a significantly modified state, particularly through its controlled flood regimes. The bed continues to display characteristic braided forms, but in reduced range and width from its pre-hydro dam days before the 1930s. Islands and margins of the river are invaded by weeds such as broom and willow. However, although modified, the Waitaki River retains a moderate sense of its former grandeur, derived from its size and surviving natural patterns. To this landscape value should be added the takata whenua cultural values mentioned above. An additional value of the Waitaki River is the central defining identity and pride which it engenders in the present day North Otago community. The remaining natural values of the Waitaki River, combined with both the Maori traditional cultural value and the modern day North Otago identity value comprise a landscape of significant value. Were the Waitaki River still in an unaltered state it would be likely to constitute an outstanding landscape*. (Densem, 2004, p. 43)

7 Recreation Preferences, Conflicts and Satisfaction

Recreation research based on recent user surveys within the Waitaki Catchment is limited. The only information available (apart from the surveys completed by Project Aqua) is descriptive and not based on actual research in the field of recreation preferences, conflicts or satisfaction.

With the current growth in participation in outdoor recreation, it is important for resource managers to learn about the needs and trip motives of recreational users, and to act accordingly to optimise the quality of their experiences. This understanding is currently lacking in the Waitaki Catchment. Examples of information from overseas and general research from New Zealand may help increase understanding of recreation experiences and help to address this knowledge void.

> *"As participation in outdoor recreation activities has increased dramatically over the past few decades in the US, researchers have attempted to study the underlying motivations for participation."* (Thapa et al, 2004, p. 208).

As international research projects in the field of water-based recreation show, user values and activity preferences differ considerably between various user groups.

It is widely acknowledged that motives differ among recreationists and are largely dependent on their goals (Mannell and Kleiber, 1997) and their respective activity. Amongst many other recreationists, river users are some of the participants who have been examined in the United States literature (e.g. Graefe et al, 1981, Knopf and Lime, 1984, Schuett, 1994, 1995). "Based on river users, peace and calm, and viewing scenery were noted as key motives" (Knopf and Lime, 1984, in Thapa et al, 2004, p. 208).

Thapa et al noted that "overall, based on empirical research, there has been some consistency in findings as recreationists have noted the following but not limited to these motivations/domains such as, exploration, escape, general natural experience, introspection, exercise, to be with similar people, to seek exhilaration, and to escape physical stressors. In addition, empirical research has consistently demonstrated that motivations differ based on participation in various activities, as well as due to the significant effect of other non-motivational variables" (Thapa et al, 2004, p. 209).

The findings of the study that Thapa and his colleagues have undertaken at Gallatin River near Yellowstone National Park (United States) highlight that anglers were more likely to participate for solitude. Such findings were expected as anglers generally prefer isolation and are susceptible to conflict situations due to presence or behaviour of other activities.

Among the kayakers local residents were more likely to participate as it offers a challenge, keeps them in shape, and to do things with other people.

The study also found that rafting on rivers along gateway communities is very popular among tourists as local residents work as guides. It was found that rafters were more likely to participate to see wildlife, and to tell others about it at home.

> *"Regardless of activity, repeat visitors were more likely than first time visitors to mention solitude and relaxation as their key motives to visit the river. As expected, repeat visitors were largely local residents who recreated for solitude."* (Thapa et al, 2004, p. 209).

The study described above "sought to examine trip motivations and the effect of select non-motivational variables among water-based recreationists. The findings derived from this study was largely expected and confirmed".

Thapa states at the end of his study: "Understanding what people seek through recreation can provide useful guidance to a variety of planning and management tasks, such as measuring supply and demand for recreation, developing management objectives, and preventing and managing conflicts between users as well as local residents and tourists" (Thapa et al, 2004, p. 212).

In New Zealand, the "Beneficial Outcomes Approach" (BOA) has been investigated by researchers from Lincoln University and it is being assessed by the Department of Conservation as a tool.

> *"The BOA is a management planning process which was developed for natural resource management government agencies in the United States and has now been applied in other countries. Its purpose is to optimise the net benefits of actions undertaken by public agencies and to help make those agencies more accountable and responsive to the consumers they serve."* (Booth et al, 2002, p. 9)

> *"In summary, during the past three decades, considerable progress has been made in advancing the state of knowledge about leisure. These advances in knowledge have been accompanied by similar improvements in the state of management practice. There is now considerable objective documentation of the wide scope and magnitude of the many benefits of leisure, and most of those reports present the results by categories of benefit such as psychological, physiological, sociological, economic, and environmental. As such, there is adequate scientific support for implementation of the BOA, and research on benefits continues to grow and broaden."* (Booth et al, 2002, p. 14).

8 New Zealand Tourism Preferences and Product Assessment

There is little research on specific tourism products available for tourists in the Waitaki Catchment. The *New Zealand Product: Potential and actual visitor feedback form key markets* (2002) is discussed in order to fill this gap by showing how particular Waitaki Catchment activities are likely to be perceived by presenting how these activities are generally perceived in New Zealand.

AC Nielsen. 2002. *New Zealand Product: Potential and Actual Visitor Feedback from Key Markets*. Tourism New Zealand.

> *"The activities visitors are most likely to include in their itinerary are ones that involve ways of experiencing the icons (i.e. 'the emotive hooks') that make New Zealand unique. For instance, activities which involve New Zealand scenic beauty and natural wonders ..."* (AC Nielsen, 2002, p. 4).

This report states there are three distinct groups that visit New Zealand:

- *Active doers* – this group want to experience what New Zealand has to offer in a physically active way;
- *Variety seekers* – these visitors want to sample a bit of everything New Zealand has to offer and;
- *Scenic explorers* – While this group will do a variety of activities during their stay in New Zealand, they are mainly interested in exploring New Zealand's natural wonders (AC Nielsen, 2002, pp. 4–5).

The Waitaki Catchment has the potential to provide tourism products to all of these groups.

The aim of this research was to "understand demand for experiences among the actual and potential consumers that comprise Tourism New Zealand's target market (interactive travellers)" (AC Nielsen, 2002, p. 11). There is a similar need to develop better understanding of tourist experiences in the Waitaki Catchment. The information that comes from this study shows that visitors want to engage in activities that are potentially available in the Waitaki Catchment.

The following is a selection of activities that have been reviewed nationally and have the potential to be offered in the Waitaki Catchment in the future.

AC Nielsen, 2002

Jet boating

Overall satisfaction: 48% rating it superb (top third of all activities):

- Strengths:
  - having a level of thrill that was appropriate for the visitors participating in the jet boating experience
  - the jet boat was in an area of spectacular scenery
  - the boats and equipment being up to date
  - friendly operators who were passionate about the activity and surrounding environment (AC Nielsen, 2002, p. 62).

Tramping/hiking

Overall satisfaction: 66% rating it as superb (top third of all activities):

- Strengths:
  - spectacular scenery, which was very important to the activity and which participants were very satisfied with
  - the right level of exertion
  - activity operators that were passionate, friendly and real 'New Zealanders'
  - value for money
  - the opportunity for learn. DoC were noted in the qualitative research as being helpful and informative (AC Nielsen, 2002, p. 73).

Sailing

Overall satisfaction: 51% rating it as superb (top third of all activities):

- Strengths:
  - value for money
  - modern up-to-date equipment
  - passionate, friendly operators
  - there not being too many other tourists around
  - the ability to learn (AC Nielsen, 2002, p. 75).

Scenic bush walks

Overall satisfaction: 46% rating it as superb (top third of all activities):

- Strengths:
  - friendly, passionate operators
  - value for money
  - not too many tourists or operators around during the walk (AC Nielsen, 2002, p. 76).

Sea fishing

Overall satisfaction: 46% rating it as superb (top third of all activities):

- Strengths:
  - the spectacular scenery
  - the ease to arrange it
  - operators that were passionate and friendly (AC Nielsen, 2002, p. 77).

Skiing

Overall satisfaction: 37% rating it as superb (middle third of all activities):

- Strengths:
  - the spectacular scenery: this should be emphasised in marketing material
  - the value for money
  - the level of safety instruction (AC Nielsen, 2002, p. 78).

Horse treks

Overall satisfaction: 23% rating it as superb (bottom third of all activities):

- Strengths:
  - there not being too many other operators or tourist around
  - friendly and passionate operators (AC Nielsen, 2002, p. 79).

Golf

Overall satisfaction: 22% rating it as superb (bottom third of all activities):

- Strengths:
  - value for money
  - the lack of other tourists around (perhaps less crowded courses generally)
  - ease of arranging the activity (AC Nielsen, 2002, p. 80).

Scenic flights over glacier

Overall satisfaction: 70% rating it as superb (top third of all activities):

- Strengths:
  - the spectacular scenery
  - feeling involved in the experience (perhaps by landing on the glacier)
  - friendly, and passionate operators
  - the opportunity to learn (AC Nielsen, 2002, p. 81).

Scenic boat cruise

Overall satisfaction: 30% rating it as superb (middle third of all activities):

- Strengths:
  - the spectacular scenery
  - the opportunity to learn
  - friendly, passionate, knowledgeable operators
  - value for money (AC Nielsen, 2002, p. 89).

Marae visits

Overall satisfaction: 31% rating it as superb (middle third of all activities):

- Strengths:
  - a feeling had learnt something from the experience, gaining an insight into Maori cultural forms part of this learning
  - operators (includes the performers) that were friendly, knowledgeable 'real New Zealanders', who were passionate about what they were doing
  - satisfaction wit the uniqueness was high, i.e. that it couldn't have been done anywhere else in the world (AC Nielsen, 2002, p. 92).

Farm show

Overall satisfaction: 28% rating it as superb (middle third of all activities):

- Strengths:
  - providing insights into what farming is really like
  - operators that were passionate, knowledgeable and friendly 'real New Zealanders'
  - value for money
  - learning (AC Nielsen, 2002, p. 93).

Farm visit

Overall satisfaction: 24% rating it as superb (bottom third of all activities):

- Strengths:
  - providing insights into what farming is really like
  - operators that were passionate, knowledgeable and friendly 'real New Zealanders'
  - value for money
  - learning (AC Nielsen, 2002 p. 94).

9 Effects of Changing Water Use

River and water-based activities in the Waitaki Catchment are affected by water levels. Within the discussion tables of this report, there is comment on the effect of water levels on each activity discussed.

This is a very challenging factor to assess for water-based recreation activities because while one water flow level will be positive for one activity or form of activity it will be negative for others. Balancing up the positives and negatives becomes a difficult subjective exercise. It is not considered that the information in this report leads to a confident assessment of acceptable water levels for individual water bodies.

The difficulty of conducting primary research to find an appropriate flow level for the Waitaki River was experienced by the Project Aqua Boffa Miskell, Robb Greenaway 2003 study.

In this study respondents were asked a series of questions about river conditions, including:

- whether and how they checked flow levels prior to their visit
- effects of high and low flows
- knowledge of a minimum, preferred or maximum river flow.

Respondents were also asked if they had ever visited the Waitaki River and been dissatisfied with the conditions. "Forty-five percent of river survey respondents recorded yes, as did 46% of 'qualified' community survey respondents" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 22).

This response seems quite low as the Waitaki River has fluctuating conditions that on some days are likely to dissatisfy participants. The survey was predominantly from respondents who were using the river during high flow conditions and so may be biased towards those who are satisfied with high flow conditions. The reasons given for visitor dissatisfaction were in order of selection for the recreation survey were: flooding (35%), other (26%), fluctuating levels (13%), low flows (13%), dirty water (7%), not enough fish (3%), problems with access (2%), dirty farm pollution (1%), overgrowth of scrub – gorse, broom etc (0%) (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 23). Results from the community survey were similar.

While respondents were asked if they were ever dissatisfied on a particular day this does not mean that they would never want particular conditions to occur. A comparison can be drawn between someone visiting a ski field where they cannot get onto the mountain for a day due to snow falling. This does not mean that the skier doesn't like snow fall, as snow is obviously essential for skiing. It is a similar case for some things that dissatisfy river users, such as flooding or fluctuating river flows. While on one day these conditions may be dissatisfying, overall they enhance a particular activity. Questions that may have identified these factors were not asked in the recreation study and so which factors that are dissatisfying one day but complimentary overall cannot be stated from these survey results.

Respondents were asked if they checked the river conditions before their visit. "A total of 31% of respondents checked the river flow before visiting the Waitaki" (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 23). This result cannot be considered as representative of the proportion of total users who check the river before visiting as those who checked the river and chose not to visit the river because of conditions during the survey period would by definition not be part of the survey sample. Because the river conditions were high during the survey period it can be assumed that there was a significant number who checked river flow conditions and chose not to visit. So the number of respondents who check the river before visiting within the total river user population is likely to be higher than the figure stated from the survey results.

The information sources used by respondents to check the river are also likely to be biased. The results for sources of information for river use were stated as: visually (48%), word of mouth (20%), newspaper (14%), telephone (0800, 0900) (14%), internet (5%). It cannot be known how many respondents checked the river by whatever means and chose not to visit because of what they found out. So the means that they used, for example internet and telephone, will be underrepresented because they did not venture to the river and have the chance of being surveyed. It should also be noted that those who are out of town do not have the chance to visually check without first travelling a significant distance to the river so are likely to check by some other source, such as telephone or internet.

As has been stated earlier in this report, it is believed that the high river flows during the survey period influenced who participated in the survey. As the river was flowing at a consistently high rate survey respondents were those who were prepared to participate in recreation activities during high river flow conditions. Respondents were asked if they could state their minimum, maximum or desired flow level in cumecs for their preferred activity (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 24). "37% of respondents said they knew a minimum, maximum or desired flow level in cumecs (cubic metres per second) for their activity" (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 24). Basic statistical analysis was completed for the data which gave calculated: minimum mean flow 241 cumecs; preferred mean flow 313 cumecs; and maximum flow 425 cumecs (Boffa Miskell, Rob Greenaway & Associates 2003b, p. 25). Mode and median flow were all within 25 cumecs of the mean for the three reported measures except for the mode preferred flow which was 350 cumecs.

Although *desired* and *preferred* are similar words, both were used interchangeably in the survey (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 43). It is not known how these words may have been interpreted differently by respondents and what effect this had on results.

For each fishing activity – trout fishing (n=37); trout/salmon fishing (n=35), salmon fishing (n=38) and whitebaiting (n=10), All (n=120) – a chart represented the preferred flow. Again these results should be considered with caution because of the flow level during the survey period, the time of the survey and also the small sample size of each group that was surveyed. The results showed that there was little difference between the groups and the most common combined mean for 'All' was between 301–350 cumecs. This can be interpreted as the preference for any one day on the river but does not mean that there is not a preference for the river at some times to flow higher or lower than that preferred flow rate. Significantly, respondents were asked for one preferred flow rate not a preferred range which may be more appropriate for some activities which are enhanced by changing river levels such as fishing and jet boating.

Respondents who could not state a preferred flow in cumecs were asked if they would prefer a flow that was: a lot lower than today; a little higher than today; like today; a little higher than today; or, a lot higher than today. These results confirm that the survey flow range was high. While a high proportion preferred how the river was on the survey day this was less when respondents were surveyed in higher flow conditions. A very small proportion wanted the river a little higher and no one wanted the river a lot higher (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 26). The results show that more people wanted a lower river (95) than the day they were surveyed on than those who preferred the day they were surveyed on (92). This is significant considering respondents had freely chosen to participate and does not include those who were not participating because they considered the river too high.

"Respondents were asked how often their main activity was not possible or seriously limited due to high or low flows on the Waitaki River" (Boffa Miskell, Rob Greenaway & Associates, 2003b, p. 27). Without defining what is a high or low flow it is difficult to interpret these results. Environment Canterbury mean cumec readings since 1999 to the end of the main survey period (four years) show that the river flowed lower than 278.8 cumecs 20 percent of the time and flowed higher than 450.6 cumecs 20 percent of the time.[3] Below and above this range gives an arbitrary low and high flow range. But without asking respondents what they consider a high or low flow level it is not possible to know what respondents meant when answering this question.

A low flow trial was completed to gather information and data that would assist in the determination of a residual flow regime, should Project Aqua proceed. The trial was achieved by progressively dropping the river from its typical mean flow of about 350 cumecs down to 150, 120 and 90 cumecs. Each flow was maintained for 24 hours to be observed by interested stakeholders (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 29).

The results for this trial need to be treated with caution because of the low sample sizes and short time of the study. For example 12 people assessed the river at 150 cumecs. Of these 12 the results were: perfect (1); very good (1); adequate (in places) (1); disappointing (2); completely unsatisfactory (7). In total there were 61 assessments of the river at four flow levels and the maximum number of assessments of one flow was 22 respondents (120 cumecs).

This trial asked about the flow of the river at each level for a 24-hour period. The effects of running the river at that level for a prolonged period of time on recreation experiences are not known. It is considered by a number of observers though that the river flow is likely to drop further the longer it is run at a low flow level and a trial needs to be run for longer than 24 hours to get a true indication of likely river conditions.

There is a large gap between 150 cumecs (the highest lowered level) and 350 cumecs which is a typical flow. Recreationists' opinions between these two flow levels are not known.

Respondents were also asked the following questions

> *If Project Aqua resulted in similar flows to those you experience today in the lower Waitaki River, do you think that this would adversely affect your future enjoyment of the river for your recreation activity(ies)?*

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[3] Information extracted from mean hourly flows (cubic metres per second) for the Waitaki River at Kurow (site 71104) supplied by Environment Canterbury for the period. Environment Canterbury consider the information provided as audited information.

The following summary of views were: not at all (6); a small amount (3); it will be different at first but I will get used to it (4); the quality of the experience will be changed for the worse (31); I probably would not pursue this activity here any more (7) (Boffa Miskell, Rob Greenaway & Associates, 2003a, p. 31).

The challenges faced in the study discussed above illustrate the complex issues involved when considering acceptable water flow levels in the Waitaki Catchment for recreation activities.

10 Future Recreation and Tourism Trends

10.1 Future recreation trends

Recreation activities are likely to become more intensified in the future as people attempt to cram more experiences into shorter amounts of time. Recreation is also likely to be experienced by an increasingly aging population. These two factors are likely to increase popularity of recreation activities in the Waitaki Catchment.

Use of lakes for water sports during summer periods is predicted to increase in use. Other mechanised activities such as mountain biking, four-wheel driving and jet skis which allow participants to experience greater areas of countryside in shorter spaces of time and will take people to more areas of the catchment. The impacts on these areas is likely to be increased. If stream beds are not protected by water flows the impacts will be even greater. New technologies that come on to the market may also add to environmental and social recreation impacts. Tramping shows evidence of more condensed activities with more visitors opting for shorter rather than longer tramps.

The ageing population is not likely to retire to sedentary lifestyles as they have in the past. It is quite likely that future retiring generations will return to recreation activities they engaged in during their youth, potentially at a slower pace or in a modified form. This is likely to return more fishers, hunters and even skiers to activities they had time for before constraints placed on time from raising families and earning a living limited leisure time. Use by more older users and continued use by younger recreationists who traditionally make up the highest proportion of users is likely to increase demand on opportunities.

Pastoral lease tenure review is likely to provide more opportunities for users to experience. A larger recreation estate is also likely to increase demand for use of the area.

Skiing is planned to continue to grow due to the development of snow making that will increase confidence in opening days and skier days during the season.

10.2 Future tourism trends

10.2.1 New Zealand tourism forecasts 2004–10

Tourism Research Council New Zealand (prepared in 2004)

The best information on future tourism trends in New Zealand is provided by the Tourism Research Council. Their latest report makes a prediction out to 2010.

International visitor arrivals reached an all-time high of 2.10 million in 2003, up 2.9% from 2.05 million in 2002. Total arrivals are expected to reach 2.48 million in 2005, increasing further to 3.12 million by 2010. This represents a total increase of 48.3% (1.02 million arrivals) and an average increase of 5.8% per annum.

Seasonal patterns for international tourism have not changed much in the ‘peak’ season from 1 November to 31 March. However, long stays in the summer months result in 55–58% of visitor nights being spent in New Zealand during the peak season (Tourism Research Council New Zealand (TRCNZ), 2004c, p. 5).

Figure 2: Annual visitor arrivals forecasts

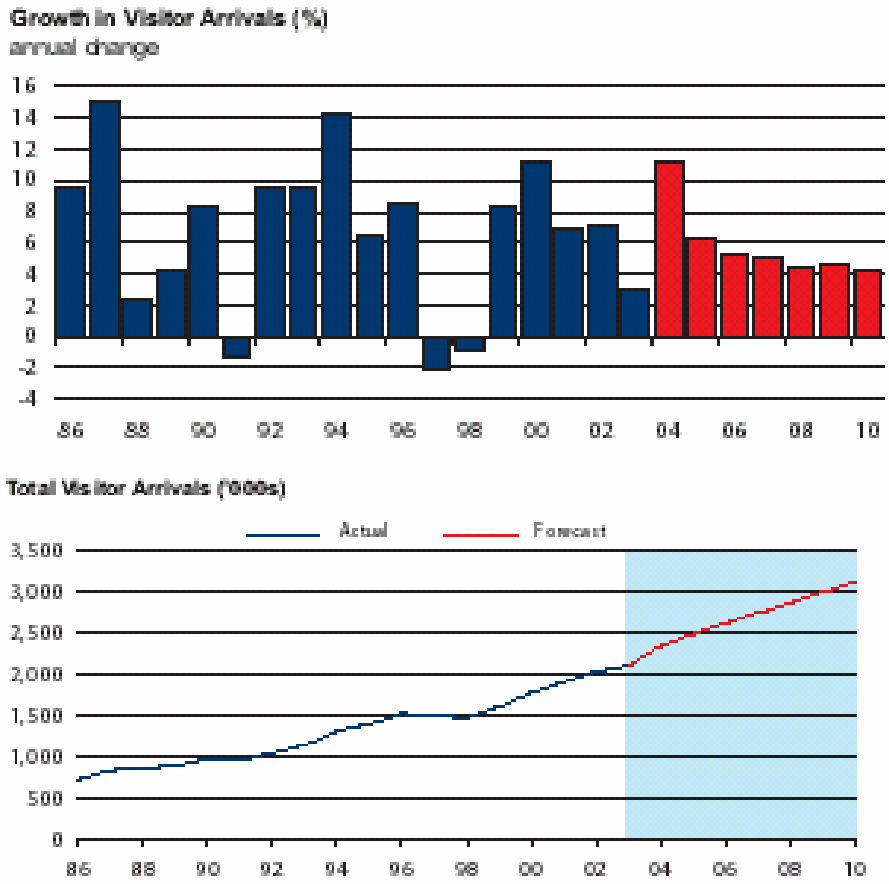
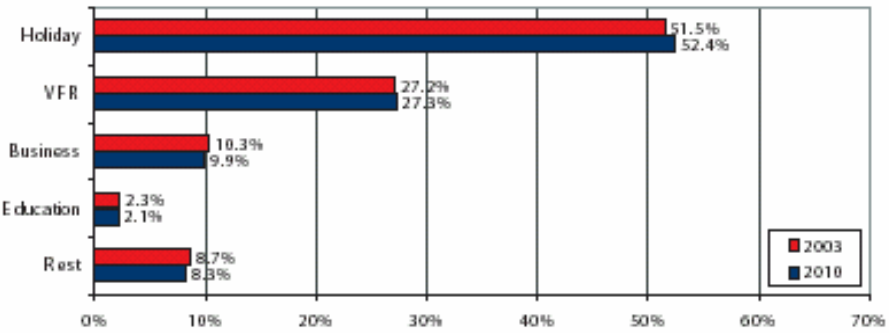


Figure 3: Share of arrivals by purpose of visit



Source: New Zealand Tourism Forecasts 2004–2010 (p. 7)

International visitors spent a total of 44.4 million nights in New Zealand in 2003, up 1.8% from 43.6 million nights in 2002. Total nights are expected to reach 50.3 million in 2005, increasing further to 65.9 million by 2010. This represents a total increase of 48.6% (22.3 million nights) and an average increase of 5.8% per annum.

The average length of stay in 2003 was 21.1 nights up from 18.3 nights in 1996. Average length of stay is expected to fall to 20.2 nights in 2005, before recovering to 21.1 nights by 2010.

Figure 4: Forecasts of total visitor nights

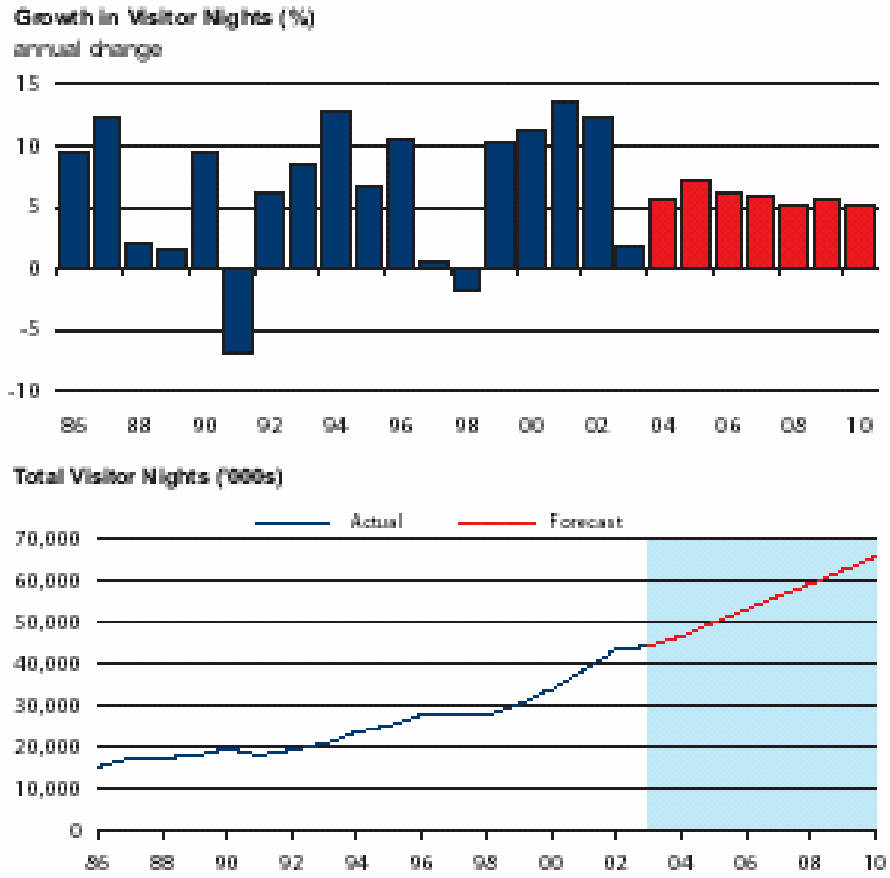
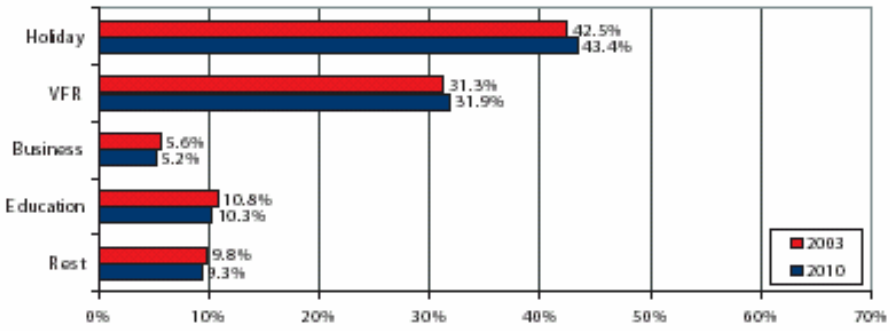


Figure 5: Share of total visitor nights by purpose of visit



Source: New Zealand Tourism Forecasts 2004–2010 (p. 8)

International visitors spent a total of $6.38 billion in New Zealand in 2003, up 3.9% from $6.14 billion in 2002. Total expenditure is expected to reach $7.52 billion in 2005, increasing further to $11.27 billion by 2010. This represents a total increase of 76.6% ($4.89 billion) and an average increase of 8.5% per annum.

New Zealanders made 19.6 million domestic overnight trips in 2003. Domestic trips are expected to reach 20.0 million in 2005 increasing further to 21.6 million by 2010. This represents a total increase of 10.4% (2.0 million trips) and an average increase of 1.4% per annum. (TRCNZ, 2004c, p. 5)

New Zealand regional tourism forecasts 2004–2010, Mackenzie Regional Tourism Organisation (Tourism Research Council)

For the purposes of the 2004 forecasting programme, the Mackenzie Regional Tourism Organisation (RTO) has been defined as comprising the Mackenzie District territorial authority.

Mackenzie RTO has a resident population of 3760 persons (June 2003). Twizel, Fairlie and Tekapo are the main towns as well as the focus of most of the tourism infrastructure. More than half of employment is in tourism focused sectors, particularly accommodation. (Tourism Research Council, 2004b, p. 4)

Mackenzie is located in the centre of the South Island and lies between two of New Zealand's popular tourism destinations – Christchurch and Queenstown. As such, it is most often visited by road on this popular route or from the much closer Timaru. Mackenzie has some small domestic airports that are also a popular base for scenic flights in the area. (Tourism Research Council, 2004b, p. 10)

Aoraki/Mt Cook is the key driver of the tourism activity – especially international day visitors, but the spectacular scenery, lakes and mountains also support a growing infrastructure for recreational activity. (Tourism Research Council, 2004b, p. 4)

International visitors made a total of 283,000 day and overnight visits to the Mackenzie RTO in 2003, staying a total of 370,000 visitor nights and spending a total of $60 million. Domestic visitors made a total of 745,000 day and overnight visits to the RTO, staying 503,000 visitor nights and spending a total of $97 million. (Tourism Research Council, 2004b, p. 2)

In total, Mackenzie attracted 357,000 overnight visitors in 2003, 670,000 day visitors, 873,000 visitor nights and $157 million in tourism expenditure for the RTO. (Tourism Research Council, 2004b, p. 2)

By 2010, total overnight visits to the Mackenzie RTO are expected to increase by 33.4% to 476,000 and total day visits are expected to increase by 11.2% to 745,000. Total nights are expected to similarly increase to 1.09 million (24.9%), and visitor expenditure to $243 million by 2010 (54.8%). (Tourism Research Council, 2004b, p. 2)

Mackenzie visitor nights are dominated by holiday travellers (53% of all Mackenzie nights in 2003). Holiday nights in the RTO are projected to grow by 28.1% to reach 597,000 by 2010 (1.0% of total New Zealand holiday nights). Visiting friends and relatives (VFR) travel is also significant (227,000 nights in 2003, 26% of the RTO total). The contributions from business, education and other travel are smaller in percentage terms, though still generate 180,000 visitor nights overall. (Tourism Research Council, 2004b, p. 2)

Most of Mackenzie's commercial visitor nights are spent in hotel accommodation (49%), followed by motels (41%). Backpacker and hosted accommodation and caravan parks/ camping grounds handle the remaining 10%. Mackenzie RTO establishments accounted for 1.6% of New Zealand's total hotel guest nights, and 1.4% of motel guest nights in 2003. (Tourism Research Council, 2004b, p. 2)

Mackenzie's share of total New Zealand visitor nights and expenditure is not expected to increase by 2010 – even though there is a slight increase in Mackenzie's share of total RTO visits. By 2010, international visitors will account for 51% of total nights in the RTO (currently 42%) and 44% of total expenditure (currently 38%). (Tourism Research Council, 2004b, p. 2)

The RTO's outlook is for reasonably steady growth throughout the forecast period, and while international tourist nights will soon surpass domestic, there is only limited change anticipated by 2010 in average length of stay and the mix of day and overnight visitors. (Tourism Research Council, 2004b, p. 3)

Domestic visitors spend, on average, a longer time in Mackenzie (3.7 nights) than do international visitors (1.7 nights), and this pattern is expected to persist to 2010. The difference is in part due to the differences in visitor mix, with longer stay holiday, VFR and business related travel by domestic visitors, compared to the shorter holiday-focused visits by internationals. (Tourism Research Council, 2004b, p. 3)

Mackenzie attracts 610,000 domestic day visits, many of which will be by local residents travelling within the RTO, but also from towns/cities in surrounding areas. International day visits are fewer, though are by definition incidental to the overnight travel of international visitors. International travellers will drive 83.8% of the growth in Mackenzie visitor nights to 2010, with major contributions overall from the United Kingdom, Australia and North East Asia markets. (Tourism Research Council, 2004b, p. 3)

Overall, average expenditure per visitor is expected to increase steadily, from $314 in 2003 to $379 by 2010 for overnight visitors. (Tourism Research Council, 2004b, p. 3)

While domestic spending rates are projected to grow faster than international, Mackenzie's overseas visitors still spend considerably more ($211 per visitor, 2003) than domestic ($131 per visitor, 2003). (Tourism Research Council, 2004b, p. 3)

10.2.2 Predicted trends for tourism activities in the Waitaki Catchment

The development of the Mackenzie Heritage Centre in Tekapo (2006) will attract more visitors (estimated 200,000 visitors) to stay in the upper catchment.

Skiing is currently a significant attraction for many New Zealanders. Growth in this activity and subsequent accommodation for winter visitors is likely to stimulate year round tourism growth. This is likely to be beneficial for existing operators such as heli-bike and scenic flight operators. Growth is also likely to stimulate new tourism activities in the area.

Review of high country pastoral leases is likely to bring further land under DoC's management. This will provide further recreation opportunities and is likely to enhance the overall reputation of the area as a place for outdoor recreation activity.

Fishing is likely to grow as an overseas tourist activity as the New Zealand Pure marketing attracts increased visitor numbers.

Lake-based water sports, typical of New Zealand summer holidays are likely to increase in popularity as they are currently reported to grow each year.

The Vanished World initiative is an example of how future tourist development could occur in the lower Waitaki. It is a community driven project that is based on strong cooperative partnerships and community support. Other tourism initiatives based on the same principles are likely to be equally successful.

Tourism development based on significant industries such as viticulture have also been proposed. There is immense potential to develop a tourism industry that plays to the existing strengths of the area, including nature based experiences and local culture and heritage. There are many interesting stories and nature based recreation activities to be experienced in the lower catchment including the social history of the dams, the experiences to be had on the river, and physical activities such as walking, biking and climbing.

Summer holiday experiences for New Zealanders camping and enjoying the lakes is already a considerable tourist market and is likely to be sustained in the lower catchment.

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Appendix: Reported Fishing Days for the Waitaki Catchment

Estimated usage (angler-days ± 1 standard error) for all New Zealand lake and river fisheries recorded in either the 1994/96 or 2001/02 National Angling Surveys, grouped by fishing region and catchment. Catchments are ordered clockwise around New Zealand (Anon, 1956); catchment subtotals are given for all catchments containing five or more recognised fisheries.

Waitaki River catchment

River/lake	2001/02							1994/96 total
	October–November	December–January	February–March	April–May	June–July	August–September	Total	
Ahuriri River	590 ± 260	640 ± 200	1,310 ± 450	390 ± 150			2,930 ± 580	2,590 ± 720
Alexandrina Lake	2,170 ± 640	3,830 ± 1,020	2,810 ± 630	530 ± 200	140 ± 70		9,470 ± 1,380	4,480 ± 720
Aviemore Lake	2,440 ± 790	5,880 ± 1,100	2,280 ± 570	340 ± 110	550 ± 210	90 ± 90	11,580 ± 1,490	8,850 ± 1,320
Avon Burn								20 ± 20
Bell's Pond	160 ± 160			70 ± 70			220 ± 170	
Benmore Lake	2,780 ± 580	8,930 ± 1,140	5,360 ± 790	1,640 ± 350	1,380 ± 410	1,820 ± 530	21,900 ± 1,680	12,830 ± 1,480
Cameron Loch	80 ± 80	40 ± 40					120 ± 90	
Cass River		30 ± 20					30 ± 20	
Coal River								20 ± 20
Dobson River	100 ± 100	50 ± 50	110 ± 70	30 ± 20				280 ± 130
Fork Stream								40 ± 30
Godley River		90 ± 80	10 ± 10	20 ± 20			120 ± 80	100 ± 80
Grays River		150 ± 80	70 ± 50	30 ± 30			260 ± 100	90 ± 60
Hakataramea River	960 ± 370	420 ± 150	240 ± 200				1,610 ± 440	1,920 ± 480
Hopkins River	130 ± 90						130 ± 90	350 ± 220
Huxley River								260 ± 140
Irishman Creek	30 ± 30						30 ± 30	20 ± 20
Jollie River		90 ± 80	30 ± 30				120 ± 90	
Kelland Pond	640 ± 410	110 ± 70		30 ± 30			770 ± 420	20 ± 20
Kurow River		60 ± 40	< 10				60 ± 40	270 ± 130
Larch Stream								100 ± 70
Macaulay River		130 ± 90					130 ± 90	
Maerewhenua River	40 ± 40	120 ± 80	40 ± 40				200 ± 90	470 ± 230
Maitland Stream			90 ± 90				90 ± 90	20 ± 20
Mary Burn	60 ± 50	110 ± 50	20 ± 20				200 ± 70	30 ± 20
McGregor Lake	130 ± 130	280 ± 130	180 ± 120				590 ± 220	20 ± 20
Merino Lake		70 ± 70					70 ± 70	
Middleton Lake		20 ± 20	30 ± 30				40 ± 30	880 ± 350
Ohau Canal	400 ± 200	740 ± 200	1,090 ± 370	2,380 ± 1940	200 ± 110	560 ± 500	5,370 ± 2,060	1,080 ± 630
Ohau Lake	740 ± 270	1,840 ± 430	1,020 ± 310	420 ± 150	250 ± 190	360 ± 220	4,630 ± 680	1,520 ± 380
Ohau River	150 ± 90	300 ± 120	40 ± 30				480 ± 150	640 ± 190
Omarama Stream			390 ± 290				390 ± 290	490 ± 170
Otamatapaio River			50 ± 50				50 ± 50	
Otematata River	40 ± 40	10 ± 10	130 ± 100				180 ± 110	590 ± 210
Parsons Rock Creek								50 ± 40
Poaka Lake		10 ± 10					10 ± 10	
Pukaki Canal	430 ± 400						430 ± 400	
Pukaki Lake	180 ± 100	490 ± 260	150 ± 70	180 ± 90		120 ± 120	1,130 ± 320	620 ± 190
Ruataniwha Lake	630 ± 410	550 ± 170	400 ± 160	70 ± 40		40 ± 40	1,700 ± 480	1,030 ± 340
Stony River		40 ± 40					40 ± 40	
Sutherlands Creek			50 ± 50				50 ± 50	
Tasman River			< 10				< 10	
Tekapo Canal	810 ± 310	1,760 ± 360	1,940 ± 390	850 ± 220	180 ± 110	2,150 ± 680	7,700 ± 940	870 ± 240
Tekapo Lake	1,170 ± 340	2,020 ± 390	1,700 ± 390	1,370 ± 320	1,160 ± 430	1,310 ± 500	8,730 ± 980	3,000 ± 770
Tekapo River	1,760 ± 490	1,710 ± 340	1,000 ± 310	310 ± 130	130 ± 130		4,910 ± 700	2,420 ± 490
Twizel River	260 ± 240	510 ± 160	370 ± 130	100 ± 60			1,250 ± 320	720 ± 360
Waitaki Lake	430 ± 280	750 ± 300	1,730 ± 780	130 ± 100			3,050 ± 880	5,230 ± 1,160
Waitaki River	5,710 ± 1,370	7,810 ± 1,620	7,890 ± 1,280	4,400 ± 720	1,120 ± 370	640 ± 380	27,580 ± 2,640	34,500 ± 3,150
Wardell Lake	30 ± 30						30 ± 30	20 ± 20
Total, Waitaki catchment	**23,030 ± 2,170**	**39,600 ± 2,680**	**30,560 ± 2,150**	**13,290 ± 2,170**	**5,100 ± 780**	**7,100 ± 1,210**	**118,680 ± 4,830**	**86,130 ± 4,310**