Green Globe 21
Kaikoura Community Benchmarking
Pilot Study

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Acknowledgements

Foreword

GREEN GLOBE 21 is the emerging global benchmarking and certification system for sustainable travel and tourism and is based on the Agenda 21 principles for Sustainable Development. In New Zealand, as elsewhere, sustainability has become the cornerstone of tourism planning and management.

This report documents the process and data gathering for GREEN GLOBE 21 benchmarking of the Kaikoura District. The Kaikoura District has been chosen as one of the three international pilot studies. In many respects the research flows on from a FRST funded case study of tourism management in Kaikoura undertaken at Lincoln University in 1998.

The research reported here has two goals :

- To test the applicability of the GREEN GLOBE 21 community benchmarking process
- To clarify the data gathering requirements, and efficacy of environmental and social indicators, in the New Zealand context.

The report presents data from the Kaikoura District, compares this with data gathered from the one completed Australian pilot project, and makes recommendations for both GREEN GLOBE 21 and for the Kaikoura District Council. Over time GREEN GLOBE 21 has considerable potential to enhance the environmental performance of tourist destinations.

Following submission of an initial benchmarking report GREEN GLOBE 21 has responded to this study's recommendations. Their response is included as a final chapter in this report.

Professor David G Simmons
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Summary

Project

One of the four objectives of the New Zealand Tourism strategy is to 'secure and conserve a long-term future'. A key recommendation under this objective is to continue to implement Green Globe or similar systems of environmental certification.

The process involved in GREEN GLOBE 21 Community Benchmarking for the New Zealand setting were assessed in the Kaikoura District (shown below in figure 1) by Landcare Research and Tourism, Recreation, Research and Education Centre (TRREC), both of Lincoln in 2001/2, as one of three pilot studies. The other two are Redland Shire (2000) and Port Douglas (2000) in Australia.
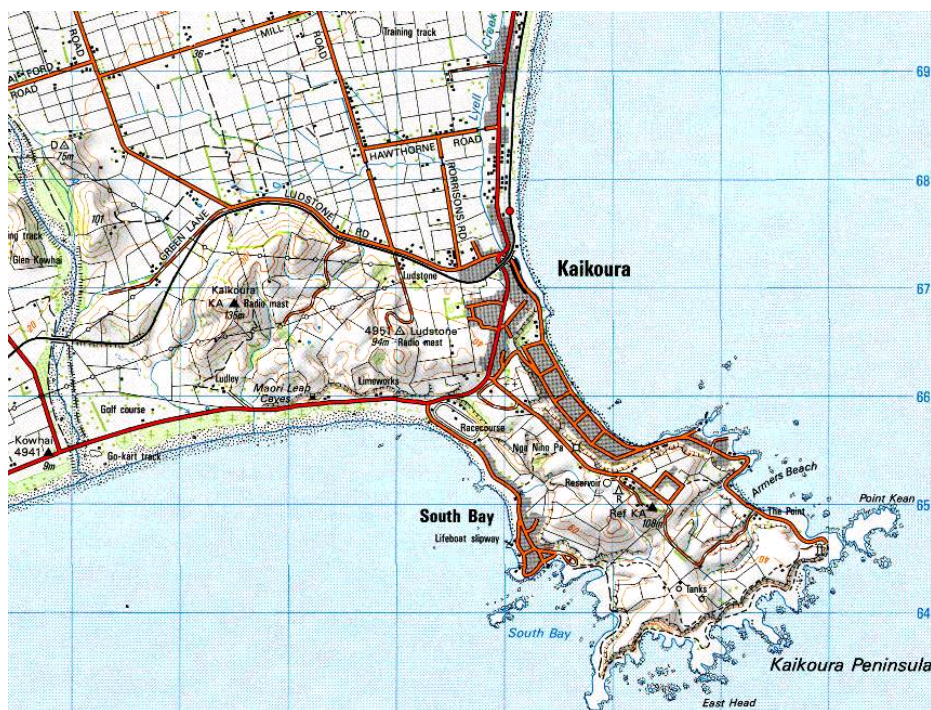
Figure 1. Topographic map of Kaikoura Township (Source: Topomap NZ, Mapworld, Christchurch)

Objectives

- Establish methodology behind each environmental indicator

- Prepare a set of indicators to measure social performance

- Collect data for each indicator

- Assess appropriateness of each indicator in terms of effectiveness to benchmark performance and resources needed to collect data

- Compare results with two Australian pilot studies

- Recommend a set of indicators for communities for use in the GREEN GLOBE 21 Standard

Main Findings

- Benchmarking Kaikoura District as a tourism destination has provided the basis for improving its environmental performance.

- Kaikoura's experience in developing a sustainability policy owes much to its association with TRREC and the tourism strategy already in place. It may not therefore accurately reflect issues associated with the development of this benchmarking indicator in other areas.

- Gathering data for the Energy Consumption indicator proved problematic. Determining Kaikoura's share of the Marlborough Districts' petrol tax was difficult but necessary because oil companies did not divulge sales figures for Kaikoura District. Electricity companies differed in the detail of records kept, and private organisations were distrustful of the process and preferred to give 'rough estimates'.

- Greenhouse gas production figures are also problematic – energy consumed in the District is not the same as that purchased, and the mix of electricity sources varies rather than being 100 per cent 'renewable' (hydro-electricity). Fuel consumption data are also required for accurate benchmarking of air quality indicators.

- In rural areas water consumption is not metered and estimated use is an impediment to accurate figures. Likewise rural waste that does not go to the District landfill and cannot be measured.

- Chemical biodegradability is difficult to ascertain in the absence of a comprehensive database, and use of spray contractors prevents the Council from estimating the amount of pesticides used.

- Waterways Quality benchmarking does not accommodate special cases such as chemical spills or effluent surges, even though these are a concern. The Kaikoura District has chosen to measure the accidents that involve chemical spills as a Community-Specified Environmental Indicator.

- The recent introduction of GREEN GLOBE 21 approved environmental accreditation schemes at the current time in New Zealand makes benchmarking Travel and Tourism operators impossible at this early stage in its uptake.

- The diverse nature of regional geographies makes it extremely difficult to arrive at any means by which to compare (with any accuracy or certainty) the environmental and social 'performance' of any given community over another. This apparent inability to contextualise destination communities indicates that GREEN GLOBE 21 may be best served by benchmarking communities against themselves (based on the central tenant of continuous improvement) rather than on the performance of distant and dissimilar communities.

GREEN GLOBE 21 Recommendations

- The GREEN GLOBE 21 energy calculator needs to allow for more than five energy sources, and for multiple electricity sources to be averaged. A New Zealand national figure needs to be added for carbon dioxide emissions from electricity generation which averages to be around 65 per cent hydro.

- The use of person years per annum (pypa) in many of the indicator ratios employed by GREEN GLOBE 21 may be confusing (due to the repetition of the year time period) for future benchmark communities. As an alternative, the use of persons per annum (ppa) may be a less confusing, and thus more appropriate, measure.

- An ambient air quality indicator is recommended based on the difference between PM_{10} monitoring data and a control 'clean air' site and an urban site.

- It may be necessary to prescribe the types of paper to measure for Resource Conservation Benchmarking.

- Water Quality testing should include both routine monitoring and encourage special case testing after 'accidents'.

- An additional indicator measuring the number of non-compliance notices the lead agency had received from their regional authority would ensure that breaches to any resource consents held where addressed in the GREEN GLOBE 21 process.

- Only third-party accreditation schemes should be counted for the Travel and Tourism indicator, and these should be listed in the Benchmarking Indicator Booklet for Communities.

- A greater range of optional community-selected indicators are required that are generic across different areas.

- Community acceptance of Green 21 and improvement of indicators are desirable, and would need comparable survey criteria between communities.

Kaikoura Recommendations

- The Kaikoura District Council involvement in the Energy Efficiency Conservation Authority (EECA) Energy- Wise Councils project will lead to the consideration of energy alternatives within the District. This project has the potential to support the Council in any future initiatives to reduce energy consumption.

- The accuracy of the solid was data collected would be improved by the introduction of a weighbridge at the landfill.

- The Kaikoura District Council should actively promote its rating relief policy for biodiversity areas and draw attention to voluntary protection covenants available under the Queen Elizabeth II National Trust.

- Kaikoura District Council being the 'lead agency' in the Kaikoura District is best placed to promote the goals and objectives of Green Globe21 to the business community. This could be facilitated through the establishment (or consolidation) of business networks within the District.

- Information is not readily available on the renewable consumption and production for Territorial Local Authorities (TLAs). Kaikoura District's current association with the Energy-Wise Council scheme will eventually lead to the consideration of renewable energy alternatives within the District.

- Kaikoura should work in conjunction with the relevant government agencies and authorities to reduce the number of accidents (especially those involving chemical spills) on the Kaikoura highway.

- Kaikoura District Council should also seek to ensure that effective communication between itself and the wider community is achieved. This would involve promoting the GREEN GLOBE 21 goals of sustainability.

- The installation of a water meter(s) by Kaikoura District Council would increase the accuracy of the water consumption data for areas outside of the township.

Chapter 1
Introduction

This document reports on a pilot study that assesses the processes involved in the GREEN GLOBE 21 Benchmarking of the Kaikoura District, New Zealand. This study represents the third of three pilot studies that examine the processes associated with the GREEN GLOBE 21 Community Benchmarking procedure. This study also serves to contextualise the GREEN GLOBE 21 Community Standard for the New Zealand setting.

Throughout this report references are made to the two previous GREEN GLOBE 21 community pilot studies: Redland Shire and Port Douglas. Information and data reported pertaining to the Redland Shire pilot study are sourced from the Redland Shire Performance Indicators Report (2000) for GREEN GLOBE 21. Similarly, information and data reported pertaining to the Port Douglas pilot study are sourced from the Douglas Shire Baseline Data Report (2000) for GREEN GLOBE 21.

One of the four objectives of the New Zealand Tourism strategy is to 'secure and conserve a long-term future'. A key recommendation under this objective is to continue to implement Green Globe or similar systems of environmental certification (NZTS, 2001). GREEN GLOBE is a global benchmarking, certification and improvement system for sustainable travel and tourism and is based on the Agenda 21 principles for Sustainable Development.

GREEN GLOBE 21 uses straightforward accreditation criteria based on continuous improvement in environmental performance relating to operational aspects such as energy consumption, waste minimisation, greenhouse gas emissions, waterways quality and more. The scheme also offers accreditation to entire destinations as well as individual companies. GG21's product has therefore evolved into a three-stage process (ABC) for companies, communities and consumers:

The Affiliate stage represents the starting point to the GG21 Standard and allows organisations to learn more about Green Globe and prepare for Benchmarking and Certification. The Benchmarking stage requires organisations to measure their environmental performance against GG21's environmental performance indicators. If they are above baseline performance they may use the GG21 logo.

1.1 Kaikoura District

1.1.1 Background

Kaikoura lies 200 kilometres north of Christchurch (the largest urban centre of New Zealand's South Island) and 100 kilometres south of Blenheim (the nearest urban centre) (see Figure 2). This relative isolation, coupled with a prolonged period of national economic restructuring in the 1980s, has led Kaikoura to become extremely reliant on the ever-increasing flows of (mainly) international and domestic visitors to the District. The Kaikoura area has a spectacular and unique geography. The Seaward Kaikoura Range towers to 2,600 metres about 25 kilometres from the seacoast on which the Township sits (Figure 1, page 1). Out to sea, the continental shelf is unusually close to the coastline, a fact which brings marine

mammals such as whales and dolphins close to the shore and provides a particularly good food source for the most commonly seen mammals in the area – New Zealand fur seals.

The local authority, Kaikoura District Council, is New Zealand's second smallest territorial local authority. It has a rating base of around 2,100 properties and a total permanent population of 3,483 (2001 Census data), with 2,760 in Kaikoura township itself (see Appendix A for population data). The total annual revenue generated from property taxes ('rates') for 2001/ 2002 is estimated to be $2.3 million (Quickfall, 2002). Yet, the Council covers an area of some 2,048 square kilometres, and has statutory functions similar to other small authorities. These include provision of infrastructure, roading and other associated services to keep the district functioning viably. The importance of effective infrastructure is even more pronounced with Kaikoura being a showcase for tourism. With this in mind, it is estimated that tourism is directly responsible for approximately 10 per cent of peak demand for water and 25 per cent of peak demand from sewage treatment within Kaikoura Township (Simmons & Fairweather, 1998). In addition to this, previous research in Kaikoura has estimated that visitors to the Kaikoura District account for 38 per cent of total resource use (see Appendix A, Table B for details).
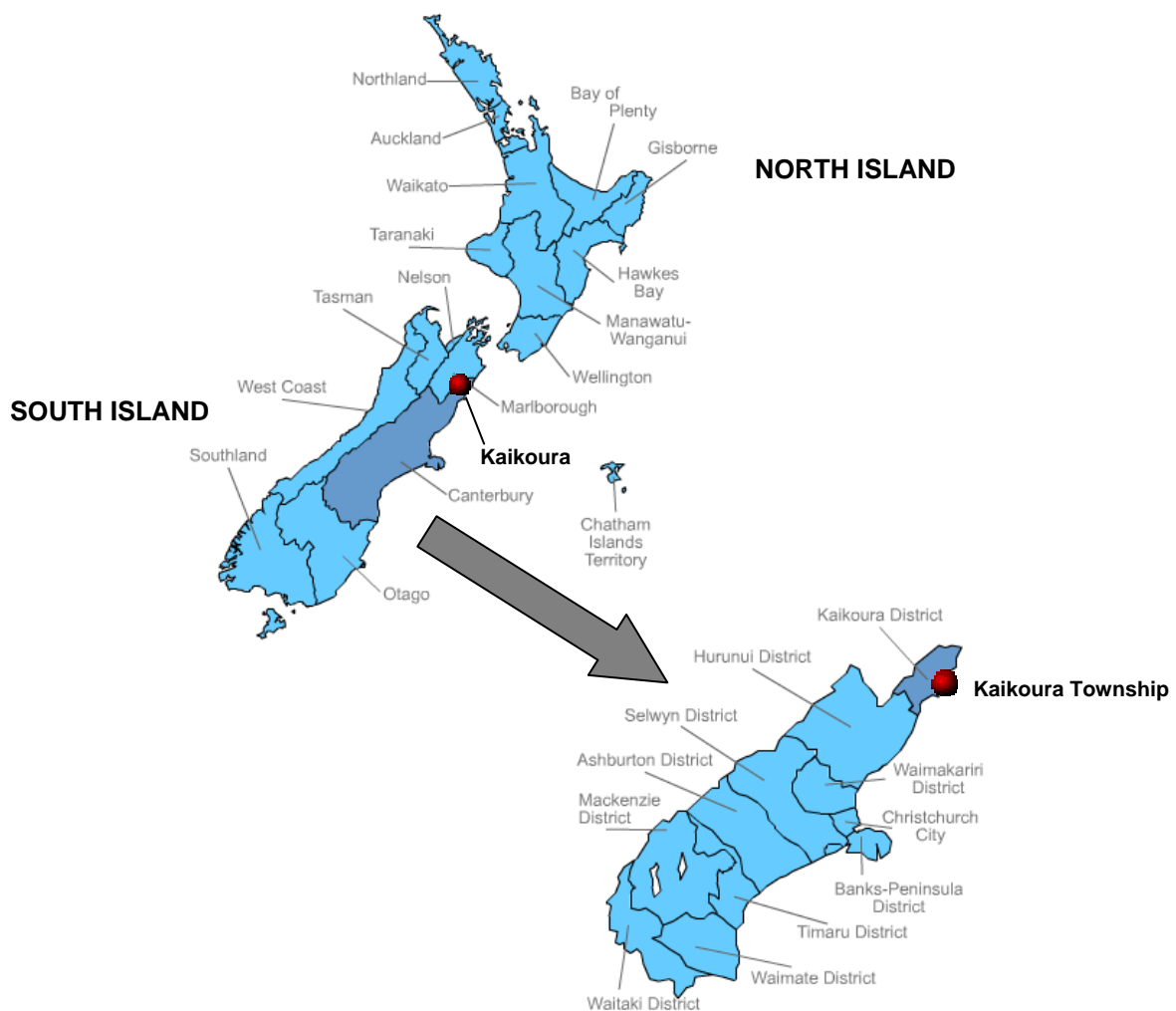
Figure 2.   Map of Study Area (Kaikoura, New Zealand)

1.1.2   Tourism in Kaikoura

Kaikoura has always been strongly associated with marine activities, but more recently is being seen as a tourist destination in its own right for ecotourism and adventure seekers. This has resulted in the town, and the District, now being recognised as a prime destination for international visitors. Tourism, at least in its present, highly commercialised form, is a new industry for Kaikoura. From small beginnings a decade ago, it has risen rapidly to 493,000[1] visits (356,000 overnight) per year (1998 figures). Current growth is estimated at 14 per cent per annum. While current increases in visitor numbers are unlikely to be sustained indefinitely, especially in domestic visitors, the five-year projection at the current growth rate would result in 1.6 million visitors by 2003 (Simmons & Fairweather, 1998).

The unusual profusion of marine life so close to the shore currently makes Kaikoura a popular tourist destination. Kaikoura is a major visitor destination for people who want to experience a close encounter with marine mammals. Sustained by a rich marine ecosystem, sperm whales (*Physeter catodon*), pilot whales (*Globicephala melaena*), orca (*Orinus orca*), common dolphins (*Delphinus delphis*), dusky dolphin (*Lagenorhynchus obscurus*), and New Zealand fur seals (*Arctocephalus forsteri*) frequent the waters off the Kaikoura coastline (Ward et al., 1998). As a consequence of this, Kaikoura now attracts many international (mainly) and domestic overnight visitors who come to see and experience a range of activities based mainly on these marine mammals. Visitors to the District can participate in whale watching, as well as swimming with dolphins and seals. These activities are subject to strict Department of Conservation regulations regarding numbers of participants and frequency of activities. In addition, visitors can fly out to see the whales in either small fixed wing aircraft or in a helicopter. Some local fishers also run fishing trips, while local farmers are now involved with farmstays, and other activities such as horse trekking and four-wheel-bike safaris.

In the Kaikoura District, approximately 330 full-time equivalent (FTE) workers are employed directly in tourism. Every job in tourism leads, on average, to a further 0.21 jobs elsewhere in the District economy. The flow-on employment effects mean that in total approximately 400 FTE jobs are generated in the District by tourism. Total employment in the Kaikoura District is believed to be around 1,400 FTE positions, hence almost 30 per cent of all jobs depend either directly or indirectly on tourism. Total direct spending by visitors is estimated to be $28 million per year. Flow-on effects of visitor spending increase total visitor-dependent spending (sales) in the District to an estimated $36 million (see Table 1 for a summary of key statistics). Value-added[2] arising directly from tourist spending is estimated at $12 million (including $7 million of household income). The flow-on effects of visitor spending increase total visitor-dependent value-added to $16 million (including $9 million of household income) (Simmons & Fairweather, 1998).

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1 Lincoln University's 1998 Kaikoura Case Study reported an additional 380,000 'short stop' visitors to Kaikoura. Although not included in person years per annum (pypa) calculation contained within this report, 'short stop' visitors, when added to overnight and day visitors, would increase the total number of visitors to Kaikoura from 493,000 to 873,000.

2 This is the total of returns to land, labour and capital. Hence it includes wages and salaries, income of the self-employed, rents on land profits, and depreciation of capital.

Table 1: Summary statistics for tourism in Kaikoura

Key Statistics	Kaikoura
Total resident population	3,483 (Kaikoura District)
	2,760 (Kaikoura Township)
Total District land area	2,048 km²
Total visitor numbers	1998: 873,000
	2000: 1 million estimated
	2003: 1.3 million projected
Estimated growth rate in visitor numbers	14 per cent per annum for period 1999 to 2003
	(based on 1994-1998 figures)
Economic benefits	Direct: $28 million to the local economy
	400 FTE jobs
	Total: $36 million to the local economy
	0.21 additional FTE jobs for each tourism job

Note: Adapted from Simmons and Fairweather, 1998.

Most of the tourism businesses in Kaikoura are locally owned and operated. The major attractions – whale watching, dolphin swimming and seal swimming – are all owned and operated within Kaikoura. Other tourist activities and accommodation are small in nature and run by owner-operators, many of whom belong to Kaikoura Information and Tourism Incorporated (KITI), an organisation set up to co-ordinate the efforts of individual businesses within the area.

Clearly, tourism plays an important and significant role in the continuing economic prosperity of the Kaikoura District. However, tourism, as well as being a generator of income, can also act as a pervasive agent of social and environmental change. With this in mind, and because Kaikoura relies so heavily on the natural environment to sustain its burgeoning tourism industry, the careful management of the interface between the industry and the local environment (social and biophysical) is seen as vital. Thus, it is for this reason that the Kaikoura District Council, as lead agency in the Kaikoura District, has decided to undertake the following GREEN GLOBE 21 Community Benchmarking programme.

1.2 Objectives

- Establish methodology behind each environmental indicator
- Prepare a set of indicators to measure social performance
- Collect data for each indicator
- Assess appropriateness of each indicator in terms of effectiveness to benchmark performance and resources needed to collect data

- Compare results with two Australian pilot studies

- Recommend a set of indicators for communities for use in the GREEN GLOBE 21 Standard

1.3   Background

GREEN GLOBE 21 is a global Affiliation, Benchmarking and Certification programme for sustainable Travel and Tourism. The GREEN GLOBE Benchmarking Stage focuses on the measurement of Sustainability Benchmarking Indicators (SBIs) based in nine Key Performance Areas (KPAs). The KPAs are:

- Greenhouse Gases

- Energy Management

- Air Quality

- Freshwater Resources

- Waste Minimisation

- Social and Cultural Impact

- Land Use Management

- Ecosystem Conservation

The SBIs are prescribed for Communities, Natural Protected Areas and 19 Travel and Tourism Sectors. The SBIs for Communities are in their draft form and Kaikoura is the third pilot study to test these. Previous pilots have been Redland Shire and Port Douglas Shire, both in Australia.

Chapter 2
Core Sustainability Benchmarking Indicators

2.1 Sustainability Policy

2.1.1 Indicator Measure

A policy is developed and put in place

2.1.2 Indicator Objective

Provide a clear and straightforward written policy that addresses key sustainability issues related to Travel and Tourism.

2.1.3 Source of Information

Kaikoura District Council developed an environmental and social sustainability policy in July 2001. This was accepted by the councillors, who agreed at the time that the final document's drafting and implementing was a management decision. The policy was altered accordingly in January 2002 to ensure that all factors required by both the benchmark and standard where incorporated, and was adopted by Kaikoura District Council's General Manager in that same month.

The policy is made up of two documents, a general environmental and social sustainability policy and the Tourism Strategy for Kaikoura District. Both of these documents have been formally adopted or accepted by the councillors of Kaikoura District Council and are available to view at anytime by ratepayers, stakeholders and members of the general public.

2.1.4 Findings

Both the environmental and sustainability policy and the Tourism Strategy for Kaikoura District meet the requirements of the Green Globe Standard (Section 1). Copies of these documents are in Appendix C.

2.1.5 Contacts

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2.2 Energy Consumption

2.2.1 Indicator Measure

Total energy consumption (GJ) per annum / person years per annum

2.2.2 Indicator Objective

Minimise overall energy consumption and encourage greater use of renewable energy sources.

2.2.3 Source of Information

The required energy consumption data were obtained from a variety of sources. These were selected partially on the basis of previous research undertaken within the Kaikoura District, as well as through consultation with the Kaikoura District Council and local Kaikoura businesses. Once collected, the data were then converted (using the GREEN GLOBE 21 energy calculator) into gigajoules (GJ) for the purpose of consistency.

Electricity

Two companies supply/distribute electricity to the Kaikoura District. The first, Mainpower New Zealand supplies electricity to the southern part of the district (south of Waipapa Bay). Accurate data from this company were obtained from the Kaikoura Grid Exit Point (KKA0331).

The second company, Marlborough Lines supplies electricity to the northern part of the district. Energy consumption data were derived from information provided by this company regarding number of transformers, average capacities and average loadings. This was problematic, as any figure derived from such an approach will not have a high or robust degree of accuracy. This is a limitation of data collection for electricity consumption in Kaikoura.

Petrol and diesel

A 'top-down' strategy was employed to obtain the required data. This involved approaching major fuel companies (i.e., BP, Mobil, Caltex, Shell, Challenge) at their head offices. Only one company was willing to provide the requested data.

Every wholesale distributor has to pay a fuel tax levied on any petrol and diesel, based on the volume it supplies within its distribution area. For the purposes of this study, it was assumed that the petrol and diesel tax reflects the amount of fuel supplied within a particular area. Therefore, petrol and diesel volumes supplied for the Kaikoura District for the relevant 12-month period were derived from the Local Authority Petroleum Tax (LAPT). The tax is annually distributed among a distribution area's constituent territorial local authorities, according to the proportion of the total rate revenue of each authority to the total rate revenue of all authorities for the preceding year (*Local Government Act 1974*). Although part of the Canterbury Region, the Kaikoura District falls within the Marlborough LAPT region.

The annual LAPT data for the relevant 12-month period was provided by the Information Solutions New Zealand Research Information Centre (Wellington). In addition, the relevant local authority (Marlborough District Council) was contacted for information regarding the proportion of the LAPT that was allocated to the Kaikoura District. Based on the information obtained from this territorial local authority, it was assumed that 7.7 per cent of the total supply into the Marlborough LAPT region was supplied into the Kaikoura District.

It is important to note that calculating the Kaikoura District's petrol and diesel consumption based on the above approach is problematic. This is because the consumption data derived from the LAPT data assumes that a territorial local authority's rating-derived revenue accurately reflects the proportion of fuel consumed within each constituent district. This is, in all probability, an incorrect (although convenient) assumption.

LPG

The major suppliers of LPG to the Kaikoura District were contacted regarding the amount (weight) of LPG consumed during the relevant 12-month period. However, only one LPG supplier (Rockgas Christchurch) was willing to provide the requested consumption data.

Aviation fuel

Enquiries were made at the Kaikoura Aerodrome regarding major suppliers of aviation fuel for the Kaikoura District. Only one supplier was identified. This supplier (BP) was then contacted and asked to provide the required data for the relevant 12-month period.

Light fuel oil

Data on oil consumption were obtained from the sole identifiable (major) user of light fuel oil in the Kaikoura District for the relevant 12-month period. This user was identified through consultation with Kaikoura District Council staff, Kaikoura businesses, and previous research undertaken within the Kaikoura District.

Kerosene

A 'top-down' strategy was employed to obtain the required data. This involved approaching major fuel companies (i.e., BP, Mobil, Caltex, Shell, Challenge) at their head offices. Only one company was willing to provide the requested data. Because of this lack of response it was decided to determine total kerosene consumption based on market share information for oil companies derived from the supplied LAPT data. The kerosene data provided by the sole respondent was then extrapolated (based on market share data) to produce an overall consumption figure.

Coal

Data regarding the consumption of coal in the Kaikoura District was obtained from the 'major' users of coal in Kaikoura. These sources were selected based on consultation with Kaikoura District Council Staff, Kaikoura businesses and coal merchants. These include two local schools and two private businesses within the township. These sources were unable to provide information regarding the grade of coal consumed.

Firewood

Firewood merchants (four) in the Kaikoura District were contacted and asked to provide data on the amount of firewood sold in the relevant 12-month period. These merchants were selected based on listings in the telephone directory, information provided by Kaikoura District Council staff, and referral by the merchants themselves. The required data were provided variously in units of weight and volume. This was problematic, as it was not possible to get an accurate conversion factor for volume (cords) into weight (tonnes). The conversion factor used in this study was based on anecdotal accounts given by a firewood merchant in Kaikoura. This merchant reported that 1,000 tonnes of wood equals (approximately) 500 lots of three-cubic-metre loads of wood. This was then extrapolated to find that one cord of wood (3.624550 m³) equals 2.4 tonnes.

2.2.4   Findings

Electricity

The total amount of electricity supplied by Mainpower NZ (Rangiora) to the Kaikoura District for the relevant 12-month period was 25,878,688 kWh. This information was obtained from the Kaikoura Grid Exit Point (KKA0331).

The total amount of electricity supplied by Marlborough Lines (Nelson) to the Kaikoura District for the relevant 12-month period was 5,137,740 kWh. This information was not measured from a Grid Exit Point. Rather, it was derived from calculating the number of transformers, their average capacities and average loadings. Within the Kaikoura District, Marlborough Lines have 51 transformers with an average capacity of 23 kVA (kilovolt amps) and an average loading of 50per cent (One kWh is what you get when you have a kVA running for 1 hour). The calculation, therefore, is as follows:

Fifty one transformers × 23 kVA × 8760 hours p.a. × 50per cent average loading = 5,137,740 kWh p.a.

Therefore, the total amount of electricity consumed in the Kaikoura District for the relevant 12-month period was 31,016,428 kWh

Petrol

The total amount of petrol (automotive gasoline) consumed in the Kaikoura District for the relevant 12-month period was 2,810,852 litres. This figure was derived from the LAPT data obtained from Information Solutions New Zealand Research Information Centre (Wellington). The Kaikoura District's rating revenue proportion (7.737 per cent) was then applied to this figure.

Diesel

The total amount of diesel consumed in the Kaikoura District for the relevant 12-month period was 3,447,375 litres. This figure was derived from the LAPT data obtained from Information Solutions New Zealand Research Information Centre (Wellington). The Kaikoura District's rating revenue proportion (7.737 per cent) was then applied to this figure.

LPG

The total amount of LPG consumed in the Kaikoura District for the relevant 12-month period was 90 tonnes.

Aviation fuel

The total amount of aviation fuel consumed in the Kaikoura District for the relevant 12-month period was 143,208 litres. This figure was obtained from the sole identifiable supplier of aviation fuel to the Kaikoura District.

Light fuel oil

The total amount of light fuel oil consumed in the Kaikoura District for the relevant 12-month period was 215,870 litres. This figure was obtained from the sole identifiable (major) user of light fuel oil in the Kaikoura District.

Kerosene

The total amount of kerosene consumed in the Kaikoura District for the relevant 12-month period was 657 litres. This figure was obtained by applying the market share data for oil companies derived from the LAPT figures to the kerosene consumption figure provided by the sole respondent.

Coal

The total amount of coal consumed in the Kaikoura District for the relevant 12-month period was 300 tonnes. This information was obtained from (major) users of coal within the Kaikoura District.

Firewood

The total amount of firewood consumed in the Kaikoura District for the relevant 12-month period was 3,107 tonnes. This information was obtained from firewood merchants in the Kaikoura District. This can be broken down as follows: 3,064 tonnes of pine and 43 tonnes of eucalyptus.

The conversion factor used in this study was based on anecdotal accounts given by a firewood merchant in Kaikoura. This merchant reported that 1,000 tonnes of wood equals (approximately) 500 lots of three-cubic-metre loads of wood. This was then extrapolated to find that one cord of wood (3.624550 m³) equals 2.4 tonnes. This conversion factor is problematic, as the accuracy of such a conversion is questionable. However, it was determined that this conversion factor should be used (with a note of caution) due to a lack of alternative conversion factors.

Overall

The total amount of energy consumed in the Kaikoura District for the relevant 12-month period was 416,429 gigajoules (GJ).

The total number of person years per annum (pypa) for the Kaikoura District for the relevant 12-month period was 4,582 pypa (Appendix A).

Therefore, the energy consumption indicator level for the Kaikoura District is: 90.88 GJ / person years per annum.

A breakdown of this data can be seen below in Table 2.

Table 2: Energy consumption in the Kaikoura District

Energy type	Unit	Amount	Gigajoules	%
Electricity	kwh	31,016,428	111,659	26.81
Petrol	Litres	2,810,852	96,136	23.09
Diesel	Litres	3,447,375	133,100	31.96
LPG	Tonnes	90	4,459	1.07
Aviation Fuel	Litres	143,208	4,740	1.14
Light Fuel Oil	Litres	215,870	8,807	2.11
Kerosene (power)	Litres	657	25	0.01
Coal	Tonnes	300	7,170	1.72
Firewood	Tonnes	3,107	50,333	12.09
Total GJ			**416,429**	**100.00**
Person years per annum			4,582	
GJ/per annum			**90.88 GJ / pypa**	

2.2.5   Contacts

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2.2.6 Comparative Australian Case Study Data

Port Douglas: 68.1 GJ per person years per annum

2.2.7 Other TLAs in New Zealand

State of the Environment reports, websites, council headquarters, and the Energy Efficiency Conservation Authority (EECA) were searched and contacted for information regarding energy consumption. EECA advised that very few councils had energy data that had been audited and available to the public. The Environment Canterbury website at www.ecan.govt.nz mentions that in 1999 the energy consumption per capita was 115 gigjoules. The energy consumption from land transport alone was 48.5 gigajoules per capita. These figures do not include tourist numbers.

Manakau City Council State of the Environment Report (1999): 27PJ/yr, residents = 270,000, fuel oil = 1 %, wood = 2 %, coal = 2 %, LPG = 2 %, diesel = 14 %, natural gas = 17 %, electricity = 17 %.

2.3 Greenhouse Gas (CO_2) Production

2.3.1 Indicator Measure

Total carbon dioxide (tonnes) produced by the community per annum / Person years per annum

2.3.2 Indicator Objective

Minimise the net production of greenhouse gas, carbon dioxide (CO2)

2.3.3 Source of Information

The same data were collected for the 4.2 Energy Consumption Indicator were used. The energy calculator supplied by GREEN GLOBE 21 produced the figure for carbon dioxide production. These data can be seen in Table 2.

2.3.4 Findings

> The greenhouse gas production indicator for the Kaikoura District is: 4.85 tonnes / person years per annum.

More detail of the findings for the Kaikoura District's greenhouse gas emissions can be seen in Table 3. These figures were derived from the District's energy consumption data.

Table 3: Greenhouse gas production (CO_2) for the Kaikoura District

Energy type	Unit	Amount	Carbon Dioxide
Electricity	kwh	31,016,428	0
Petrol	Litres	2,810,852	6,345
Diesel	Litres	3,447,375	9,274
LPG	Tonnes	90	265
Aviation Gas	Litres	143,208	322
Light Fuel Oil	Litres	215,870	648
Kerosene (power)	Litres	657	2
Coal	Tonnes	300	652
Wood	Tonnes	3,107	4,731
Total CO2 produced			**22,239**
Person years per annum			**4,582 pypa**
Indicator value			**4.85 Tonnes/pypa**

Note: The GREEN GLOBE 21 energy calculator does not currently have a correct figure for carbon dioxide production from electricity. For this case study the 'hydro' option was chosen although the New Zealand grid electricity is generated from hydro, gas and coal. This also means that a '% renewable' figure could not be calculated.

2.3.5   Contacts

See Section 4.2 (under the contacts section) for information on the energy data.

2.3.6   Comparative Australian Case Study Data

Port Douglas*: 24.5 tonnes carbon dioxide per person per annum*

Note: Port Douglas obtained their figures from the Cities for Climate Protection programme. Sixty percent of the emissions are from cane fires and bagasse burning. If this were excluded, to help with a comparison to Kaikoura District Council the figure would be 10 tonnes per person per annum

2.3.7   Other TLAs in New Zealand

Manakau City Council State of the Environment (1999): CO_2 = 1.47 million tonnes, residents = 270,000.

2.4   Air Quality

2.4.1   Indicator Measure

Indicator measure 1: Total NOx produced by the community (kg) per annum / Total community area (ha)

Indicator measure 2: Total SO_2 (kg) produced by the community (tonnes) per annum / Total community area (ha)

Indicator measure 3: Total PM_{10} produced by the community (kg) per annum / Total community area (ha)

2.4.2 Indicator Objectives

Improve air quality through reducing local emissions from energy production

2.4.3 Source of Information

A spreadsheet with conversion factors calculating emission rates was not available for New Zealand when beginning this project. Landcare Research supplied GREEN GLOBE 21 with New Zealand Traffic Emission Rates from the Ministry of Transport and subsequently a spreadsheet was developed. For each vehicle type and fuel type vehicle registration numbers (Appendix E) and vehicle kilometres travelled was obtained. These figures where then multiplied by the emission factors on the GREEN GLOBE 21 spreadsheet to obtain of emission figure in kg per annum for each of the required emissions. At the time of this study the SO_2 emissions factors had not been developed for New Zealand but factors for Volatile Organic Carbons (VOCs) and carbon monoxide (CO) was available and was recorded. The same energy data collected in the energy consumption indicator are used for this indicator.

2.4.4 Findings

Total community area was reported as 2,048 km². This was then converted to hectares, which equals 204,000 hectares (1 km² = 100 ha.).

Indicator measure 1: Total NOx produced by the community (kg) per annum / Total community area (ha)

The total amount of NOx calculated for the Kaikoura District (the year 2001) was 130,437 kg

> The community area is 204,000 hectares Therefore, the final indicator level is 0.64 kg NOx per hectare.

Indicator measure 2: Total SO_2 (kg) produced by the community (tonnes) per annum / Total community area (ha)

> The final indicator level for SO_2 was not available.

Indicator measure 3: Total PM_{10} produced by the community (kg) per annum / Total community area (ha)

The total amount of PM_{10} calculated for the Kaikoura District (the year 2001) was 15,564 kg

> The community area is 204,000 hectares Therefore, the final indicator level is
> 0.08 kg PM_{10} per hectare

Measure 4: Total CO produced by the community (kg) per annum / Total community area (ha)

The total amount of CO calculated for the Kaikoura District (the year 2001) was 719,085 kg

The community area is 204,000 hectares Therefore, the final indicator level is
3.52 kg CO per hectare

Measure 5: Total VOC produced by the community (kg) per annum / Total community area (ha)

The total amount of VOC calculated for the Kaikoura District (the year 2001) was 101,977kg

The community area is 204,000 hectares Therefore, the final indicator level is 0.50 kgVOC per hectare

2.4.5   Contacts

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2.4.6   Comparative Australian Case Study Data

The Air Quality Indicator was established in the Douglas Shire case study.

2.4.7   Other TLAs in New Zealand

Most New Zealand regional councils conduct air quality monitoring. Since April 2002 Kaikoura has had its PM_{10} levels monitored at 10 minute intervals and this information can be viewed at www.ecan.govt.nz/Air/Air-Monitoring/kaikoura.asp. This reading often exceeds the World Health Organisation 24-hour average of 50 μg/m^3 due to salt spray from the ocean.

It is common for councils to record air quality data in μg/m^3 however Bay of Plenty and Manakau City Council both record using tonnes which is the units used by GREEN GLOBE 21.

Bay of Plenty State of the Environment Report (1998) reported:

Transport PM10 455t

CO 16,848t

NO_x 10,193t

SO_2 1,167t

Particulate Matter: 12per cent from burn-off 323t/yr
Carbon Monoxide: 8per cent from burn-off 2,661t/yr

Manakau City State of the Environment Report (1999)
Aircraft emissions (1993): NO_x 1,641t, CO 2,964t, SO_2 109t

2.5 Water Consumption

2.5.1 Indicator Measure

Total water consumed by the community (kL) per annum / Person years per annum

2.5.2 Indicator Objective

Minimisation of water consumption

2.5.3 Source of Information

The water consumption data were calculated for the entire Kaikoura District. Due to the district's dual urban and rural components, it was necessary to obtain the required data from two distinct sources. These sources were: Connell Wagner (private company), and Environment Canterbury (Regional Council).

A senior engineer from Connell Wagner was able to provide information regarding the total amount of water consumed from Kaikoura Township's urban water supply. A member of the Groundwater Section from Environment Canterbury was able to provide information regarding the allocated amount of water on current consents in the Kaikoura District. This included groundwater and surface water consumption (based on water use consents) for the entire district. This information is collected on an annual basis.

2.5.4 Findings

Kaikoura urban water consumption
According to Connell Wagner, the average daily water flow for the Kaikoura urban area is approximately 2,600 cubic metres. This is broken down as follows:

Leakage = 775 m³ (30 %)

Visitor population = 250 m³ (10 %)

Commercial/ Industrial = 400 m³ (15 %)

Suburban/ Rural = 260 m³ (10 %)

Domestic = 915 m³ (35 %)

At an average water consumption level of 2,600 cubic metres per day, the annual water consumption (for the Kaikoura urban water supply area) would be 949,000 m^3.

Kaikoura District groundwater consumption

Environment Canterbury applies predetermined factors against the allocated consumption to determine actual consumption. These factored figures are based on limited research undertaken by Environment Canterbury and are intended to reflect water use habits and seasonal trends. This research indicates that actual water consumption varies between 40per cent and 60per cent of allocated consumption, and a figure of 50 per cent is therefore applied to determine actual consumption. For water specifically allocated for irrigation purposes, this figure of 50 per cent is further reduced to 25 per cent to reflect 6 months of irrigation (rather than 12 months of irrigation) per annum.

According to Environment Canterbury, 6,601,390 m³ are allocated for consumption (via annual consents process) in the Kaikoura District. Of this, 6,060,460 m³ are specifically allocated for irrigation purposes. The remaining 540,930 m³ per day are categorised as 'mainly community supplies'. Once the above factors are applied, the resultant figure of 1,785,580 cubic metres per annum (1,515,115 m³ for irrigation, 270,930 m³ for community supplies) is obtained for groundwater consumption in the Kaikoura District.

Kaikoura District surface water consumption

According to Environment Canterbury, 14,148,860 cubic metres per annum were allocated for consumption (via the annual consents process) in the Kaikoura District. Of this, 13,998,845 m³ are specifically allocated for irrigation purposes. The remaining 150,015 m³ are not categorised by Environment Canterbury. Once the previously described factors are applied to these consumption figures, the resultant figure of 3,574,719 cubic metres per annum (75,008 m³ not categorised, and 3,499,711 m³ for irrigation) is obtained for surface water consumption in the Kaikoura District.

Overall

Once the water consumption figures for all sources are calculated, the total water consumption for the Kaikoura District is 6,309,299 cubic metres per annum. When converted to kilolitres (kL), this figure remains at 6,309,299 kL (1,000 litres (1 kL) = 1 cubic metre).

The total person years per annum (pypa) for the Kaikoura District are 4,582 (Appendix A), of which 28per cent are tourists. Therefore, the final indicator level for water consumption in the Kaikoura District is:

1376.9 kL / pypa

2.5.5   Contacts

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Email: ecinfo@ecan.govt.nz

2.5.6   Comparative Australian Case Study Data

Port Douglas: 310.0 KL/pypa

2.5.7   Other TLAs in New Zealand

Bay of Plenty State of the Environment Report (1998): reported 620,210 cubic metres per day from rivers and streams and 217,642 cubic metres per day from groundwater. Population of this region (residents) is 224,365 people. Person years per annum are not available for this region and therefore a direct comparison to Kaikoura cannot be made.

2.6   Solid Waste Production

2.6.1   Indicator Measure

Weight of waste landfilled (tonnes) by the community per annum / Person years per annum

2.6.2   Indicator Objective

Reduce the amount of solid waste to landfill

2.6.3   Source of Information

Innovative Waste Kaikoura currently has the contract to operate Kaikoura's only landfill and Resource Recovery Centre. The landfill is a joint venture between the Kaikoura District Council and Kaikoura Waste Busters Trust.

The site takes separated green, construction and demolition, metal, cars, recyclables as well as household rubbish bags and general waste categories. In 2001, they had an impressive 50 per cent diversion rate from landfill.

A comprehensive waste audit was conducted by Innovative Waste during the months of February, March and April 2001. The site does not have a weighbridge so the waste audit results were in cubic metres and then converted to tonnes based on an average of 3.5 m³ per tonne of mixed refuse. The results of the 3 months were used to project yearly figures.

2.6.4   Findings

The total amount of waste to landfill for the Kaikoura District (the year 2001) was 7,250 m³. This was then converted to tonnes. This figure equals 2,071 tonnes.

The number of person years per annum (pypa) is 4,582 (see Appendix A). Therefore, the final indicator level for solid waste production is 0.45 Tonnes / pypa

(Note: This waste was comprised of construction and demolition, kitchen and any non-recyclables. They perceive a 12 per cent increase in solid waste for the year 2002 due to an estimated 15 per cent increase in tourism and a 2 per cent increase in population.)

2.6.5 Contacts

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2.6.6 Comparative Australian Case Study Data

Port Douglas: 0.81 tonnes of waste to landfill per person years per annum

2.6.7 Other TLAs in New Zealand

The Ministry for the Environment has an Environmental Indicators programme to measure the performance of each region. One of the indicators measured is waste to landfill. The information displayed on their website is from 1998 audits and figures for long-term and short-term tourists for each of the districts is not available. However, we can make a comparison based on total waste going to landfill divided by resident population (see Table 4).

Table 4: Waste to landfill data from other regions (1998) compared with Kaikoura (2001)

Year	Area	Tonnes	Resident population	Tonnes/yr/resident
1998	Northland	97,806	1,416,000	0.69
1999	Auckland	990,000	1,175,400	0.84
1998	Waikato	341,050	362,000	0.94
1998	Bay of Plenty	221,649	234,000	0.95
1998	Taranaki	77,470	107,700	0.72
1998	Gisborne	21,329	46,800	0.46
1998	Wanganui/ Manawatu	184,170	232,900	0.79
1998	Hawkes Bay	127,388	146,400	0.87
1998	Wellington	537,203	427,300	1.26
1998	Canterbury	376,282	483,900	0.78
1998	Otago	228,973	188,900	1.21
1998	Southland	196,908	97,300	2.02
			Average	0.96
2001	Kaikoura	2,071	3,483	0.59

Source: adapted from information from the MfE website www.mfe.govt.nz
Note: Since 1999, 45per cent of New Zealand's local authorities have adopted targets of zero waste to landfill, most by 2015; and many have since reduced their waste substantially.

2.7   Resource Conservation

2.7.1   Indicator Measures

Indicator measure 1: Weight of paper purchased / Employee

Indicator measure 2: Weight of biodegradable pesticides purchased / Total weight of pesticides purchased

Indicator measure 3: Biodegradable cleaning chemicals purchased / Total cleaning chemicals purchased

Note: These indicators apply only to the lead agency, which in this case is the Kaikoura District Council.

2.7.2   Indicator Objective

Reduction in consumption of natural resources and impact on ecosystem biodiversity

2.7.3   Source of Information

Indicator measure 1: Weight of paper purchased / Council employees

Kaikoura District Council obtained the data for this indicator by examining purchase invoices for the past year and noting all paper purchased by the council in that period. This includes A4 and A3 paper, coloured, white and recycled, all printed documents such as computer lineflow paper, invoices for rates and other council income sources, books utilised, envelopes, cleaning and toiletry paper and other miscellaneous paper used such as note paper and paper for the franking machine.

Once the total quantity of paper was obtained, each type of paper was weighed to ascertain its weight per unit and this weight was multiplied by the number of units of each item to obtain a total weight. Where there were complete units for an item such as a box of envelopes, the box was weighed to provide a weight per unit. Where units for an item had been partially used, such as open boxes of printed-paper, individual items within the unit were weighed and multiplied by the number in the unit to provide a total weight per unit.

Later correspondence with GREEN GLOBE 21 revealed that 'sheet paper (computer, fax, copier typing); envelopes; notepads, internal office memo paper and advertising brochures' should be included.

The full-time equivalent employee number was obtained by dividing an employees' hours by 40, thus a person that works 20 hours a week is 0.5 of an employee.

Indicator measure 2: Weight of biodegradable pesticides purchased / Total weight of pesticides purchased

Kaikoura District Council contracts the use of pesticides, herbicides and other pest eradication chemicals to external contractors. This measure is therefore one that Kaikoura District Council does not have to monitor. However, the Kaikoura District Council is committed to ensuring that all contractors utilised have an undertaking to use only chemicals that do not adversely affect the environment.

Indicator measure 3: Weight of biodegradable cleaning chemicals purchased / Total weight of cleaning chemicals purchased

The result for this measure was obtained by examining purchase invoices for the past year and noting all purchases of cleaning chemicals made in that period by the council. Only four chemicals were purchased in that period as the majority of the council's cleaning activities are contracted to external contractors. The chemicals that are purchased are for use in the council's administration building for cleaning surfaces, toilets and hands.

Once this list was obtained each bottle of chemical was weighed to establish its weight per unit and the weight, per unit then multiplied by the total number of units purchased. As only one of the four chemicals was recorded on its bottle as 'biodegradable', the manufacturers were contacted and a material safety data sheet obtained for each chemical.

The material safety data sheet records all the components of the chemicals and the safe procedures for handling, storing and disposing of the chemical, but not necessarily the biodegradability. However, these sheets did confirm that Courtesy Cubes were indeed

biodegradable and also identified the citrus hand soap and washing-up liquid as biodegradable.

For the final chemical, Eclipse disinfectant, the material safety data sheet stated that the biodegradability had not been determined; the manufacturer was contacted for a more definitive answer but was not able to provide this. Advice was obtained from a hazardous substances advisor, who advised that no chemical was biodegradable in its entirety, but components within it may be. However, they were not able to advise further on this matter or to suggest who may be able to advise short of a chemist carrying out analysis of each component.

As a result the assumption was made that Eclipse disinfectant was non-biodegradable. The question over a chemical's biodegradability is a problematic one due to the difficulty of ascertaining each chemical's biodegradability and no easy answer was obtained as to how to overcome this issue.

2.7.4   Findings

Indicator measure 1: Weight of per paper purchased / Council employees

Total weight of paper purchased by Kaikoura District Council is 1,917.475 kg
Total number of full time equivalent council employees is 14.5 FTE.

1,917.475 /14.5 = 132.24 kg of paper per council employee

Of this, 75 per cent was writing paper (A4 and A3 etc. and of this 58 per cent was A4 paper), 7 per cent envelopes, 10 per cent printed paper, 7.5 per cent cleaning and toiletry paper and 0.5 per cent 'miscellaneous' paper.

(A4 paper only is 57.5 kg/employee)

Indicator measure 2: Weight of biodegradable pesticides purchased / Total weight of pesticides purchased

Total weight of biodegradable pesticide purchased by Kaikoura District Council is 0.00 kg.
Total weight of pesticides purchased by Kaikoura District Council is 0.00 kg.

0.00/0.00 = 0.00 kg of biodegradable pesticides purchased per total pesticides purchased

Indicator measure 3: Weight of biodegradable cleaning chemicals purchased / Total weight of cleaning chemicals purchased

Total weight of biodegradable cleaning chemical purchased is 27.240 kg
Total weight of cleaning chemical purchased is 43.740 kg

27.240/43.740 = 0.623 kg of biodegradable cleaning chemicals purchased per total cleaning chemical purchased.

2.7.5 Contacts

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2.7.6 Comparative Australian Case Study Data

Port Douglas: 60.6 kg per paper per employee (A4 only)

2.7.7 Other TLAs in New Zealand

No information is readily available for paper consumption of other councils, but information will increase in the future as other TLAs take up GREEN GLOBE 21 or include it as an indicator in their Triple Bottom Line reporting. The Christchurch City Council has an unpublished figure of 14.6 reams per staff member per year (A4 paper only), which is equivalent to 36.5 kg paper per employee per year. Many councils have looked into pesticide use in their region or division but not the actual amount the council uses for their total operation. It is common for activities requiring pesticide use to be contracted out.

2.8 Biodiversity

2.8.1 Indicator Measure

Native (or regenerated native) vegetation area designated for conservation in the community's region (ha) / Total community area

2.8.2 Indicator Objective

Conserve native habitats and biodiversity

2.8.3 Source of Information

The required biodiversity data for the Kaikoura District were obtained from the Kaikoura Field Centre of the Department of Conservation. The Kaikoura Field Centre Manager was able to provide an overall figure (and breakdown of this figure) that represented the total amount of land (hectares) that fulfilled the requirements of the biodiversity indicator.

In addition to the Department of Conservation, it was also necessary to consult with the Kaikoura District Council and the Queen Elizabeth II National Trust for Open Spaces in New Zealand to ensure that all relevant 'biodiversity' land areas within the Kaikoura District were considered.

2.8.4 Findings

According to the Department of Conservation, the total amount of conservation land in the Kaikoura District that meets the requirement of the biodiversity indicator is 64,594 hectares. This land can be broken down as follows:

Conservation Stewardship land =   22,510 ha

Clarence Reserve land =   30,000 ha

Scenic Reserves =	11,063 ha
Nature Reserves =	1,021 ha

Additional Department of Conservation land not considered to meet the requirements of the biodiversity indicator includes: (1) Marginal Strips, (2) Government Purposes Reserves, (3) Historic Reserves, (4) Recreation Reserves, and (5) a portion of the Clarence Reserve land.

The Kaikoura District Council was contacted as they have a rating relief policy for biodiversity areas. Under this policy, ratepayers can receive a 50 per cent remission on rates if the land they own meets two criteria. These include:

(1). The land is owned or occupied for conservation or preservation purposes and not used for private profit, and

(2). It is land that is subject to an open space covenant by the Queen Elizabeth II National Trust, or a heritage covenant by the Historic Places Trust, or conservation covenant under the Reserves or Conservation Acts, or is a Māori reservation for natural or cultural conservation purposes.

According to the Kaikoura District Council, this rating relief policy has been in place within the District for 14 months, and to date nobody has made an application. Therefore, the total land area able to be considered under this policy is nil.

The Queen Elizabeth II National Trust for Open Spaces in New Zealand was contacted as they provide assistance (through administering covenants) for the voluntary protection of conservation areas on privately owned land. According to this organisation, no such covenants exist currently within the Kaikoura District.

Based on this information, the total area of land within the Kaikoura District that meets the requirements of the biodiversity indicator is 64,594 hectares.

The total land area within the Kaikoura District is 2,048 km². When converted, this equals 204,800 ha (1 km² = 100 ha.).

> Therefore, the final indicator level for the Kaikoura District is 0.32 ha native (or regenerated native) vegetation designated for conservation per hectare of district area.

2.8.5   Contacts

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Kaikoura
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Queen Elizabeth II National Trust
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Ph. (04) 472-6626
Fax. (04) 472-5578
Website: www.nationaltrust.org.nz

2.8.6   Comparative Australian Case Study Data

Port Douglas: 78 per cent of all land within the Douglas Shire region is protected.

2.8.7   Other TLAs in New Zealand

Timaru DC sent email and replied with 519,420 ha of indigenous forest, which is 54 per cent of total area.

Bay of Plenty State of the Environment Report (1998): 12,231 km^2 (50% of total area indigenous).

Manakau City State of Environmental Report (1999): 21 per cent of their total area of 55,200 ha is native vegetation.

Waikato State of Environment Report (1998): 28 per cent native (includes scrub, tussock, mangroves and wetlands). 20 per cent if forest only is counted.

2.9   Waterways Quality

2.9.1   Indicator Measure

Samples passing quality standards per annum / Total samples tested per annum

2.9.2   Indicator Objective

Improve the quality of surface water, groundwater and aquatic habitats (including the sea).

2.9.3   Source of Information

The water quality data that were collected for this indicator only included results from monitoring that is routinely carried out in the Kaikoura District Council region from 1 July 2001 to 30 June 2002. The Canterbury Regional Council (Environment Canterbury/ECAN) monitors water quality for Kaikoura. Connell Wagner engineering consultants have the contract to manage the wastewater treatment pond in Kaikoura and supplied the effluent data (see Table 5 for details of test sites).

Table 5: Waterways quality test sites

Type of waterway	Name	Site Number	Source of Data
River Water	Kowhai River at SH1	CRC303270	ECAN
	Kowhai River at Kowhai Ford	CRC303271	
	Kowhai River at base of Mt Fyffe	CRC303272	
	Lyell Creek at SH1	CRC303273	
	Lyell Creek at Mills Road	CRC303274	
	Lyell Creek at Mt Fyffe Road	CRC303275	
	Lyell Creek at mouth	CRC303476	
Beach (recreational)	Gooches Beach	CRC303154	
	Armers Beach	CRC303155	
	South Bay	CRC303156	
	Lyell Creek Mouth	CRC303476	
Ground Water	Well O31/0121	CRC303330	
	Well O31/0156	CRC303331	
	Well O31/0096	CRC303332	
	Well O31/0127	CRC303335	
	Well O31/0107	CRC303337	
	Well O31/0219	CRC303338	
	Well O31/0196	CRC303340	
Effluent	Treatment ponds		Connell Wagner

These sites and the individual well locations are shown in Appendix D.

Data supplied by ECAN was then compared to the relevant water quality standards to determine if they had passed. The standards used are as follows:

Groundwater: Drinking Water Standards for New Zealand 2000, Ministry of Health
Beach (recreational): Recreational Water Quality Guidelines 1999, Ministry of Health / Ministry for the Environment

River water: ANZECC Guidelines for Fresh and Marine Water, 2001

Gary Boot of Connell-Wagner supplied the total number of water quality tests carried out as well as the number passing the dissolved oxygen test. This information was used directly for the indicator. The dissolved oxygen level is monitored on Mondays, Wednesdays and Fridays every week of the year. The consent for the treatment plants states that 'The concentration of dissolved oxygen of effluent in the oxidation pond shall be greater than $2g/m^3$ as measured at 0900 hours on any day'. This was used by Gary to assess the pass or failure of each test.

2.9.4   Findings

River water
Freshwater rivers = 76 per cent pass rate

Table 6: River water quality findings

Site_ID		pH	Faecal Coliform CFU/100mL	Turbidity NTU	Nitrate and Nitrite mg/L	Total Phosphorus mg/L	Dissolved Reactive Phosphorus mg/L	Total Nitrogen mg/L	Dissolved Oxygen mg/L	Dissolved Oxygen Saturation mg/L
	Standards	*6.0-8.5*	*≤1000*	*≤5*	*0.10-0.75*	*≤0.1*	*0.01-0.1*	*≤1*	*≥6*	*≥80*
CRC303270		7.9	900	240	<0.01	0.59	0.009	0.16	12.5	104.5
CRC303270		8	18	8.1	0.081	0.021	0.004	0.11	9.9	102
CRC303270		8.8	9	0.5	0.24	0.15	0.01	0.56	10.7	119.1
CRC303270		8.3	27	0.3	0.089	<0.008	0.003	0.1	11.6	104.5
CRC303271		8.2	18	250	0.21	0.68	0.007	0.3	12.3	105
CRC303271		8.3	<10	9.9	0.019	0.019	0.003	0.11	10.5	105.2
CRC303272		8.1	36	140	0.13	0.35	0.024	0.14	13.4	110.8
CRC303272		8.2	<10	21	0.034	0.047	0.004	<0.08	10.5	102.4
CRC303272		8.6	<10	1	0.15	0.15	<0.005	0.18	10.3	110.9
CRC303272		8.1	20	0.3	0.12	<0.008	0.007	0.14	12.6	101.3
CRC303273		7.5	850	4.6	1.3	0.094	0.009	1.6	11.2	97.1
CRC303273		8.4	320	1.6	0.78	0.057	0.02	0.92	11.7	120.6
CRC303273		8	680	1.5	0.28	0.15	0.03	0.68	9.9	99.9
CRC303273		7.9	430	1.7	0.62	0.032	0.024	0.73	9.7	83.2
CRC303274		7.5	300	4.4	1.5	0.063	0.029	1.8	12	108.9
CRC303274		7.9	660	0.8	1.3	0.049	0.014	1.5	10.7	108
CRC303274		7.8	2500	3.5	0.17	0.16	0.026	1.1	10.4	104.8
CRC303274		7.8	580	8	0.92	0.054	0.021	1.2	11.16	98.8
CRC303275		7.7	160	24	0.74	0.077	0.02	1.6	11.1	97.4
CRC303275		7.3	8500	4.1	1.4	0.14	0.05	1.8	9.5	96.5
CRC303275		7	2600	1.2	0.92	0.14	0.038	1.1	8.5	85.4
CRC303275		7.1	27	0.4	1.2	0.014	0.017	1.3	8.9	81.6
CRC303476		7.5	510	5.6	1.4	0.093	0.024	1.4	11.1	93.9
CRC303476		7.9	300	1.5	0.76	0.051	0.016	0.85	11	110.6
CRC303476		7.7	640	2	0.2	0.14	0.041	0.47	10	98.7
CRC303476		7.9	370	1.1	0.63	0.038	0.025	0.86	11.7	101.1
Pass		**25**	**23**	**17**	**11**	**16**	**17**	**16**	**26**	**26**
Fail		**1**	**3**	**9**	**15**	**10**	**9**	**10**	**0**	**0**
Total		**26**	**26**	**26**	**26**	**26**	**26**	**26**	**26**	**26**
Pass/total		**0.96**	**0.88**	**0.65**	**0.42**	**0.62**	**0.65**	**0.62**	**1.00**	**1.00**
Overall Pass/total	**177/234 0.76**									

Groundwater

Groundwater = 75 per cent pass rate

Table 7: Groundwater quality findings

Site_ID		Faecal Coliforms CFU/100mL	pH	pH_1	E coli MPN/100mL	Dissolved Oxygen mg/L	Manganese mg/L	Chloride mg/L	Sulphate mg/L	Iron mg/L	Ammonia Nitrogen mg/L	Nitrate Nitrogen mg/L	Sodium mg/L	Fluoride mg/L	Arsenic mg/L
	Standards	*1*	*7.0-8.5*	*7.0-8.5*	*1*	*3-4*	*0.5*	*250*	*250*	*0.2*	*1.5*	*50*	*200*	*1.5*	*0.01*
CRC303330		<1	6.3	6.6	<1	8.2	<0.04	6.6	6.6	<0.12	0.007	0.8	9		
CRC303331			7.1	8		0.7	0.51	4.8	<0.05	1.6	0.1	0.1	27	0.28	
CRC303331		<1	7.1	7.3	<1	0.7	<0.04	4.8	0.6	1.4	0.31	<0.025	27		0.059
CRC303331			7.1	7.1		0.2	0.55	4.9	<0.05	1.8	0.28	<0.02	27	0.28	
CRC303332		1	6.5	6.7	1	2.7	<0.04	19	31	<0.12	<0.005	6	15		
CRC303335		1	6.8	6.9	<1	6.6	<0.04	5.7	14	<0.12	<0.005	0.1	6		
CRC303337		<1	6.9	7	<1	36	<0.04	4.7	13	<0.12	<0.005	1.1	7		
CRC303338		<1	6.8	7.1	<1	1.4	<0.04	3.6	16	<0.12	<0.005	0.2	8		
CRC303340		1	7.2	7.1	<1	3.2	<0.04	7.5	13	0.55	<0.005	1.7	8		
Pass		**7**	**4**	**6**	**7**	**1**	**7**	**9**	**9**	**5**	**9**	**9**	**9**	**2**	**0**
Fail		**0**	**5**	**3**	**0**	**8**	**2**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**1**
Total		**7**	**9**	**9**	**7**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**9**	**2**	**1**
Pass/total		**1.00**	**0.44**	**0.66**	**1.00**	**0.11**	**0.78**	**1.00**	**1.00**	**0.56**	**1.00**	**1.00**	**1.00**	**1.00**	**0**
Average Pass/total		**0.75**													

Beach (recreational) water

Beach water = 79 per cent pass rate

Table 8: Beach (recreational) water quality findings

Site ID	Enterococci CFU/100mL	Ecoli MPN/100mL
Standards	≤277	
CRC303154	<2	
CRC303154	<2	
CRC303154	22	
CRC303154	10	
CRC303154	2	
CRC303154	3	
CRC303154	<2	
CRC303154	<2	
CRC303154	20	
CRC303154	7	<10
CRC303155		
CRC303155	8	
CRC303155	10	
CRC303155	<10	
CRC303155	10	
CRC303155	<2	
CRC303155	4	
CRC303155	<2	
CRC303155	13	
CRC303155	2	
CRC303156	<2	
CRC303156	<2	
CRC303156	<2	
CRC303156	<10	
CRC303156	<2	
CRC303156	<2	
CRC303156	<2	
CRC303156	<2	
CRC303156	<2	
CRC303156	180	
CRC303476		1200
CRC303476		1200
CRC303476		560
CRC303476		310
CRC303476		280
CRC303476		340
CRC303476		200
CRC303476		630
CRC303476		200
CRC303476		620
CRC303476		350

CRC303476		350
CRC303476		450
CRC303476		260
CRC303476		84
CRC303476		460
CRC303476		530
Pass	**29**	**8**
Fail	**0**	**10**
Total	**29**	**18**
Pass/total	**1.0**	**0.44**
Average	**37/47**	
Pass/total	**0.79**	

Individual pass rate
Freshwater Rivers = 76 per cent pass rate
Groundwater = 75 per cent pass rate
Beach = 79 per cent pass rate
Effluent = 74 per cent pass rate

Overall

Samples passing quality standards per annum / Total samples tested per annum = 438/553
= 79 per cent pass rate

2.9.5 Contacts

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2.9.6 Comparative Australian Case Study Data

Port Douglas: Overall 84 per cent pass rate

Note: In the above reports the data was displayed in terms of the percentage of samples failing. The above data has been shown in a way consistent with the current GREEN GLOBE 21 Community Standard.

2.9.7 Other TLAs in New Zealand

The Ministry for the Environment indicators programme reports water quality data. This is available on the MfE website at www.mfe.govt.nz. This site does not display the percentage

pass rate so the information below on Table 8 was calculated by dividing the number of passed tests by the total number of tests.

Table 9: Percentage of water quality samples passing water quality standards in various South Island TLAs

Area	Time	River	Ground	Beach
Timaru	12/00 to 02/01			94%
Banks Peninsula	11/00 to 01/01			95%
Picton	11/00 to 30/01			97%
Tasman Bay	11/00 to 01/01			97%
Golden Bay	11/00 to 01/01			100%

Bay of Plenty State of the Environment Report (1998) use an Environmental Quality Index using an excellent, good, moderate, poor scale based on NERMN classes. The results are as follows:

Rivers	Number of rivers in this class	NERMN class
Bacterial Quality	14	Excellent
	7	Good
	9	Moderate
	6	Poor
	2	Degraded

Bathing Water	Number of beaches in this class	NERMN class
Bacterial Quality	17	Excellent
	6	Good
	5	Moderate
	4	Poor
	6	Degraded

Waikato State of Environment Report (1998): Groundwater 87.5 per cent per annum and beach (recreational water) 64 per cent per annum.

2.10   Travel and Tourism

2.10.1   Indicator Measure

Number of environmentally accredited Travel and Tourism operations / Total number of Travel and Tourism operators with business addresses in the community.

2.10.2   Indicator Objective

Assess the contribution that the local Travel and Tourism industry is making to protect the community's environment and resources.

2.10.3   Sources of Information

The Kaikoura Information Centre provided a list of current tourism operators, restaurants and accommodation providers in Kaikoura.

2.10.4 Findings

Kaikoura has 141 Travel and Tourism related operations and currently none of them has environmental accreditations but some have enrolled in the GREEN GLOBE 21 Benchmarking stage. Therefore this indicator is 0/141= 0

2.10.5 Contacts

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www.kaikoura.co.nz

2.10.6 Comparative Australian Case Study Data

Port Douglas: 12per cent (National Ecotourism Accreditation Programme). Note: NEAP is not third-party audited although there are plans to do so in the future.

2.10.7 Other TLAs in New Zealand

There are currently no GREEN GLOBE 21 certified or Enviro-Mark NZ™ accredited Travel and Tourism operations within New Zealand. However, there are 8 vineyards that have been certified with ISO14001.

Chapter 3
Optional Community Selected Indicators

Kaikoura District Council chose not to monitor these indicators, as it proved too difficult to obtain the information required. Within the GREEN GLOBE 21 booklet, it states that the indicator should be of particular relevance to the community and it was considered that the three choices provided were of no particular relevance to Kaikoura.

3.1   Renewable Energy Consumption

3.1.1   Indicator Measure

Renewable energy consumption per annum / Total energy consumption per annum

3.1.2   Indicator Objective

Increase the amount of renewable energy consumed

3.1.3   Source of Information

The Kaikoura District Council was consulted regarding this indicator.

3.1.4   Findings

The Kaikoura District Council's proposed plan encourages the use of renewable energy sources, meaning that in general this is a permitted activity within the District and is therefore not a monitored activity. The only instance where renewable energy would be monitored is where it has an 'effect' on the environment, in which case it would require a resource consent and this is recorded within the property file, each application being assessed on a case-by-case basis.

As a result there is no easy way to monitor this within Kaikoura short of visiting every property in the territorial local authority (TLA) area to look for renewable energy sources. It is also quite likely that this will be the same in most other TLA's within New Zealand.

3.1.5   Contacts

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3.1.6   Comparative Australian Case Study Data

Port Douglas: 0.005per cent renewable energy consumed

3.1.7   Other TLAs in New Zealand

No relevant information pertaining to this benchmarking indicator was identified for other TLAs in New Zealand.

3.2 Renewable Energy Production

3.2.1 Indicator Measure

Renewable energy production within community per annum/ Total energy consumption per annum

3.2.2 Indicator Objective

Increase the amount of renewable energy produced

3.2.3 Source of Information

The Kaikoura District Council was consulted regarding this indicator.

3.2.4 Findings

The findings of this indicator are the same as the findings in Section 5.1 (Renewable energy consumption). See Section 5.1 for details.

3.2.5 Contacts

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3.2.6 Comparative Australian Case Study Data

Port Douglas: 0.007 per cent renewable energy produced

3.2.7 Other TLAs in New Zealand

No relevant information pertaining to this benchmarking indicator was identified for other TLAs in New Zealand.

3.3 Local Consumable Products

3.3.1 Indicator Measure

Value of consumable products purchased produced locally (within the community) / total value of consumable products purchased per annum

3.3.2 Indicator Objective

Increase the amount of locally produced consumable products purchased

3.3.3 Source of Information

This is not applicable, as Kaikoura did not measure this optional community-selected indicator.

3.3.4 Findings

The value of locally produced consumable products proved to be equally as difficult to measure, as there is presently no mechanism for collecting these data, and would require the visiting of every outlet of consumable products in the district.

It is possible that this measure will be of more relevance where a community produces a lot of its own consumable products. But for a territorial local authority such as the Kaikoura District, which locally produces only small quantities of consumable products and has limited capacity for increasing production in future years, the result would have little relevance.

3.3.5 Contacts

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3.3.6 Comparative Australian Case Study Data

Port Douglas: Not measured consumable products purchased

3.3.7 Other TLAs in New Zealand

No relevant information pertaining to this benchmarking indicator was identified for other TLAs in New Zealand.

Chapter 4
Optional Community-Specified Indicator

4.1   Community-Specified Environmental Indicator

The community-specified indicator allows communities to measure and benchmark aspects of the community that are considered to be of environmental and social importance. With this in mind, Kaikoura (through the Kaikoura District Council) has elected to measure an environmentally based indicator.

4.1.1   Indicator Measure

Number of truck accidents in the Kaikoura District involving a chemical spill per annum / Total number of truck accidents in the Kaikoura District per annum

4.1.2   Indicator Objective

Reduce the amount / proportion of vehicle accidents involving chemical spills

4.1.3   Source of Information

The figure for the number of truck accidents involving chemical spills was obtained (by the Kaikoura District Council) from the Kaikoura branch of the New Zealand Fire Service. This service attends every accident that occurs on State Highway 1 and keeps detailed records of each accident and chemicals, if any, that were involved. The figure for the total number of truck accidents within Kaikoura District was obtained (also by the Kaikoura District Council) from the Kaikoura representative of the Land Transport Safety Authority, who holds records on all accidents in the Kaikoura District. The New Zealand Fire Service confirmed the accuracy of this figure.

4.1.4   Findings

The total number of truck accidents in Kaikoura District is 11.

The total number of truck accidents in Kaikoura District involving a chemical spill is 5.

Therefore, the indicator level for Kaikoura' environmentally based optional specified indicator is: 0.45 truck accidents involving chemical spills per truck accident per annum

4.1.5   Contacts

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4.1.6   Comparative Australian Case Study Data

Port Douglas: No reported figure

4.2 Community-Specified Social Indicator

The community-specified indicator allows communities to measure and benchmark aspects of the community that are considered to be of environmental and social importance. With this in mind, Kaikoura (through the Kaikoura District Council) has elected to measure a socially based indicator.

4.2.1 Indicator Measure

Degree of community cohesion, acceptance of environmentally based initiatives, and effectiveness of participatory processes within the Kaikoura District

4.2.2 Indicator Objective

Improve the quality of life and social wellbeing of the Kaikoura community.

4.2.3 Source of Information

The relevant data pertaining to Kaikoura's optional community specified social indicator were sourced from the Kaikoura District Council's (KDC) Community Survey (telephone survey). Although only in its second year of existence, it is intended that the community survey will be conducted on a regular (annual) basis and as such was considered to be the most appropriate and efficient means of obtaining information from Kaikoura community residents. The questions presented in this survey were derived primarily through consultation with key District Council staff members, the KDC's Community Services Committee and relevant academic literature pertaining to the concept and measurement of community wellbeing.

4.2.4 Findings

After some discussion, the issues suggested by the Kaikoura District Council's Community Services Committee included: the decrease in the number of subjects taught at the local high school; the need for a database that includes all services, sports and recreation groups and their contacts; and the concern that the local community lacks a certain degree of social cohesion. It was also noted that current work of Ngati Kuri (the local Maori iwi) on environmental monitoring of native species of flora and fauna in the Kaikoura area might be suitably incorporated into the Green Globe 21 Benchmarking programme. Similarly, their work on addressing social concerns within the Maori community indicates that they have much experience in dealing with local social issues.

Another useful local information source was the Kaikoura District Council's Tourism Strategy for the Kaikoura District (see Appendix C). In the course of developing this strategy, the Kaikoura Tourism and Development Advisory Board spent considerable time working with stakeholders within the community to gain an understanding of the needs and aspirations of the community as a whole. This research resulted in the development of a series of core values that were deemed to be of significance to the community of Kaikoura. These core values served to form the foundation for the policies contained within this strategy document, and as such have provided an invaluable resource for developing the eventual community specified social indicator(s) for Kaikoura.

The KDC's Community Survey was conducted (by KDC staff) via telephone during the months of March – April 2002. One-hundred-and-fifty (150) Kaikoura residents were contacted and invited to participate in this study. These residents were selected (by KDC staff) as they had participated in the inaugural community survey in 2001. Initial selection of

these participants had been based on a random sample obtained from Kaikoura telephone listings in the Christchurch telephone book. A total of 85 valid responses were obtained by the 2002 survey, which provided an overall response rate of 57 per cent. This figure represents 2.4 per cent of the Kaikoura District's resident population (pop. 3,483) at the time the survey was conducted. The results of the community survey that pertain to the present study can be seen below in Table 10 and Table 11.

Table 10: First set of Kaikoura community survey responses

In the last year, have you done any of the following?	**Yes**	**No**	**n**
Worked on conservation activities such as tidying rubbish or native tree planting around Kaikoura	16%	84%	85
Worked to improve Lyell Creek or other local waterways	6%	92%	83
Contributed towards the conservation of the local marine environment or marine animals	22%	74%	84
Walked or cycled around Kaikoura rather than using your car	67%	32%	85
Do you minimised your rubbish by recycling regularly	91%	9%	85
Taken measures to conserve water	84%	13%	85
Worked in any local voluntary organisation or club?	50%	50%	84
Attended public meetings about any issue	36%	56%	80
Worked on or with any council committees on any issue	15%	84%	84
Written a submission on any issue	24%	74%	84
Contacted the council with complaints or positive feedback	36%	56%	78
Do you belong to any organisations or clubs that have environmental goals?	29%	71%	85

Table 11: Second set of Kaikoura community survey responses

Do you agree or disagree with the following statements?	Agree	Neutral	Disagree	n
Your local council has an open and participatory decision making process	39%	32%	29%	85
There's no point in participating because it has no effect	19%	18%	64%	85
I don't participate in making decisions about local issues and leave it to those who are interested.	22%	11%	64%	85
I would participate in local issues the council is working on, but I don't know how	25%	15%	59%	85
Kaikoura is a close, supportive community	58%	21%	21%	85
Kaikoura people work well together to deal with local issues	46%	23%	31%	85

It is reasonable to expect that a similar non-response bias will occur next time the survey is conducted. With this in mind, such non-response bias may serve to act as an additional measure of the participatory processes associated with local government and community residents in Kaikoura.

4.2.5   Contacts

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Chapter 5
Discussion

5.1   Sustainability Policy

The Kaikoura District Council (and the Kaikoura District itself) has had a distinct advantage over other potential GREEN GLOBE 21 benchmark communities insofar as the processes necessary to produce the prescribed sustainability policy have been in place for a number of years. Kaikoura's advantage has been as the result of an ongoing and long-standing association with Lincoln University's Tourism, Recreation Research and Education Centre (TRREC). Through this association, Kaikoura has been the subject of a comprehensive case study on the impacts associated with tourism within the district (with a special focus on the township itself).

An output of this association was the development (with the assistance of technical expertise from TRREC) of a Kaikoura tourism strategy and associated policies. This has provided Kaikoura with a significant advantage (or 'head start') in the benchmarking process over other prospective benchmark communities. Consequently, future prospective benchmark communities may struggle to overcome (within the prescribed benchmarking time frame) the inherent institutional impediments associated with the development of tourism-related sustainability strategies and policies. Furthermore, the ease with which the Kaikoura District Council was able to develop an appropriate sustainability policy may serve to mask the potential issues and problems that benchmark communities in the future may experience. From this perspective, Kaikoura's experience in this regard may not be an accurate reflection of issues associated with the development of this benchmarking indicator.

5.2   Energy Consumption

The data collection for the energy consumption indicator proved to be problematic for several reasons. Foremost in this respect were the petrol and diesel figures obtained through the Local Authority Petroleum Tax (LAPT) data. As described in Section 2.2, the figures obtained for the Kaikoura District are based on LAPT figures for the Marlborough Region. From this, Kaikoura's 'share' is based on the revenue generated from local authority rates (as a proportion of total rates revenue for the wider Marlborough Region), rather than the actual amount of fuel purchased in the Kaikoura District. This then leads to another issue associated with petrol and diesel consumption: the data obtained are a reflection of fuel *purchased*, rather than fuel consumed in the district. This serves to further weaken the accuracy of the data obtained. Unfortunately, a lack of response from the oil companies that sell fuel in the Kaikoura District necessitated such an approach.

Similar issues of accuracy were encountered when collecting electricity consumption data. These stem from the Kaikoura District being supplied with electricity by two separate companies, and was compounded by the rural and isolated nature of a large proportion of the district outside of the Kaikoura Township itself. One company, Mainpower New Zealand, was able to provide accurate Grid Exit data. However, the other company, Marlborough Lines, was only able to provide an estimated figure based on the number of transformers, their average capacities and average loadings. This serves to weaken the accuracy of Kaikoura's energy consumption data.

Likewise, similar problems with accuracy were encountered with data provided by private organisations and businesses. These were the result of a perceived distrust of the GREEN GLOBE 21 objectives (e.g., '…why do you want to know?, who are you going to tell?, are you one of these Greenies?' etc.). This response was not unexpected, as private organisations and businesses are often reluctant to divulge 'sensitive' information to outside parties. The Kaikoura District Council's involvement in, and close association with, the benchmarking process served to further heighten the respondents' reluctance to divulge accurate data (e.g., '…if the Council find out, will they charge me more on my rates or levies?' etc.). Most preferred to provide a 'rough estimate' rather than actual figures. This was especially true of firewood merchants in the Kaikoura District, most of whom provided an 'off-the-cuff' figure. This was compounded further by the conversion factor (from cords to tonnes) provided by the firewood merchants. Unfortunately, no other conversion factors were able to be sourced, so the provided conversion factor was applied to the firewood figures.

As a consequence of the above issues, the accuracy of data collected is questionable. However, given the constraints encountered (i.e., lack of response, incomplete data, inaccurate data provided) the data presented for this benchmarking indicator must be regarded as the best-fit, or best available, energy consumption data.

5.3   Greenhouse Gas Production

The data calculated for greenhouse gas production in the Kaikoura District was derived from the energy consumption data. As a consequence of this, the issues and concerns raised in Section 3.2 (Energy Consumption) must also stand for the greenhouse gas data. Notwithstanding this, a concern relating to the greenhouse gas figures based on petrol and diesel consumption should be raised. These data reflect an implicit assumption that all the vehicle fuel purchased within the Kaikoura District is consumed within the district itself. Given the geographical context of the district (i.e., Kaikoura experiences large traffic volumes travelling through the district towards Christchurch and Picton), coupled with the way in which these data were derived, means that the accuracy of the greenhouse gas production figures is weakened.

Another consideration associated with the greenhouse gas production figure is the current inability of the GREEN GLOBE 21 energy calculator to accurately reflect the energy generation sources that make up New Zealand's electricity production. This means that GREEN GLOBE 21 considers hydro-generated electricity is 100 per cent renewable, and therefore produces zero greenhouse gases. However, New Zealand's electricity is generated via a number of sources (e.g., hydro, coal, gas), the 'mix' of which varies depending on factors such as peak demand, seasonal variations etc. As a consequence of this, the greenhouse gas production figure obtained does not accurately reflect actual production for the Kaikoura District.

5.4   Air Quality

The air quality indicators for GREEN GLOBE requires that the total kilograms of nitrogen oxides (NOx), sulphur dioxide (SO_2) and particulates (PM_{10}) produced in the Kaikoura District be divided by the total area of the district. These data are, in turn, derived from the energy consumption data collected for vehicle types, fuel types, and vehicle kilometres travelled. A figure for SO_2 emissions was not calculated for Kaikoura however, Volatile Organic Carbons (VOCs) and Carbon Monoxide (CO) was recorded.

Based on the requirements of the air quality benchmarking indicator figures were calculated but it has proved impossible to arrive at an accurate figure for the Kaikoura District. The primary reason for this has been the lack of available data regarding whether each vehicle type registered in Kaikoura was driven primarily on urban, surburban, or open roads. Another problem associated with this benchmarking indicator is the lack of an identifiable source of information regarding the emissions rates for sulphur dioxide (SO_2) for New Zealand vehicles and driving conditions. To overcome this impediment, it may be necessary for Australian SO_2 emissions rates to be applied to the Kaikoura data. It was possible, however, to obtain the breakdown of vehicle registration data for the Kaikoura District.

Consequently, it is unclear how the above-mentioned issues could be addressed/overcome in the future. Notwithstanding this, it is clearly evident that any New Zealand community that wishes to participate in the GREEN GLOBE 21 benchmarking process will encounter these impediments.

5.5   Water Consumption

The water consumption data for the Kaikoura District proved to be relatively easy to collect. As described in Section 2.5 (Water Consumption), the data were obtained from two separate sources: Connell Wagner and Environment Canterbury.

The data provided by Connell Wagner appear to be an accurate measurement of water consumed within the Kaikoura Township's town water supply. The remainder of water consumed within the district was obtained from Environment Canterbury. These data were based on the volume of water requested and approved for use via the annual water-use consent process. Dairy farms and the fishing industry being major water uses in Kaikoura. The accuracy of this portion of the Kaikoura District's water consumption is questionable, as the data were calculated according to several factors. These factors were based on a combination of seasonal (and therefore irrigation use) variations and limited research undertaken by Environment Canterbury. Nevertheless, the resultant figures were the most accurate available. Taken as a whole, the accuracy of the overall water consumption indicator level is weakened as a consequence of these estimated use patterns.

The issues associated with accuracy of data are likely to be confronted by future GREEN GLOBE 21 benchmarking communities that share Kaikoura's geographical characteristics (i.e., a mix of urban and rural contexts). Communities that constitute only urban areas with no associated rural sector are unlikely to encounter these above-mentioned issues relating to accuracy of water consumption data.

5.6   Solid Waste Production

The solid waste production data calculated for the Kaikoura District proved to be relatively easy to collect, given that there is only one landfill / refuse station within the district. Innovative Waste Kaikoura currently has the contract to operate Kaikoura's only landfill and Resource Recovery Centre. The landfill is a joint venture between the Kaikoura District Council and Kaikoura Waste Busters Trust. The site takes separated green, construction and demolition, metal, cars, recyclables as well as household rubbish bags and general waste categories. In 2001 they had an impressive 50 per cent diversion rate from landfill.

One limitation of the data collection, however, was the lack of obtainable data regarding the amount of solid waste produced by the rural sector that does not get delivered to the landfill in Kaikoura. Specifically, there is no way to get an accurate reflection of actual solid waste produced other than to survey farmers within the district and request that this be measured on a regular basis. It is unlikely that such a request would be received with much credence by the rural community, given the existing work-related demands.

Notwithstanding the above-mentioned concern, the Kaikoura District is regarded by many to be a 'leader' in solid waste reduction and recycling practices. Given the existing commitment to waste reduction, and the up-take of these principles by residents in the town, it is likely that Kaikoura will be able to reduce this indicator level in the future.

5.7   Resource Conservation

The resource conservation data for the Kaikoura District was calculated according to figures derived from three separate 'programmes'. These areas were concerned with a reduction in consumption of natural resources and impact on ecosystem biodiversity by the Kaikoura District Council. The indicator measures included: the amount of paper purchased, the amount of biodegradable pesticides purchased, and the amount of biodegradable cleaning chemicals purchased by the Kaikoura District Council.

The Kaikoura District Council had no difficulty in calculating the amount of paper purchased for the relevant period. However, the council, like many territorial authorities in New Zealand, contracts out many of its core service responsibilities to private contractors. This includes spraying contracts for pesticides etc. As a consequence of this, the amount of pesticides purchased was not measured, as it does not apply to the council. The Kaikoura District Council does, however, have a stated commitment to ensuring that all contractors used by Kaikoura District Council have an undertaking to use only chemicals that do not adversely affect the environment.

The third component of the resource conservation benchmarking indicator (biodegradable cleaning chemicals) proved to be somewhat difficult to measure accurately. The major concern was the result of the current lack of a comprehensive chemical biodegradability database. Many of the assumptions regarding the biodegradability of the cleaning chemicals in question were based on information provided on product labels and advice received from hazardous substances advisors. The question over a chemical's biodegradability is a problematic one due to the difficulty of ascertaining each chemical's biodegradability. This is clearly going to be an ongoing problem for prospective GREEN GLOBE 21 benchmarking communities until such a time as an accurate and comprehensive database is established.

5.8   Biodiversity

The biodiversity data for the Kaikoura District were calculated based on data provided by the Department of Conservation (Kaikoura Field Centre). These data were based on Department of Conservation records, rather than GIS mapping data. This approach was taken as the indicator description called for designated conservation areas within the Kaikoura District, rather than all areas of native (or regenerated native) land within the District.

Along with Department of Conservation land, two other identifiable avenues exist that could facilitate the designated conservation of privately held land within the Kaikoura District. The

first of these is a scheme sponsored by the Kaikoura District Council that offers a 50 per cent rebate on rates for landholders who have privately designated conservation land on their property. Such a scheme is laudable, as it offers a tangible incentive for community residents to actively contribute to the conservation of native flora in the district.

The other avenue for privately held designated conservation areas is through the Queen Elisabeth II National Trust for Open Spaces in New Zealand. However, as was the case with the Kaikoura District Council's rates relief scheme, no conservation covenants are recorded for the Kaikoura District. The lack of applications to participate in the above conservation schemes is surprising given the financial incentives associated with a 50 per cent rebate on rates, and may reflect wider-ranging issues associated with conservation, and the communication process between the lead agency and community stakeholders. In many respects, these issues are central to the Green 21 community benchmarking objectives and as such are addressed in the community-specified social indicator discussed in Section 5.13 of this report.

5.9   Waterways Quality

The data for waterways quality in the Kaikoura District were calculated from information provided by Environment Canterbury and Connell Wagner (engineering consultants). This information proved to be relatively easy to collect as accurate records were kept by these organisations.

The waterways quality benchmarking indicator required that data be collected for waterways quality tests that are undertaken regularly. With this in mind, and after consultation with the above organisations, it was decided that any tests undertaken on a case-by-case basis (i.e., tests for special events such as chemical spills, effluent surges etc.) could not be considered to meet the benchmark indicator requirements. This serves to weaken the accuracy of the waterways quality indicator for the Kaikoura District. This is because Kaikoura is subject to intermittent incidents of chemical spills on the District's rugged road network, as well as effluent surges through Lyell Creek. The prescribed requirements of this indicator do not explicitly encourage the inclusion of these 'special cases', even though tests are carried out as each case occurs.

5.10   Travel and Tourism

The data for Travel and Tourism operators was calculated from information provided by the Kaikoura Information Centre. A list of current tourism operators, restaurants and accommodation providers in Kaikoura was obtained. Of these Kaikoura businesses, none was able to meet the requirements set out in the Travel and Tourism benchmarking indicator.

The Travel and Tourism indicator specifically states that businesses must be 'environmentally accredited' to be considered. This is problematic for all potential GREEN GLOBE 21 benchmarking communities in New Zealand. This is because of the relatively recent uptake of environmental accreditation schemes in New Zealand. The only credible environmental accreditation schemes available in New Zealand are the ISO14001 Standard, Enviro-Mark NZ™, and GREEN GLOBE 21. Based on this, most/all New Zealand communities would struggle to record a high indicator level for Travel and Tourism. This is compounded by the relatively short length of time that GREEN GLOBE 21 has been available in New Zealand for travel and tourism operators.

As mentioned above there are no Travel and Tourism operators in Kaikoura certified to any of the schemes. However, there are currently five companies associated with Green 21 in Kaikoura. This number is expected to increase as Kaikoura's association with GREEN GLOBE 21 becomes more publicised within the District itself, and business support networks become established via the Kaikoura business association.

5.11   Community-Selected Indicator

Kaikoura District Council chose not to monitor these indicators, as it proved too difficult to obtain the information required. In the Green 21 indicator booklet, it states that the indicator should be of particular relevance to the community, and it was considered that the three choices provided were of no particular relevance to Kaikoura.

The Kaikoura District Council initially considered the renewable energy consumption and production benchmarking indicators. These were, however, disregarded as viable indicators. The Kaikoura District Council's proposed plan encourages the use of renewable energy sources, meaning that in general this is a permitted activity within the District and is therefore not a monitored activity. The only instance where renewable energy would be monitored is where it has an 'effect' on the environment, in which case it would require a resource consent and this is recorded within the property file, each application being assessed on a case-by-case basis. As a result there is no easy way to monitor this within Kaikoura short of visiting every property in the territorial local authority (TLA) area to look for renewable energy sources. It is also quite likely that this will be the same in most other TLAs within New Zealand.

The value of locally produced consumable products proved to be equally as difficult to measure, as there is presently no mechanism for collecting these data, and would require the visiting of every outlet of consumable products in the district. It is possible, however, that this measure will be of more relevance where a community produces a lot of its own consumable products. But for an area such as the Kaikoura District, which locally produces only small quantities of consumable products and has limited capacity for increasing production in future years, the result would have little relevance.

5.12   Community-Specified Environmental Indicator

The community-specified indicator allows communities to measure and benchmark aspects of the community that are considered to be of environmental and social importance. With this in mind, Kaikoura (through the Kaikoura District Council) has elected to measure an environmentally based indicator.

The Kaikoura District Council is collecting the relevant data for the optional environmental community-specified indicator. This indicator examines the number of truck accidents in the District that involve chemical spills. The Kaikoura District Council has collected this data autonomously. The requirements for this indicator are that it is considered particularly relevant to the community and its environmental impact, is something that is worthy of promotion and is an issue that the community is committed to improving.

Initially, the Kaikoura District Council considered monitoring a marine mammal such as the whale due to its importance to the tourism industry and therefore the community. This would have been an extremely relevant indicator to measure, as an impact on the whale would affect

the social, environmental and economic wellbeing of the community. However, as the whale is at the top of the marine food chain, an adverse environmental impact would have an effect on the whale sometime after the actual impact, meaning any action to rectify a problem would almost certainly be too late. It was therefore advised that monitoring the life at the beginning of the food chain such as shellfish, will provide a much more accurate indicator of the health of the marine environment. However, it was felt too difficult to monitor the marine life directly; instead it was decided to select an indicator that would monitor and improve on an environmental impact itself. The impact that was selected is one that potentially has a major impact on the health of Kaikoura's marine life and that is truck accidents involving chemical spills on the coastal sections of State Highway 1.

In recent years there have been a number of very high profile truck accidents involving chemical spills including the spilling of rat poison and formaldehyde. These were not only publicised widely within New Zealand but also as far afield as the United Kingdom, potential discouraging tourists from visiting Kaikoura. Such spills impact on the environment – affecting the marine life at the bottom of the food chain, and depending on the level of impact this may well impact on animals further up the chain. A chemical spill severe enough to affect Kaikoura's marine mammal life will also have an impact economically as the tourism operators depending on the marine mammals will not attract tourists and thus incomes will reduce. This would lead to a social impact as local people lose their jobs, reducing their spending ability and thus affecting local service industries such as shops and restaurants. The latest spill resulted in substantial fines being issued by the Environment Court to the parties responsible.

The potential impact of a chemical spills on the community is therefore extremely high, it is an environmental impact of particularly relevance to the community and an issue that the community is committed to improving. It is this rationale that led to the selection of truck accidents involving chemical spills as the community-specified environmental indicator.

5.13   Community-Specified Social Indicator

The community specified indicator allows communities to measure and benchmark aspects of the community that are considered to be of environmental and social importance. With this in mind, Kaikoura (through the Kaikoura District Council) has elected to measure a socially based indicator. Accordingly, this section reports on the processes and outcomes associated with selecting appropriate indicators of social performance for the Kaikoura District.

This section of the report is different in essence from the discussion of the other indicators because looks at more than the issues surrounding *how* to measure the indicators. Rather, the primary challenge of the community-specified social indicator was in trying to work out *what* to measure in the first place. It required balancing the needs of GREEN GLOBE 21, the researchers involved in this programme and the Kaikoura community, as well as the needs of all communities that may become involved in this benchmarking process at a later date.

The monitoring of community wellbeing in parallel with measuring environmental health has been relatively problematic for several reasons. Firstly, the continuous improvement philosophy of GREEN GLOBE 21 implies that an indicator of environmental or social 'performance' must measure (or represent) something that can be improved tangibly. Secondly, the environmental indicators that GREEN GLOBE 21 requires to be measured are not necessarily specific to tourism. Air and water quality, for example, are general measures that may actually be more affected by activities other than tourism. This is also the case with

energy use. An implication of this situation is that the community as a whole will need to be involved in the process of improving the environmental performance. Accordingly, when discussing possible social indicators, it was deemed necessary to focus not only on indicators related specifically to tourism but also on factors that might indicate the community's ability to manage the impacts of tourism. With this in mind, the Kaikoura District Council and an associated committee were therefore involved (through consultation) in the process of generating the community-specified social indicators for the Kaikoura District.

Indicators of social 'performance' (social indicators) are usually linked to concepts such as 'quality of life' or ideas about healthy, vital communities. Quality of life comes from a whole range of factors, including employment, access to a clean environment, adequate income, education, health and welfare services, and supportive relationships. Quality of life, therefore, is multi-faceted and is affected by factors such as community size, history, and geography. Recent research from the USA indicates the existence of five main outcomes associated with the activities of a healthy community. These outcomes are as follows:

- Increased use of the skills, knowledge and abilities of local people,

- Strengthened relationships and communication,

- Improved community initiative, responsibility and adaptability,

- Sustainable healthy ecosystems with multiple community benefits, and

- Appropriately diverse and healthy economies.

More recently, a study aimed at measuring the quality of life in New Zealand's six largest cities used a slightly different approach. Their main focus included areas such as health, housing, education, democracy, community cohesion, crime (and safety), employment and economic wellbeing. These 'measures', however, have limitations insofar as they focus on particular issues that may or may not be important in a community. More importantly, these suggested indicators measure things that are not easily controlled or managed at the local level. They are more often associated with political and social influences from outside the community and thus monitoring these things at community level seems irrelevant without the buy-in of other communities and regional/ national level institutions. With this in mind, it is instructive to add clarity to the general characteristics and requirements associated with developing and / or selecting appropriate indicators of social 'performance'. Accordingly, the following points help to define more clearly the general requirements of (social) indicators:

- Having a number does not necessarily mean that you have a good indicator.

- Effective indicators must be well thought out. It is very easy to measure something and then be uncertain about what it means.

- It is important to understand the values/ concepts underlying an indicator and the reasons for which the indicator is to be used. Measurement does not necessarily lead to action, and indicators can be used to obscure problems by the way in which they frame issues.

- Indicators are most useful when seen as part of an ongoing adaptive management process associated with some vision or goals.

- Indicators simplify reality and are only one piece in a larger puzzle of information that might be used to induce behaviour change or policy shifts.

- Indicators are potentially more useful if they address causes rather than symptoms. This highlights the need to be clear about the purpose and basis on which the indicator is formulated.

- All stakeholders should be able to understand the indicator.

- A good indicator is simple and reflects the context in which it features.

- Indicators should be useful to residents in their processes of addressing local issues and in assessing their future directions.

- They are better if they build on processes already in place in the community (e.g., the Kaikoura District Council run a regular community survey on which a small number of questions might be piggy-backed).

- They should measure outcomes, not just outputs.

<div style="text-align: right">(Cobb and Rixford, 1998;Imbach et al. 1997; Lee Smith no date; NCRCRD no date; Woodhill & Robins 1998)</div>

The concept of 'social capital' is another potentially useful construct that was considered as background to a possible indicator. Community networks (both within the community and connections to outside networks) are a factor in understanding a community's ability to learn, manage change and deal with local issues. Thus, notions of social capital might be useful in developing either indicators or strategies for improving local conditions. However, while there may be merit in developing a suite of indicators to look at the above issues, there are a number of problems associated in taking this approach in the Kaikoura setting. These include the following:

- Indicators looking at specific areas such as education or employment are inadequate for measuring the complexity a community, particularly when part of the purpose of these indicators is to make some form of comparison across communities.

- An indicator is really only useful in the context of some set of actions aimed at maintaining or improving the quality of life of a community. That indicator must be meaningful to the community in question, particularly as they are the ones that have to work to improve it.

- Many of these indicators would not be as useful in a small town as they would be in a big city.

- For many of these indicators, it is not clear how a community might work to continuously improve their performance, particularly where political and economic processes outside of local control might influence the indicator measure.

- It is logical to connect the social indicators to the specific aims of GREEN GLOBE 21 (and in the context of tourism), particularly as these indicators need to be generic across a wide range of different communities.

Continuous improvement implies some kind of adaptive management process in which the indicators become part of an ongoing planning-action-evaluation-planning cycle involving a wide range of stakeholders (see Figure 3). Continuous improvement in environmental performance will be most effective with community support for, or buy-in to, the philosophies of GREEN GLOBE 21. Therefore, how a community evaluates GREEN GLOBE 21 Benchmarking (and eventual Certification) is an important factor in the whole continuous improvement process.
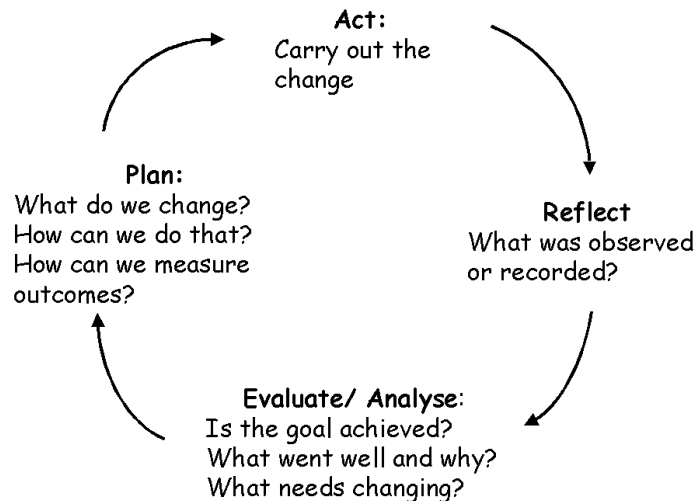
Figure 3: A cycle of continuous improvement

The overarching objectives of GREEN GLOBE 21 are based on the principles of Agenda 21, of which an important factor in sustainable management is local empowerment and participation processes. This is reflected in the requirement that communities going through the benchmarking process have an explicit consultation and communication process. At the current time, however, the effectiveness of local communication processes is not measured as an outcome. Instead, the council only has to show evidence of such processes (an output).

In addition, it is evident (in the academic literature) that community interaction(s), and the community's relationship with local government institutions, are important in shaping local perceptions of tourism and in allowing the community as a whole to adapt to and manage change. Likewise, it is also clear that for continuous improvement in the performance indicators to occur there must be significant community acceptance of the principles associated with GREEN GLOBE 21. Thus, measuring the effectiveness of local participation processes would appear to be an indicator that is centrally relevant to GREEN GLOBE 21 and to managing the impacts of tourism. Effective community interaction processes are more likely to help address other local issues in environment, health, welfare and safety.

In addition, it seems that a most useful indicator for benchmarking would provide a measure of local acceptance of GREEN GLOBE 21 and its aims. This would ideally be done as part of a community survey or could be run as a question on its own with some questions that might inform the local authority of the groups who are least accepting of GREEN GLOBE 21.

In summary, therefore, GREEN GLOBE 21 community specified social indicators should be:
• Easily understood by all stakeholders,

• Quick and easy to measure [given the time available for this process],

• Linked into existing processes in the community (e.g., the community survey; census data etc.),

• Quantitative,

- Clearly linked to stated processes and context (i.e., reflect the values of the GREEN GLOBE 21 brand),

- Reflective of the community interest, and

- Measure outcomes, not outputs.

5.14   Conclusions

The preceding data represent the Kaikoura District's attempt at gaining GREEN GLOBE 21 Community Benchmarked status. This process has been documented as a pilot study for the emergent GREEN GLOBE 21 Standard for Travel and Tourism. Kaikoura has been the first community in New Zealand to experience this benchmarking process, and as such provides a unique opportunity to assess not only the environmental performance of the Kaikoura District, but also the assimilation of the GREEN GLOBE 21 scheme to the New Zealand context. Undoubtedly GREEN GLOBE 21 has provided the basis to improve the environmental performance in Kaikoura District.

Because GREEN GLOBE 21 is an emergent scheme, there are issues associated with various aspects of the benchmarking indicators that are, as yet, unresolved. Similarly, some of the Sustainability Performance Indicators are yet to be finalised. Thus, as a key output of the Kaikoura Community Benchmarking pilot study, this report (in part) seeks to identify, clarify and resolve these issues. With this in mind, it is important to note that should Kaikoura be awarded Benchmarked status (based on the data contained within this report) it must be regarded only as benchmarking against an *interim New Zealand Community Standard for GREEN GLOBE 21*. In effect, this would signify Kaikoura's commitment to continual improvement of its environmental and social performance, rather than represent Kaikoura attaining the final (and completed) GREEN GLOBE 21 benchmarked status.

However, notwithstanding the above, perhaps the key finding of this pilot study has been the paucity of accurate and complete data. Because of this, much of the data presented have been derived from incomplete data sets and have necessitated 'best-guess' estimates (based on the available data). Consequently, the accuracy of the data reported in this study cannot be regarded as absolute, rather the most accurate available data. Similarly, another key finding of this study has been that the responsibility for the success (or failure) of the GREEN GLOBE 21 Travel and Tourism Standard in Kaikoura lies primarily with the Kaikoura District Council. As the district's lead agency (and sponsor), the council needs to ensure that the principles of environmental (and social) sustainability associated with GREEN GLOBE 21 are communicated effectively with the wider community.

With this in mind, a series of recommendations is presented that address the issues and concerns raised in this report.

Chapter 6
Recommendations

6.1   Sustainability Policy

Kaikoura
No specific recommendations offered.

GREEN GLOBE 21
No specific recommendations offered.

6.2   Energy Consumption

Kaikoura
The Kaikoura District Council's current association with the Energy Efficiency Conservation Authority (EECA) through the Energy-Wise Councils project will lead to the consideration of energy consumption alternatives (e.g., renewable energy) within the District (see Appendix B for details regarding EECA's Energy-Wise Councils project). This project will provide a support network for Kaikoura when evaluating possible renewable energy schemes and will potentially lead to the implementation of an energy reduction programme and sharing of ideas and initiatives with other councils. Nine TLAs have signed a memorandum of understanding with the Energy Efficiency Conservation Authority (EECA) to be part of an Energy-Wise Councils project. Kaikoura signed up to this project in July 2001.

In addition to the above, the following publication may be a useful source of information: *'Community Energy Workbook – a guide to building a sustainable economy'* (authors Alice Hubbard & Clay Fong, Rocky Mountain Institute, USA, 1995).

GREEN GLOBE 21
The Green 21 energy calculator only allows for five energy sources to be entered (and stored) at any one time. For ease of use, it is recommended that the energy calculator be modified so more than five energy sources can be entered and stored on the energy calculator for communities. Similarly, the energy calculator doesn't allow for New Zealand's multiple sources of electricity generation. Constant variations in electricity demand and supply characteristics necessitate that New Zealand electricity generation data be considered on an averaged breakdown of generation sources. The GREEN GLOBE 21 energy calculator therefore needs to have the capacity for multiple sources of electricity sources to be entered and stored.

It is noted here that use of person years per annum (pypa) as a denominator in this, and several subsequent indicators, may confusing (due to the repetition of the year time period) for future benchmark communities. As an alternative, the use of persons per annum (ppa) may be a less confusing, and thus more appropriate, measure.

6.3   Greenhouse Gas Production

Kaikoura
No specific recommendations offered.

GREEN GLOBE 21

The GREEN GLOBE 21 energy calculator needs to be modified to include a New Zealand national carbon dioxide emissions figure for electricity.

6.4 Air Quality

Kaikoura

Initiate a discussion with GREEN GLOBE 21 about air quality measures that would be more appropriate for the District.

GREEN GLOBE 21

The required air quality data have proven to be extremely difficult to obtain. As a consequence of this, partial data only have been supplied to the CRC for Sustainable Tourism (Australia) for calculation. This, coupled with the inherent shortcomings of deriving an air quality figure from incomplete and questionable data, has led the authors to recommend an ambient air quality indicator. Specifically, it is recommended that GREEN GLOBE 21 adopt an air quality indicator based on commonly used testing and monitoring practices within communities (i.e., monitoring PM_{10}). To overcome any site specific characteristics (such as Kaikoura's prevailing salt spray from the sea) it would be necessary to adopt a two-site approach to data collection: one measuring station recording ambient air quality (the control level) and one recording community/ urban air quality. The difference in air quality data between these two stations would represent the community's influence on air quality.

6.5 Water Consumption

Kaikoura

To increase the accuracy of the data and assess the actual amount of water consumed outside of the township rather than using the predicted use from the resource consents it would be worthwhile installing a water meter.

GREEN GLOBE 21

No specific recommendations offered.

6.6 Solid Waste Production

Kaikoura

The accuracy of these data would be improved by the introduction of a weighbridge at the landfill. However, at this stage it would be an added expense that may not be a priority. In the future a move toward charging customers by the weight of the waste they dispose of it would warrant the purchase of a weighbridge. In the meantime, the data from the audits should be reliable if the same methods are applied.

As more recycling and reuse takes place, the composition of the waste to landfill will become more homogenous. It may then be possible to revise the conversion figure from volume to mass for the waste going to landfill.

Include volume as an option in this indicator. Although the majority of New Zealand communities should have tonnage figures there are a few that don't (such as Kaikoura and smaller destinations) that would use a volume indicator. This would also fit in with the sector indicator, which has the option of weight or volume.

6.7   Resource Conservation

Kaikoura
No specific recommendations offered.

GREEN GLOBE 21

The Sustainability Performance Indicator for Benchmarking Communities booklet does not give any guidelines as to exactly what paper to measure although does hint by saying 'e.g., for promotional material, stationary, toilets etc. and GREEN GLOBE 21 subsequently clarified by saying that '…sheet paper (computer, fax, copier typing); envelopes; notepads, internal office memo paper and advertising brochure' should be included. Therefore Kaikoura should be cautious when comparing themselves to other authorities unless they are measuring the same items. Kaikoura should focus on obtaining yearly data that can be benchmarked internally.

6.8   Biodiversity

Kaikoura
The Kaikoura District Council should actively promote its rating relief policy for biodiversity areas. According to sources within the District Council, this scheme has been in place for over a year and has yet to attract any applications. Similarly, the district council should also draw attention to the voluntary protection covenants available under the Queen Elizabeth II National Trust.

GREEN GLOBE 21
No specific recommendations offered.

6.9   Waterways Quality

Kaikoura
No specific recommendations offered.

GREEN GLOBE 21

The water quality data that were collected for this indicator include routinely performed tests and monitoring. Data do not include water quality tests performed on a case-by-case basis. This appears to be a significant weakness of this indicator, as it fails to consider event-specific water quality tests (e.g., chemical spills, effluent 'slugs' etc.). Alternatively, an additional indicator could be added such as 'the number of non-compliance notices issued to the lead agency by it's regional authority per annum/total number of resource consents issued to the lead agency. Although this indicator would be broader than water quality it would ensure all non-compliances and requirements of the regional authority were being met. It is therefore recommended that this Sustainability Benchmarking Indicator be used to encourage

the inclusion of all water quality tests performed over the relevant period, rather than just routinely performed tests.

6.10   Travel and Tourism

Kaikoura
The Kaikoura District Council, as the 'lead agency' in the Kaikoura District, is best placed to promote the goals and objectives of GREEN GLOBE 21 to the business community in the district. The authors therefore recommend that the Kaikoura District Council actively promote the goals and objectives of GREEN GLOBE 21 to Kaikoura business operators. This could be facilitated through the establishment (or consolidation) of business networks within the district.

GREEN GLOBE 21

To uphold the integrity of the GREEN GLOBE 21 Communities Standard and for ease of future benchmarking between international communities it is recommended that only third-party-audited accreditation schemes should count for this indicator. GREEN GLOBE 21 needs to publicise the list of accreditation schemes in the final version of the GREEN GLOBE 21 community standard or in a future Benchmarking User's Guide specifically for communities. Presently, the only credible environmental accreditation schemes available in New Zealand are the ISO14001 Standard, Enviro-Mark NZ™, and GREEN GLOBE 21.

6.11   Optional Community Selected Indicator

Kaikoura
Information is not readily available on the renewable energy consumption and production for TLAs in New Zealand. Pieces of information are available such as individual landfills that are converting landfill gas to electricity, solar-heated public swimming pools, solar panels on libraries and other isolated initiatives. There is a lack of data on what private households are using, for example, solar panels. Simply because they are not measuring it and do not need to. An individual can place solar panels on the roof of their house to heat the swimming pool without getting permission.
The Kaikoura District Council's current association with the Energy Efficiency Conservation Authority (EECA) through the Energy-Wise Councils project will, in all probability, lead eventually to the consideration of renewable energy alternatives within the district. This project will provide a support network for Kaikoura when evaluating possible renewable energy schemes. Details about EECA's Energy-Wise Councils project can be seen in Appendix B.

In addition to the above, the following publication may be a useful source of information:
'Economic Renewal Guide – a collaborative process for sustainable community development' (author Michael J. Kinsley, Rocky Mountain Institute, USA).

GREEN GLOBE 21

It should be noted that this indicator is aimed to be of 'particular relevance the community and its environmental and/or social impact, and worthy of promotion'. The GREEN GLOBE 21 booklet goes onto say that the indicator 'may be community or locally specific and should reflect a commitment to improving local issues'.

The present optional measures, although worthy, are not thought to be generic across a range of communities (particularly in New Zealand) and it is thought a greater range of generic optional measures is required to ensure more communities select measures from this indicator. Possible measures that could be used for this indicator could relate to the impacts of dairy (or other) farming practices on the local environment. For example, this could include; Total area of riparian planting occurring on district farms / Total area of waterways through district farms, or a measure relating to effluent disposal on farms.

An alternative measure could relate to the involvement of indigenous peoples in the community. For example, Total number of local businesses owned and/or managed by people from the indigenous community / Total number of locally owned businesses operating within the community. Or, the Total number of community events and activities within the district whose organisation involves people from the indigenous community / Total number of community events and activities organised and run within the district.

Regardless of the measure, however, it is important that a wider range of optional measures is included so as to encourage greater participation in this indicator, as well as to enable the community to measure and improve on an issue of significant relevance to the community.

6.12   Optional Community-specified Environmental Indicator

Kaikoura
The Kaikoura District Council should work in conjunction with the relevant government agencies and authorities to reduce the number of accidents (especially those involving chemical spills) on the Kaikoura highway. This could involve improving the quality of the road surface, which is subject to relatively rapid degeneration due to the effects of the sea (sea wash, wave action, salt water and sea spray etc.). Other strategies could involve improved traffic and safety warning-signage.

GREEN GLOBE 21
No specific recommendations offered.

6.13   Optional Community-Specified Social Indicator

Kaikoura
The Kaikoura District Council, as the 'lead agency' in the Kaikoura District, is best placed to promote the goals and objectives of GREEN GLOBE 21 to the business community in the District. The authors therefore recommend that the Kaikoura District Council actively promote the GREEN GLOBE 21 goals of environmental sustainability to the Kaikoura community residents. In addition, the council should also seek to ensure that effective two-way communication between itself and the wider community is achieved.

The Kaikoura District Council should also seek to ensure that an appropriate method of data collection is used so that the integrity (i.e., randomness, reliability and validity) of the community survey sample is upheld. Thus, the District Council, with the assistance of a suitable organisation (e.g., Green Globe 21), should develop and implement appropriate sampling protocols and procedures for future surveys. In addition, it may be appropriate for the KDC to carry out the survey every second year rather than annually, although care needs to be taken as this may in fact contravene the requirements of the Green Globe 21 Benchmarking and Certification programme (i.e., measurement on an annual basis).

GREEN GLOBE 21

GREEN GLOBE 21 should consider the use of a 'community acceptance of GREEN GLOBE 21' indicator in future studies – alongside consultation and the development of indicators such as those presented here, which may be more specific to the community in question.

GREEN GLOBE 21 should provide guidelines to local authorities on running a survey, including methods of analysis, methods of sampling etc. Without these guidelines in place, it will be difficult to compare communities. Without clear guidelines it may also be that surveys may be conducted differently over time by the same authority as personnel change. This also may affect the comparability of survey results.

In addition to the above, Green 21 should also consider the development of community indicators as a process of continuous improvement. The development of such indicators is a complex iterative process involving negotiation between participating communities, GREEN GLOBE 21, umbrella tourism organisations such as the NZTIA and other stakeholders. Stakeholder groups may vary between destinations and between nation states.

Chapter 7
Green Globe 21 Response

5th September,2002

TRREC
Lincoln University
PO Box 84
Canterbury

Green Globe 21 Response:

To recommendations contained in the Kaikoura Community Benchmarking Pilot Study

Green Globe would like to commend Lincoln University on the quality of this pilot study report. It is thorough and insightful giving Green Globe recommendations which will aid in the enhancement of the Green Globe Community benchmarking process.

The following recommendations were put forward in the report and as you will see from the Green Globe responses a large proportion of these are currently being addressed:

1.Energy Consumption:

The current GG21 energy calculator allows for only five energy sources to be entered.

This problem is being addressed by Green Globe and will be operational in the next version of the CD.

New Zealand has a mixture of primary energy sources used for electricity generation. The calculator does not take this into account.

Currently Green Globe has this in the development phase to accommodate for grid supplies made up of a mixture of primary energy sources.

2.Greenhouse Gas Production

The energy calculator needs to be modified to include a New Zealand CO_2 emission figure for electricity.

Currently Green Globe has this in the development phase, a figure was calculated based on the average mix of electricity from a range of fuel sources in New Zealand as advised by Landcare and used to calculate the emissions for Kaikoura.

3.Air Quality

Air Quality data proved difficult to obtain. It is recommended that Green Globe adopt an air quality indicator based on commonly used testing and monitoring practices within communities ie monitoring PM10.

Green Globe will discuss this recommendation at the annual review of benchmarks.

4.Solid Waste

Include volume as an option in this indicator.

Green Globe recognises that some communities will keep waste collection data in volume and in such cases will allow communities to record this data accordingly.

5.Resource Conservation

The SBI does not give guidelines on exactly what paper is to be measured.

Green Globe will amend this in the new versions of the SBI and user's guide.

5.Waterways Quality

Data do not include water quality tests performed on a case by case basis.

The current Green Globe methodology does not exclude these tests from being included.

6.Travel and Tourism

Only third party-audited accreditation schemes should count for this indicator.

Green Globe will discuss this recommendation at the annual review of benchmarks.

7.Optional Community Selected Indicator

A wider range of optional measures is included so as to encourage greater participation in this indicator.

Green Globe will discuss this recommendation at the annual review of benchmarks.

8.Optional Community – Specified Social Indicator

Green Globe 21 should consider the use of a 'community acceptance of Green Globe 21 indicator'.

Green Globe will discuss this recommendation at the annual review of benchmarks.

Both the recommendations and the body of the report will enhance the Green Globe process. We would like to offer our sincere thanks and congratulations for this important contribution to improving the environmental and socially sustainable performance of Communities. It is a small step to a better planet .

Yours faithfully

(signed)

Graeme Worboys
Chief Executive Officer,
Green Globe Asia Pacific
5th September 2002

List of Titles - Kaikoura

Butcher G., Fairweather J. R., and D. G. Simmons, *The Economic Impact of Tourism on Kaikoura*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.8.

Henley M., Poharama A., Smith A., Simmons D. G., and J. R. Fairweather, *The Impact of Tourism on the Maori Community in Kaikoura*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.7.

Horn C. M., Simmons D. G., and J. R. Fairweather, *Evolution and Change in Kaikoura: Responses to Tourism Development*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.6.

Fairweather J. R., Horn C. M., and D. G. Simmons, *Estimating the Number of Visitors to Kaikoura Over One Year By Developing A Vehicle Observation Method*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.2.

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Moore K., Simmons D. G., and J. R. Fairweather, *Visitor Decision Making, On-Site Spatial Behaviours, Cognitive Maps and Destination Perceptions: A Case Study of Kaikoura*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.4.

NZ Tourism Strategy Group (2000), *New Zealand Tourism Strategy 2010.* The Ministry of Tourism) Wellington.

Simmons D. G., Horn C. M., and J. R. Fairweather, *Summertime Visitors to Kaikoura: Characteristics, Attractions and Activities*, Tourism Research and Education Centre (TREC), Lincoln University, Report No.3.

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Ward J., Booth K., Barton K., Simmons D. G., and J. R. Fairweather, *Tourist and New Zealand Fur Seal Interactions Along the Kaikoura Coast*. Tourism Research and Education Centre (TREC), Lincoln University, Report No.9.

Appendix A
Calculation of Person Years Per Annum in the Kaikoura District

The Energy Consumption, Greenhouse Gas, Water Consumption and Solid Waste Production indicators are calculated on a per person year per annum basis to take into account both residents and tourists. Table A below shows the current suggested method from Green Globe and Table B shows and method recommended by Professor David Simmons, Lincoln University, which takes account of short stop visitors and length of stay.

Table A: GREEN GLOBE 21 calculation of Person Years for Kaikoura

	Number	Days	Total	%
Residents	3 483	365	3 483	76
Overnight	356 000	1	975	21
Day tripper	137 000	0.33	124	3
Total	**496 483**		**4 582**	100

Sources: GREEN GLOBE 21 Sustainability Pathway Indicators for Benchmarking Communities page 5
Number of Residents in Kaikoura
Number of Overnight Tourists
Number of Day visitors/trippers

Table B Alternative calculation of Person Years for Kaikoura

	Number	Days	Total	%
Residents	3 483	[1]351.5	3 354	62
Short Stop	380 000	0.1	104	2
Day Visitors	137 000	[2]0.33	124	3
Overnight	356 000	1.83	1 785	33
Total	**876 483**		**5 367**	100

Sources: see above
Number of 'short-stop' visitors
Resident Day weighting
Short Stop Day weighting
Overnight visitor day weighting

[1] Resident days minus the average national domestic travel outside of the District
[2] Average length of stay

Appendix B
The Energy Efficiency Conservation Authority's (EECA)
Energy-Wise Councils project

Each Energy-Wise Council agrees to:

- Implement the Energy-Wise Companies Campaign's Charter of Key Principles in their internal energy management systems.

- Include energy efficiency objectives and performance measures in their Annual Plans.

- Ensure that improved energy efficiency and enhanced, appropriate renewable energy supply and use are explicitly considered in Council policy development and planning activities, particularly as part of decision making processes relating to:

  o Transport

  o Water supply

  o Waste management and

  o The development of an urban form that contributes significantly to energy conservation, energy efficiency and sustainability.

- Establish or confirm criteria for project evaluation, such that energy efficiency, energy conservation and appropriate renewable energy projects are assessed on equal terms with other projects in a way which considers the financial, environmental and social costs and benefits from improved energy efficiency and the greater use of appropriate renewable energy.

- Identify mechanisms to address energy efficiency and renewable energy issues in their wider communities.

- Prepare and exchange reports between member Councils on their own case studies of energy efficiency and renewable energy initiatives.

- Prepare and exchange reports on benchmark energy performance data and progress made to improve energy efficiency and renewable energy initiatives.

- Share their experience with other Councils and support EECA in the facilitation of the Partnership to improve energy efficiency and renewable energy in the local government sector.

EECA agrees to support Councils, by facilitating information transfer, providing technical information and support, and will:

- Provide secretarial, coordination and facilitation support

- Publish case studies and guidelines developed in association with Councils

- Provide Councils with information on energy efficiency and renewable sources of energy for inclusion in community information and education initiatives

- Provide Councils with information on the environmental benefits of energy efficiency and renewable sources of energy

- Publish a partnership newsletter and establish an Internet home page

- Provide technical information and advice to Councils

- Coordinate inputs from experts outside the partnership
- Conduct seminars to facilitate information transfer.

Appendix C
Kaikoura District Council's Sustainability Policy for Green Globe Community Benchmarking

KAIKOURA DISTRICT COUNCIL

Kaikoura District Council is guided by the principles of Agenda 21 to sustain the social, economic and environmental well being of the community now and for future generations.

Policy Statement

This policy has been adopted by Kaikoura District Council to assist in the implementation of the councils Agenda 21 strategy. This policy is further supported by an action plan outlining specific targets for achieving our objectives.

Kaikoura District Council undertakes to review this policy on an annual basis and to make the policy available to and communicate it with all stakeholders, members of the general public, employees, customers and suppliers of goods and services of the Council. It will also put in place systems for regularly recording sustainability performance and supply this information annually to GREEN GLOBE 21.

Environmental and Social Commitments 2002:

• Kaikoura District Council will comply with all relevant environmental legislation

• Kaikoura District Council will take all practicable steps to improve environmental outcomes and reduce the adverse effects of activities on the environment

• Kaikoura District Council will endeavour to minimise the creation of all forms of waste and will, at all times, view waste as a resource with the potential for reuse and recycling

• Kaikoura District Council is committed to responsible energy management in order to minimize pollution, particularly CO_2 emissions

• Kaikoura District Council will encourage the protection of significant ecosystems

• Kaikoura District Council will make sustainable use of natural resources and will conserve non-renewable resources through efficient use and careful planning

• Kaikoura District Council will encourage minimal and wherever possible the elimination of any pollutant that may cause environmental damage to the air, land or water
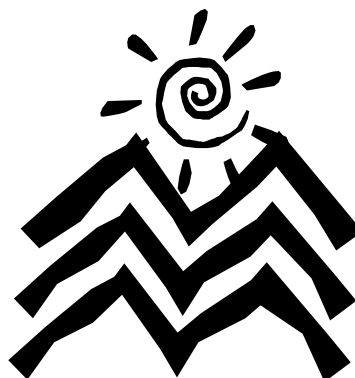
- Kaikoura District Council will encourage environmental awareness by providing information and training both within the Council and within the wider community

- Kaikoura District Council will provide information on and encourage the use of environmentally friendly products

- Kaikoura District Council will improve the level of understanding of the Council's environmental activities

- Kaikoura District Council is an equal employment opportunities employer and makes a commitment to the employment of community based people or people living in nearby communities, if their skills exceed or are equal to those required by the vacant position.

- To reduce the adverse environmental, and social effects of moving goods and services throughout the world, Kaikoura District Council will source goods and services whose origins are as close as possible to the local community, as long as this does not adversely affect the council's activities or have a negative environmental, social or economic impact.

- Kaikoura District Council will work with contractors and consultants involved in the Council's activities to develop sustainable environmental practices

Appendix D
Tourism Strategy for the Kaikoura District

Tourism Strategy
For the Kaikoura District
(Working Document)

Contents

The following document is a revision of the Tourism Strategy for the Kaikoura District, it is designed as a working document, excluding some of the detail such as the planning processes used to develop the original document as this was not felt to be required in a working document.

No policy, gaol, objective or strategy was removed or drastically altered in the course of revising this strategy and every effort was made retain the tone and spirit of the original document. The full version of the Tourism strategy for Kaikoura District, which includes the 'process' other detail excluded from this document, and can be obtained from the Kaikoura District Council offices 34 The Esplanade, Kaikoura

Ian Challenger
February 2002

Vision

Kaikoura is a proud and self-reliant community, presenting its visitors with a quality experience in a unique and well cared for environment.

Guiding elements

The Kaikoura community is well equipped to meet the challenges of the tourism industry in terms of its human resources and social wellbeing. It treasures its heritage, has a strong sense of belonging and fosters the importance of control over its destiny.

The community has a well-balanced and diversified economic base with a stable growth rate that does not place undue strain on the community resources. The community has an outward looking focus representing a hospitable society when presenting its unique quality tourist products to visitors

The Kaikoura community displays responsible custodianship of its unique natural, social and built environmental resources by striving towards the sustainable utilisation and management thereof. It is a community that treasures the present small-scale town atmosphere and strives to retain and enhance this coastal village character and atmosphere.

Chapter 1

Background, Tourism in Kaikoura

1.1   Historical Background

Although the scenic values of Kaikoura District were recognised early last century (1900), it was only in the early nineties that Kaikoura became a distinct tourism destination. Some tourism development was recorded in the 1970s but town served primarily as a comfort break or overnight stop for Cook Strait Ferry passengers travelling by road or rail (Poharama, Henley, Smith, Fairweather & Simmons, 1998).

Originally Kaikoura developed as a service centre for the farming and fishing communities. But by the 1950's employment was high in rail and communications, resulting from the development of the railway line and improvements to road and technology.

Government restructuring in the 1980s significant effected Kaikoura, improvements in the telecommunications industry together with privatisation resulted in massive un-employment. This particularly effected the Maori community, as manual labour saw redundancies first and employment dropping by about 15 per cent between 1986 & 1991.

While employment decreased in the railway, communication, and agricultural sectors, between 1991 and 1996 it was increasing in the restaurant, accommodation, services and non-identified economic sectors by up to 25per cent. Growth in these sectors can easily be attributed to increased tourist numbers, following the establishment of Whale Watch in 1988. This growth meant that by 1998, tourism represented more than 30per cent of economic activity in Kaikoura (TREC reports 1 to 10).

Kaikoura is a model case study in many ways, with its small and fragile community, low tax base, high tourism growth and unique environment. The coastal village character of the town is facing unmanageable growth resulting in over crowding, social ills and pressure on the coastal and marine life. Threats such as these put at risk qualities both locals and visitors enjoy. Tourism is also an industry affected by economic downturns and political pressures, posing a question over the sustainable growth of tourism.

1.2   Key Issues

Various key issues were identified from TRREC's research and these issues informed the founding premise to the tourism planning exercise.

- Firstly, market forces often swamp the destination community and the needs and wants of the locals need to be acknowledged. Also, Kaikoura's small quiet coastal environment needs to be harmonised with the needs of the visitor.

- Secondly, Kaikoura's tourism product is nature based with a strong focus on marine animals and distinct landscape features together with small-scale coastal settlement atmosphere. This resource base is vulnerable to over exploitation, risking the sustainability of the natural resource and the visitor.

- It is the expenditure of the tourist at the destination that helps to sustain tourism and the visitors preferred experiences needs acknowledgment, without compromising the host community or its environment and planning must occur for all five tourist types visiting Kaikoura.

- Development of Whale Watch not only revitalised the tourism industry but also presented local job opportunities. These aspirations must continue to be met without cultural identity being lost. Also with Iwi holding a controlling share at Whale Watch, Iwi and Pakeha must work together to build a sustainable tourism industry in Kaikoura.

- Tourism is a luxury and subject to market fluctuations, caused by economic crisis, political unrest and even weather patterns. Over reliance on tourism for economic development is risky in respect of the industry's sustainability.

- Other factors limiting a growth in Kaikoura's tourism activities include physical capacities such as water supply, solid waste, effluents treatment and traffic safety, convenience of flows and parking arrangements.

- There are also financial limitations on Kaikoura residents; Kaikoura has a low rating base, while still having to provide and maintain the infrastructure for tourists and residents. Attracting visitors and providing them with an enjoyable experience means the ratepayer subsidises them, resulting in above average per capita.

1.3 Need for Tourism Planning

Tourism in Kaikoura for any years was a low-key affair, and then it 'just happened' when it was noted that Kaikoura was one of the few locations in the world where whales came nearest to the coast and in America people paid to see whales. Fourteen years later 1,000,000 tourists per year visit Kaikoura, without any directive strategy, or planning intervention (anecdotal).

During TRREC's research some residents and businesses expressed concern that tourism planning was not occurring to cater for the increase in tourism. They believed tourism was at a 'crossroad', Kaikoura needed to know where it was heading and Kaikoura District Council, Kaikoura Information and Tourism Incorporated and the business community were not providing leadership. Further, the Resource Management Act, 1991, relied upon as the planning instrument, was not meeting this need.

Finally, the community survey suggests that there is a high level of public dissatisfaction of Kaikoura District Council. This is often caused by conflicting expectations from different sectors in the community and not attributable to council's actual performance and is frequently intensified by the nature of the tourism industry where benefits are not always distributed equitable across the broader society.

Frustration within the local community risks reaching untenable levels when community aspirations are not met and occurs when social and environmental change within a community exceeds manageable proportions. Also it is important to recognised that the key resources for tourism development lie in the public domain, the marine mammals, 'small coastal town atmosphere', friendliness of the host community and the supporting infrastructure all have a 'public good value' requiring careful management to ensure sustainable tourism development in Kaikoura.

It is therefore evident that public intervention through the District council is required to address these various conflicting aspirations with specific reference to the key issues raised in the paragraph above.

Chapter 2

Tourism Planning Context

2.1   Tourism planning issues in Kaikoura

Given the differences in population sizes, resources for product development, social dynamics and local politics between different destinations, the approach to tourism strategy development cannot be the same in every destination. The following issues reflect the basis for developing tourism strategy in Kaikoura:

- *The maturity level of tourism in Kaikoura* - tourism in Kaikoura is, relatively, still in its infancy with growth only occurring in the past ten years. The negative impacts of tourism yet to revealed themselves widely, and concerns are more of a 'forewarning' nature. As such at this point in time, there is a general bias toward tourism development in the broader community.

- *The existence of any previous tourism strategies or plans* – as no tourism plan or strategy exists for Kaikoura, strategy development starts from scratch, influencing both the process and the content of the strategy and ensuring that Kaikoura is able to get the basics in place.

- *The size of the Kaikoura community and it economic strength* – given its low population, Kaikoura has a limited financial resources to be embarking on grand planning exercises. The number of visitors to Kaikoura in 1997 gave Kaikoura a tourist density of 250 visitors per resident, far higher than other destination areas and meaning that the capital expenditure available per tourist is therefore far less, and the community is reliant on grants and other financial resources for capital based projects.

- *The nature of the tourism product* – Kaikoura's tourist product focuses strongly on marine mammals as such tourist managers developers and marketers are limited to a few operators.

- *The general availability of technical expertise* - due to the low population technical and other professional expertise are limited to a couple of organisations in Kaikoura.

- *Financial resources* - with limited finances available, implementation of projects tends to be as time and finances allow having the advantage that project feedback takes place prior to the next project occurring. Also tourisms dynamic nature often leads to changing priorities in a short time span, the incremental approach ensures that the strategies can be adapted to with more ease.

2.2   Planning Framework

2.2.1   Cascading Planning Process

In Kaikoura where no previous plan existed, an 'Incremental Framework' planning approach was used, meaning that, the vision and goals will provide the broad framework within which tourism development is guided while resource development gathers momentum. Strategy is therefore developed over time as resources become available and other strategies come into place. The initial emphasis in Kaikoura placed on developing the human resources and getting the basics in place first.

2.2.2   Kaikoura Tourism & Development Advisory Board (KTDAB)

The District Council established the Kaikoura Tourism & Development Advisory Board to represents all community stakeholders on a sectoral basis. The representation from the community was important from social welfare, Maori, environmental sectors, attractions and service industry and the business community and members are appointed to KTDAB by Kaikoura District Council.

As a result it has a legislative base by being a standing committee of the Council, decision making by members carry weight, reducing tokenism. An important feature of the board is that it is bottom-up community based organisation with continuity through its legislative base and representation from DoC, a higher order governmental organisation and participants also have a high level of enthusiasm.

2.2.3   Community Input

General citizens find access to the planning process through their representatives on KTDAB, arguments exist for having involved the general public at an earlier stage, which is debatable and in the Kaikoura context the process followed is appropriate given the need to create momentum for the strategy.

2.2.4   Current Situation Analysis

TRREC's research provides an excellent base and presents a picture of Kaikoura reflecting an analysis of the current situation. An important aspect of the strategy is that the situation analysis needs to be updated and developed to ensure that information does not become outdated.

2.2.5   National and Regional Bodies

An important component of the integrated planning approach is communication and linkages with national and regional bodies. This aspect needs serious attention and once the liaison portfolio is established the linkages will have to be fostered.

2.2.6   Implementation bodies and instruments

It is evident that not all implementation occurs through the same bodies or organisations, implementation is not directed at Kaikoura District Council only and is also not mandatory which emphasises the need to get the key stakeholders involved. It is importance however that the Tourism Strategy feeds into the annual and district plans giving its implementation some standing.

2.3   Core Values

In the course of developing this strategy, the Kaikoura Tourism & Development Advisory Board spent considerable time working with stakeholders within the community to gain an understanding of the needs and aspirations of the community. This research resulted in the development of a series of core values that are important to the community of Kaikoura.

These are values that are considered fundamental to and underpin the value systems of society and determine basic human rights and are often used to establish common ground in conflict situations. It is these core values that form the premise for establishing the documents strategies and they are as follows:

Respecting and caring for the community of life for present and future generations.
•	Improving the quality of life for all people.
•	Minimising the earth's depletion of non renewable resources
•	Enabling communities to care for their own environments.
•	Value open participatory decision-making
•	Value, safe healthy and hospitable communities

- Value culture and history
- Value freedom and equality of opportunity
- Respect and value the ownership of property
- The pursuit of creativity innovation and excellence
- Social equity - all people to be treated with decency fairness and justice
- Maintain the diversity, health and productivity of coastal and marine areas

Chapter 3
Guiding goals, objectives and strategies

The development of the community's vision for a sustainable tourism industry is guided by a framework of goals, objective and strategies, each of which reflects the three spheres underpinning integrated tourism development – namely economic, environmental and social development.

Goal	Objective
Economic Development	Balanced economic structure
	Sustained economic growth
	Distribution of wealth throughout the community
	Full employment
Ecological Development	The diversity, health and productivity of coastal and marine systems
	Conservation of wild life and natural vegetation
	Attractiveness of landscape and townscape to be maintained and improved
	Acceptable levels of water, air and noise pollution
	Green image to be lived out
Community Development	Improved local self-reliance
	Community pride to be fostered
	Tourism aware host community
	Participation in tourism decision-making
	Maintenance of local heritage value
	Acceptable levels of crowding
	Acceptable levels of social behaviour
	Maintenance of authentic cultural experiences
	Acceptable levels of safety and security

Strategies

The aim of the strategies recorded below is to:

• Provide the tourism industry and Kaikoura community with a planning framework, in which activities can be conducted

• Provide an organisational platform, at which the variety of aspirations of the industry and society can be raised and addressed

• Identify a future direction in terms of a vision statement and guiding principles

• To identify core needs and strategies that will ensure the momentum of the strategic planning process

• To establish a basis for the funding and implementation of the strategy

• To respond to the need expressed in the initial research by TREC.

• To initiate the development of partnerships with other stakeholders in the Kaikoura tourism delivery system

1.   Institutional Development

Organisational Structure

*Issue***:** The need to formalise management and planning within the tourism sector was outlined in chapter 2, continuity will offer stability for stakeholders and establishing a body representative of the stakeholders will serve this need. Members of this body, its functions, powers and duties need to be set out in a constitution, guidelines for which are shown in Appendix (iii).

Objective	Action 1 (25)	Action 2 (17.14)
To promote an efficient, effective co-operative, co-ordinated and integrated tourism planning and management system.	Drawn up a constitution for Kaikoura Tourism & Development Advisory Board that sets out its membership, functions, duties, financing and related matters and establish this as a fully representative committee.	Extended public invitations to stakeholders for representation on the board.

Facilitation and Lead Agent

Issue: The Kaikoura Tourism & Development Advisory Board (KTDAB) is constituted under the Local Government Act 1974, with members are appointed by Kaikoura District Council. KTDAB initial function was as 'lead-agent' and community advisory group, starting the planning process to formulate the Tourism Strategy. The lack of financial and logistical resources within Kaikoura means the Council must continue their role of facilitator for some time.

Objective	Action 1 (17.56)	Action 2 (14.89)	Action 3 (16.49)	Action 4 (12.99)	Action 5 (14.77)
The Kaikoura District Council to act as lead-agent, managing the implementation of the Kaikoura Tourism Strategy.	KAIKOURA DISTRICT COUNCIL accept that KTDAB function in the capacity outlined above, and in terms of the constitution, drafted in accordance with guidelines set out.	KAIKOURA DISTRICT COUNCIL shall make budgetary provision for facilitating its various functions in terms of this strategy.	KTDAB, constituted in terms of Section 114 of the Local Government Act 1974 to be executive body to implement the Tourism strategy.	KAIKOURA DISTRICT COUNCIL to offer secretarial services and facilitate the business community until a Business Association is functioning.	KAIKOURA DISTRICT COUNCIL to investigate manpower requirements, the available capacity and the need for a specialist in this role.

Public Relations

Issue: A successful tourism sector depends on a high level of public relations skills to ensure good relationships with stakeholders involved in the sector, all of whom have diverse needs and aspirations. These relationships are vital to attain the co-ordination, co-operation and integration of stakeholders in the community and public relations is therefore critical for tourism managers.

Objective	Action 1 (13.20)	Action 2 (12.30)	Action 3 (14.54)	Action 4 (14.95)
KTDAB to strive for a high level of excellence in respect of its Public Relations function.	The public relations portfolio to prepare a Public Relations Protocol. To include, community awareness programmes, disaster situations, liaison with National and Regional authorities, liaison with neighbouring District Councils, schools and training institutions and the business community.	A nominated committee member shall be responsible for dealing with public relations and maintaining the protocol. The nature and extent of the public relations function may warrant a sub-committee.	KTDAB shall consult with Ngati Kuri in respect of issues in which the Tangata Whenua have an interest.	KTDAB will ensure that the public relations spokes-person is fully trained to deal with the media in all situations, from promotions to crisis situations.

Alliances and Partnerships

Issue: Mutual benefits can derive from partnerships between institutions and organisations, particularly when resources are limited as in Kaikoura. As such KTDAB, (through the council) needs to establish alliances with the private sector, educational institutions, government organisations, neighbouring districts and overseas cities that will the benefit the tourism industry.

Objective	Action 1 (9.99)	Action 2 (8.93)	Action 3 (6.33)	Action 4 (8.43)
KTDAB to seek alliances and partnerships where mutual benefit can be derived in the following areas: • Co-operative Marketing • Research and Development • Education and Training • International relations • Regional Co-operation • Product development	Co-operative marketing strategies for local tourism businesses need to be fostered and enhanced. Specifically where a company undertakes international marketing resulting in benefits to all Kaikoura businesses, a more equitable arrangement needs to be sought. (This would fall under the ambit of the marketing strategy).	Alliances with Universities must be investigated. Formalised arrangement can assist with obtaining relevant information where the university is aware of specific need, which also meets curriculum, and student needs.	The sister relationship with Lahaina, Hawaii must be nurtured and developed for mutual benefit.	KTDAB to investigate cost-effective ways business training needs can be met and to bring training to the local businesses through collaboration with the business community and Polytechnics.

Finances

*Issue***:** Implicit in KAIKOURA DISTRICT COUNCIL's funding policy is the principle that expenditure is recovered from people receiving benefit from the expenditure. When expenditure is not specific to a beneficiary and the general community gains the benefit, expenditure is recovered on the basis of economic efficiency, tourism planning and management, falls within this category. Tourism has a multi-disciplinary nature and as such the cost for its planning and management falls within several of Council's existing functional and budgetary areas, examples of these include:

•   Local Representation and Democratic Process,

•   District Planning,

•   General Management,

•   Statutory Planning, and

•   Environmental Development

It would be possible to create a tourism, research and development, marketing and promotions function within Environmental Services where funding could be balanced between General Rates, Uniform Annual Charges, Subsidies and Grants and other revenues.

Objective	Action 1 (17.64)	Action 2 (16.80)	Action 3 (12.94)
KAIKOURA DISTRICT COUNCIL to ensure that a funding and operational regime exists for tourism research and development, marketing and promotions.	KTDAB to prepare a Business Plan for it's functions in respect of tourism planning, research and development, marketing and promotions. This Plan should include, the following: • Functions of the KTDAB, • Human resources, • Operational expenditures such as equipment, materials, and office space, • KITI-functions, • Attendance of exhibitions, trade fairs, conferences etc. • Training costs, • Financial strategy for skills development, scholarships etc. and • Revenue resources, partnerships, alliances and joint ventures.	The budgetary requirements in terms of the Business Plan shall be submitted to the Council for sanctioning and incorporation into the KAIKOURA DISTRICT COUNCIL Annual Plan, Funding Policy and Long Term Financial Strategy.	Contestable funding services to be put into operation.

Research and Monitoring

Issue: Plans and decision-making is dependent on maintaining quality information systems and continuous monitoring is essential. Such information includes, visitor flows, market size and segmentation, duration of stays, accommodation patterns, transport patterns and growth rates. Some of this can be obtained from external sources, but it is critical to know what is happening in Kaikoura and that adequate systems are put in place to do this.

Lincoln University's research provides for a good understanding of tourism within Kaikoura, but Kaikoura is in a development phase and changes therefore occur quickly. Existing research together with this strategy provides an excellent platform for developing a tourism information system in Kaikoura and a partnership arrangement with an educational institution will offer the opportunity to keep the information updated and in a structured manner without excessive costs.

This information system can also be part of the broader information requirements for District Planning, Coastal Management Strategies and State of the Environment Reporting.

Objective	Action 1 (8.33)	Action 2 (9.15)	Action 3 (6.71)	Action 4 (8.66)
KAIKOURA DISTRICT COUNCIL to have in place an integrated Tourism Information System that would provide a continuous decision-making aide in respect of tourism planning, management and marketing.	The KTDAB in consultation with the Environmental Services Department of KAIKOURA DISTRICT COUNCIL to design an integrated tourism information system.	KAIKOURA DISTRICT COUNCIL to investigate alliances and partnership with the Tourism Research and Education Centre at Lincoln University.	The KTDAB to liase with the tourism industry with specific reference to KITI, in respect of the development of an integrated tourism information system and the maintenance of such system.	KTDAB's Business Plan to include a section on research and monitoring.

Natural Disasters and Social Unrest

Issue: Social unrest or more particularly natural disasters in Kaikoura can have major implications for tourists and residents alike. In Kaikoura risks include earthquakes, heavy rain and tsunamis, these could isolate Kaikoura from the rest of New Zealand and contingency plans need to be in place with regard to both residents and tourists. Such experiences are traumatic for all concerned but more so for tourists who are not familiar with the area and will also be concerned with contacting family and friends at home.

Objective	Action 1 (7.51)	Action 2 (6.07)	Action 3 (7.00)
KTDAB to ensure that the Civil Defence contingency plans include issues relating to tourists.	KTDAB to liaise with civil defence in respect of provisions for tourist needs in their contingency plans.	KTDAB through Lincoln University to request a postgraduate student to do a research paper on tourist needs when natural disasters or civil unrest occurs.	KTDAB public relations protocol to include dealing with the media during disaster situations. This to be in liaison with Civil Defence.

2   Human Resource Development

Leadership Development

Issue: The SWOT analysis identified leadership as a critical weakness in Kaikoura's tourism sector, tourism is an industry with an array of divergent interests and as such good leadership, while difficult is also essential and will ensure the successful implementation of the strategy.

Leadership is the action taken to influence other people to take effective action and it is evident from the SWOT analysis that generic leadership functions are lacking in Kaikoura. In addition to the lack of leadership skills, Kaikoura, as a small town, has the problem of losing potential leaders and talented youth to larger urban centres.

This problem is not overcome easily due to low salaries paid in small towns and the limited market place to accommodate everybody. These realities need addressing as they contribute to a successful business and management environment, one solution is to pour energy into developing the existing leadership and the youth, while some will be lost from the town, those that remain will have the benefit of leadership training.

Objective	Action 1 (9.54)	Action 2 (10.09)	Action 3 (6.86)	Action 4 (6.23)
KAIKOURA DISTRICT COUNCIL to ensure that the Council, the KTDAB, the business community and Kaikoura's youth are exposed to, and encouraged to participate in leadership development programmes.	KAIKOURA DISTRICT COUNCIL to undertake a needs assessment within Kaikoura's community in respect of leadership and business training, (this assessment could can be undertaken by a at a minimal cost).	KAIKOURA DISTRICT COUNCIL to investigate appropriate leadership development programmes that can be provided at an affordable cost.	KAIKOURA DISTRICT COUNCIL to liaise with schools and the business community in respect of sponsorships of youth leadership programmes.	KTDAB to investigate potential scholarships for Kaikoura youth in a tourism programme. The scholarship to include a period of bonded employment in Kaikoura.

Education and Skills Development

Issue: Workshops also revealed the general skills level of the tourism industry in Kaikoura was poor, the lack of skills relates to customer service and hospitality. As KTDAB identified service excellence as one of the key competitive focus areas for Kaikoura, it is important that skills levels and commitment to excellence is improved.

Objective	Action 1 (8.80)	Action 2 (8.95)	Action 3 (8.44)	Action 4 (8.49)
KTDAB to ensure the tourism industry participates in education, training and support programmes that contribute towards improved skills levels and customer service.	KAIKOURA DISTRICT COUNCIL to carry out a needs assessment of the tourism industry in respect of hospitality skills and business training. (This could be carried out by student at minimal cost).	KAIKOURA DISTRICT COUNCIL to investigate hospitality training in consultation with the tourism industry.	The KTDAB to negotiations with Polytechnics to establish selected hospitality courses.	KTDAB and business community to work with schools to develop work experience programmes.
	Action 5 (5.64)	Action 6 (6.00)	Action 7 (6.40)	Action 8 (7.40)
	KTDAB to assist businesses by facilitating 'staff-exchanges' and to identify opportunities for networking with other institutions, where mutual benefit can arise.	KTDAB to develop a community support programmes for newcomers to the community as well as the business world.	Kaikoura Information and Tourism Incorporated (KITI) to mentor new tourism related businesses.	KTDAB to investigate government funding schemes for skills training programmes.

3   Community Involvement

Tourism Awareness

Issue: The increase in visitors to Kaikoura has been dramatic and resulted in a mixed community response, not allowing its residents time to adapt to changes to their environment. At present however the negative impacts have been outweighed by increased employment, to ensure that this stance continues, a proactive intervention is required and by initiating community awareness programmes and involving the community in the planning process the public will be eased into change where the conflict between expectations and reality is minimised.

The development of an effective relationship between KTDAB and the community not only ensures the capacity of the community will provide additional monitoring tools and avoiding the 'drawing of battle lines' between community and industry. The effect of which invariably filters through to visitors and contributes to the decline of the industry, it is also important however that the industry realises that not all residents regard tourism positively and certain sectors of the community are less comfortable with change then others, a heightened awareness within the industry will also contribute towards a greater sensitivity in respect of host communities.

Kaikoura's community, including its businesses needs to develop a better understanding of visitor behaviour to remove unwanted prejudices and provide visitors with a quality experience. The improved awareness levels and knowledge base will contribute towards the potential extension of the destination life cycle before major intervention is required.

Objective	Action 1 (15.55)	Action 2 (11.87)	Action 3 (5.26)
KTDAB to ensure increased levels of Tourism awareness within Kaikoura's community in order to avoid undue expectations in respect of economic outcomes as well remove potential hostility within the host community.	KTDAB to embark on a comprehensive community participation and awareness programme, through public meetings, small group consultation and media coverage.	KTDAB to obtain regular media coverage on latest tourism activities in Kaikoura as well as latest research findings from institutions such as Lincoln University.	KTDAB and Business Association to arrange seminars or talks on tourism related topics, such as visitor experiences and host-visitor relationships. Also, research papers can be placed in the library or published in local newspapers.

4   Product Development

Attractions

Issue: Research has shown that marine mammals are the primary attraction for visitors to Kaikoura who stay longer than required for a convenience break. KTDAB felt that the core attraction of Kaikoura was and should be the marine mammals and marine life. The conservation of the marine life, natural scenic beauty, unique geomorphologic features and excellent local climatic conditions are secondary attributes, which provide the superb ambience for a true natural resource based tourism product.

Such a strong focus on a limited number of core brands has the inherent limitation of offering an extremely focused attraction and reducing potential visitor experience in Kaikoura, exacerbating the seasonal nature of Kaikoura. Broadening the attraction base without compromising the core focus will be one of the essential challenges of the tourism strategy.

The potential for broadening Kaikoura's attractions is helped by its environment through nature-based opportunities, such as mountaineering, rock climbing, wilderness experiences, and farm stays, also there are significant natural fauna features such as Tree Mountain Daisy and native Broom, endemic to Kekerengu which could be attractions in their own right. Within the context of the core attraction, they have the advantage of being compatible nature-based activities, which could extend the visitor's stay or provide alternative option when the weather inhibit marine animals visits.

Additional, expanding the marine mammal theme outside the realms of pure nature would be a viable solution for an extension of the activity base as well as the peak season. The development of marine museums and interpretation centres with an educational and conservation focus has been suggested and needs further investigation.

The development of Kaikoura as a conference venue and holding events is a way of broadening the attraction base without compromising the core theme. Seafest is well established but the infrastructure to host meaningful conferences need upgrading. It is important however, that such events are compatible with the prevalent environmental and cultural ethos of tourism in Kaikoura, the marketing and promotions strategy needs to harmonise with this ethos.

The development of an anchor hotel development could fulfill the role of creating the necessary infrastructure for suitable conference facilities with the existing accommodation providing variety in scale. New product development and marketing does not lean toward 'boosterism' where growth demands take the lead, and while taking heed of the dangers of 'boom and bust' situations, the local economy needs certain threshold sizes to provide momentum and stability which such an 'anchor' hotel development could provide. The blending of such a development with existing Kaikoura townscape and character is imperative to achieving a successful outcome.

Underpinning the Kaikoura product development strategy is the need to provide the visitor with a total quality experience. This experience is not only reflected in the enjoyment of the activity but in the total service provided and level of presentation, safety, and customer service.

Objectives	Action 1 (7.95)	Action 2 (8.70)	Action 3 (7.63)	Action 4 (10.42)	Action 5 (9.96)	Action 6 (8.35)
Marine mammals and its associated marine life are Kaikoura's core attraction, with secondary attraction base being nature-based scenic beauty and related outdoor activities.	KTDAB to support the development of nature-based tourist attractions, such as mountain trails, farm stays, backcountry safaris and hunting.	Nominated a task team to investigate development of an anchor hotel development inclusive of conference facilities.	Nominate a task team to investigate the conference opportunities, infrastructure and capacity, marketing and feasibility exercises.	KTDAB investigate and develop an events portfolio blending marine mammal, and environmental themes and Kaikoura character.	KTDAB to develop quality performance standards in respect of all attractions, e.g. safety, presentation, user-friendliness.	Visitor Management Strategies are to be developed for all tourist attraction areas.
The tourism product of Kaikoura to present its visitor with a quality experience in respect of all activities at all times.						
The tourism attraction range for Kaikoura to be broadened, while retaining the central nature-based ethos, with emphasis on quality.						

Image and Brand Development

Issue: Image, identity, brand, logo, icon, label, trademark and symbol create a mental picture of a product or place, these pictures tells a story about the object and therefore marketers use brands and images to sell products. Without the intimate knowledge of a person, product or place, people rely on their mental images for decision-making Kaikoura therefore has to determine the image it wishes to portray to ensure the desired tourism development outcomes.

Workshop sessions by KTDAB suggested the following aspects to be key components of a Kaikoura tourism image or brand: Marine mammals – whales, Sea products, Small coastal town, Quality environment, Service excellence, Clean Green Image,

These items help to portray Kaikoura's quality Image, which may be reflected in: The Kaikoura icon, The Kaikoura townscape, Kaikoura architectural themes, Kaikoura promotions, Kaikoura events, Kaikoura customer service, and Kaikoura environmental awareness and conservation
In addition to the above, Kaikoura through Whale Watch has developed an international reputation inclusive of an international tourism award.

Objective	Action 1 (14.66)	Action 2 (13.84)	Action 3 (12.38)
To develop the Kaikoura Quality Image, which is to be reflected in all spheres of the tourism environment.	KTDAB to prepare an action plan for developing, promoting, and maintaining the Kaikoura Quality Image brand. Including the following: Design approval of a Kaikoura icon (may be by competition). Development acceptance of performance standards. Development of an awareness programme. Provision of the required training programmes. Development of an incentive, implementation, maintenance, control system. Addressing the financial implications.	The Kaikoura Quality Image must be marketed firstly, internally within the Kaikoura community and secondly to the outside world.	The Kaikoura Quality Image to be marketed within the business, commercial community whereby other Kaikoura products can also carry the brand name.

Infrastructure

Issue: Tourist activities depend on public infrastructure, tourists' uses roads, parking, water, solid and wet waste disposal, parks and reserves and toilets. Other social services such as medical care, and safety and security are less observable but still important to tourists, any successful tourism development depends upon quality services being provided and maintained.

A state of the environment report prepared by Lincoln University, Resource Management Students, showed that local public and tourists in general were more than satisfied with the observed level of service provision. The report did however point to certain water quality problems, which is receiving attention.

It is important that KAIKOURA DISTRICT COUNCIL, reflects the Kaikoura Quality Image in delivering services, noteworthy is the 'clean green image' portrayed Kaikoura, KAIKOURA DISTRICT COUNCIL aspirations towards 'zero waste' status confirms their commitment to the green image. Tourists respond favourably to such initiatives, but such concepts have to be adopted by the local community as well as tourists. It is important that the public is presented with the broader picture in order to avoid unnecessary animosity based on skewed perceptions, public amenities add value to the local community as well as the visitor experience.

Objective	Action 1 (10.86)	Action 2 (15.93)
The KAIKOURA DISTRICT COUNCIL shall strive to meet service excellence standards in respect of the provision and maintenance of all public services.	KTDAB to develop and maintain a monitoring system whereby the tourism industry can identify problems and areas for improvement, relating to visitor experiences.	KAIKOURA DISTRICT COUNCIL to formulate a statement, setting out some basic information and Council policy in respect of services costs as it relates to tourism, as well as the rationale behind the policy.

Transportation

Issue: Kaikoura benefits from its location on State Highway No 1 and the trunk rail line between Christchurch and Picton, this location provides Kaikoura with excellent access and provides good exposure to New Zealand public and visitors not aware of Kaikoura's attractions.

Kaikoura is not responsible for maintenance or management of these transportation systems, both do however affect the tourism industry, in terms of travel safety, convenience and promotional opportunities. For example, special train arrangements in respect of train time schedules for the Kaikoura - Christchurch rail link may improve travel opportunities by rail.

It is necessary for KTDAB to constantly research tourist experiences and needs regarding travel along these systems and liaise with the relevant authorities. Kaikoura fortunately has a small airport, however, the capacity of the airport is limited in terms of aircraft size. Lengthening of the runway has been an issue for some time and it is necessary to re investigate the upgrading of the airport.

Objectives	Action 1 (7.61)	Action 2 (8.00)	Action 3 (8.23)
To ensure that the optimum utilisation of the trunk transportation infrastructure is pursued.	KTDAB to investigate needs of visitors regarding the opportunities offered by trunk line transport services, (i.e. train, bus services and passenger cars).	KTDAB to liase with the relevant road and rail authority regularly regarding safety, convenience and general service levels.	KAIKOURA DISTRICT COUNCIL to initiate a new investigation into the potential upgrading of the Kaikoura airport.

Accommodation

Issue: Ensuring sufficient visitor accommodation is critical to the growth of tourism, the Lincoln University research showed that 65 per cent of overnight visitors using either backpacker or motor camp accommodation. Although provision of accommodation facilities is market driven, accommodation providers must be aware of trends and needs, poor knowledge in this regard will inhibit the industry responding to opportunities and research is required, to provide the latest data.

Also workshop sessions showed standards of service were not always good, and that there is a need for developing skills, a set of quality standards and branding of accommodation.

Objectives	Action 1 (8.57)	Action 2 (8.56)	Action 3 (10.58)	Action 4 (9.10)
Ensure a sufficient quality range of accommodation and bed numbers to ensure sustainable growth rate.	Develop an information system in respect of the accommodation sector of the tourism industry.	Encourage all accommodation establishments to be Qualmark certified and to deliver service standards accordingly.	Proceed with the development of Kaikoura Quality Image standards for accommodation establishments.	Investigate and implement training programmes for accommodation providers compatible with the standards for Kaikoura Quality image.
Ensure Market information is available for accommodation providers.				

Urban Development and Townscape

Issue: It is important to the residents of Kaikoura that the atmosphere of 'The small coastal village' is retained, 'We don't want to be another Queenstown' is a frequently quoted clique of Kaikoura residents and the townscape and urban environment is where change is most visible. Increased traffic, large parking areas, air and noise pollution, neon lights, billboards and tall multi-storey buildings reflect the urban growth phenomenon, which is associated with tourism development.

Tourism development respecting the heritage value and integrity of Kaikoura will find support in the community, such tourism also endures the sequence of time and will retain the loyalty of visitors. KTDAB has endorsed this and seeks to, not only retain the existing character, but also enhance the qualities of the built environment.

The District Plan manages the effects of urban growth and a chapter on Development and Tourism has been added to the Proposed District Plan. This chapter deals with effects of urban growth, efficient use of physical infrastructure, business growth and development and Kaikoura's character and townscape, the economic significance of tourism and visitor accommodation activities. Although the plan addresses these critical issues, the Resource Management Act provides for consent applications to permit certain activities, it is at this point that the challenge lies and KTDAB needs to engage in this process to ensure the aims of the tourism strategy and the aspirations of the community are not compromised.

The District plan encourages efficient use of urban infrastructure, such as school buildings, community and church halls and civic premises and these could be used for training courses, small-scale conferences.

The Kaikoura District Council Coastal Management Strategy is also useful for ensuring Kaikoura's character is not swamped by over development. One objective of the Coastal Management Strategy is, 'to retain, and where possible enhance, the existing character of the coastal landscape while implementing appropriate landscape measures' (Tonkin & Taylor, 1998, p.2). This policy contains substantial landscape proposals, which are dependant on funding to implementation. This policy needs to be recognised and used by KTDAB to manage the townscape for the benefit of both tourists and visitors.

Research by Lincoln University showed that tourist had little interest in the residential areas of Kaikoura, their cognitive maps showing knowledge of the coastal, commercial and the seal colony area. There is therefore very little 'invasion' of the host community's residential areas, but special care is required with the commercial areas and coastal landscape.

Objectives	Action 1 (8.58)	Action 2 (8.89)	Action 3 (9.25)	Action 4 (8.13)	Action 5 (9.25)
To retain the existing 'small coastal village' character of Kaikoura and the amenity values contained therein.	KTDAB to recognise the Coastal Management Strategy and seek to implement strategies with significant influence on the townscape and coastal landscape.	KTDAB to comment on all consent applications in the commercial and foreshore areas.	KTDAB to participate in developing guidelines for advertisement and road signage in Kaikoura and the district.	KTDAB to promote the development of townscape themes for the tourism areas in Kaikoura.	KAIKOURA DISTRICT COUNCIL to develop an inventory of urban facilities that can be made available for cross-purpose use, (this can be linked with investigation into conference centres).
To promote efficient use of urban infrastructure that benefits both the tourism industry and the owners of such facilities.					

Conservation

Issue: With Kaikoura's primary tourist attractions being marine mammals and nature-based, there is an implication that the environment is under threat of over-utilised. Negative effects on the marine life and natural environment would destroy the resource base of Kaikoura Tourism and as a result the natural resources need to be monitored and managed well. While management of marine life and coastal areas is the Department of Conservation responsibility, the good relationship that exists between DoC and KAIKOURA DISTRICT COUNCIL need to be retained to foster co-operative management of these areas.

Managing the coastal and marine areas has inherent problems relating to human behaviour and over use, and the control of numbers and determining suitable carrying capacities is a problem especially when effects of human behaviour on marine and terrestrial animal life are concerned. Visitors management is one of the key challenges if integrity of the natural resource is being compromised and research by Lincoln University suggest that this is the case.

Declaring the area a World Heritage site was mooted at the workshops and is feasible; Whale Watch is driving this and need support in this. Another option is to investigate developing a RAHUI, which is a closed area decreed by local Iwi, this closure is temporary by nature and allows for the rejuvenation of fish species and is a management tool supported by local fisherman.

Objectives	Action 1 (6.00)	Action 2 (12)	Action 3 (4.00)	Action 4 (9.00)
Maintain the diversity, health and productivity of marine coastal processes and ecosystems.	KTDAB is to provide assistance and support in investigating the establishment of a World Heritage Site.	Investigate decreeing a Rahui by Iwi in the local area.	Establish the carrying capacities of visitors to the seal colony areas and develop appropriate management strategies in consultation with Department of Conservation.	Develop awareness and educational campaigns in conjunction with Department of Conservation.
	Action 5 (12.00)	Action 6 (12.00)	Action 7 (9.50)	
Establish and effectively manage a system for conservation and protection of certain areas to maintain the diversity of marine and coastal ecosystems.	KTDAB to liase with the Department of Conservation on improving visitor management systems and the management of sensitive environmental areas.	KTDAB to feed Kaikoura aspirations to Department of Conservation, especially in respect of the granting of permits and concessions.	KTDAB to liase with Lincoln and Canterbury Universities regarding the establishment of longitudinal research programmes on marine life systems.	

5   Marketing

Issue: Marketing strategies frequently focus on 'getting bums on seats', its important to realise however, that this does not apply in all instances and the core values, vision statement and tourist product set out by KTDAB indicate that care be taken in developing an appropriate marketing strategy. The aim is to attract tourists that have an appreciation for the Kaikoura product, the small coastal village character, and the prevalent environmental ethos, while the challenge is to extend the season, widen the attraction base and increase the visitor flow to a stable level without compromising the environmental and social considerations.

Objectives	Action 1 (16.00)	Action 2
Develop a Marketing Strategy aiming at promoting Kaikoura destination in a manner that meshes the Kaikoura core product and ethos with a potential tourist that recognises and respects the Kaikoura Quality Image.	KTDAB is to appoint a task team, an officer, or a consultant to prepare a Marketing Strategy in accordance with the objective.	Develop a marketing strategy, that includes: Internally market to promote 'collective marketing' The Canterbury Tourism Strategy The TIANZ strategy Government's tourism policies and strategies International and national trends International focus to be retained Whale Watch, being an anchor attraction Links and alliances with districts and other towns (Marlborough, Hurunui and Methven). International sister city relations Conferences at Kaikoura focus on environmental, marine and educational targets. Appropriate promotional media, (television, internet and publications).

Chapter 4
Implementation

4.1   Incremental Framework

The 'Incremental Framework-approach' of the Kaikoura Tourism Strategy means that the strategy will be implemented over time as resources allow. The dynamic nature of tourism, the vastness of the industry, diverse nature of stakeholders and disciplinary perspectives together with the limited financial resources do not allow itself to implement the strategy intact.

Although the implementation of Kaikoura's Tourism Strategy will be lead by KTDAB, perhaps with the development of an operational plan to ensure all aspects of the strategy are successfully adopted. It is also important that the strategy is implemented within the legislative frameworks of both the territorial authority and Central Government departments. Within such context the Strategy will also be implemented through, amongst others, the following instruments:

The Kaikoura District Plan, the Resource Consent, the Kaikoura District Council Annual Plan, the Kaikoura District Council Funding Policy, the Kaikoura District Council Long Term Financial Strategy, the Kaikoura District Council Coastal Management Strategy, the operations of Kaikoura Information and Tourism Incorporated (KITI), and Department of Conservation.

It is anticipated that the tourism strategy will develop its own momentum, broadening its influence sphere as some of the strategies are being implemented and new implementation instruments evolve.

4.2   Immediate Priorities

Having provided a basic framework for the management of tourism in Kaikoura it is essential that the management process develops momentum and that it be sustained in order to reach the very objectives set out and aspired by the community.

As finances and manpower resources are limited it was necessary to prioritise the strategies set out in chapter four. As these were rank various clusters of actions become evident, the activities falling within the top 30per cent of rankings can be grouped into the following five suites of activities:

•	Constitutional
•	Financial (Business plan)
•	Public Relations/community participation
•	Marketing Strategy
•	Projects

These suites need to be addressed concurrently, and it is evident that they form the foundation for getting the Kaikoura Tourism Strategy in motion.

Appendices

Appendix (i)

Members of the Tourism & Development Advisory Committee

J Diver (Chair)

J Abernethey (Deputy Chair, Mayor)

Ted Howard

D Smith

L Buurman

J Macphail

M Morrissey (Department of Conservation)

R Cleal

S Chaffey

A Riordan

M Soloman (Ngai Tahu)

T Kahu (Ngai Tahu)

Appendix (ii)

Guidelines for the Kaikoura Tourism & Development Advisory Board Constitution

Membership

Representative groups

Particular expertise

Sectoral representation

Geographic representation

Gender composition.

Implementers of the Tourism Strategy

Tangata Whenua representation

Functions

Establish the terms of reference of the Committee.

Preparation of budgets for implementation

Monitoring of Tourism Strategy outcomes

Regular revision of Strategy

Execution of Action plans

Public Relations and liaison with the broader community

Establishment of portfolios: Executive & Strategic

Marketing

Liaison

Finance

Kaikoura Quality Image brand

Education & Training

Research and Development

Environmental management

Others as may be required

Appendix (iii)

Contents of Public Relations Protocol

Number of members of PR portfolio

Powers, duties and functions of the portfolio

Budgetary provisions for Public Relations

Suggested functions:

      Crisis Management in respect of disaster situations

      Damage control in respect of poor relationships

      Community Awareness programmes, inclusive of school programmes.

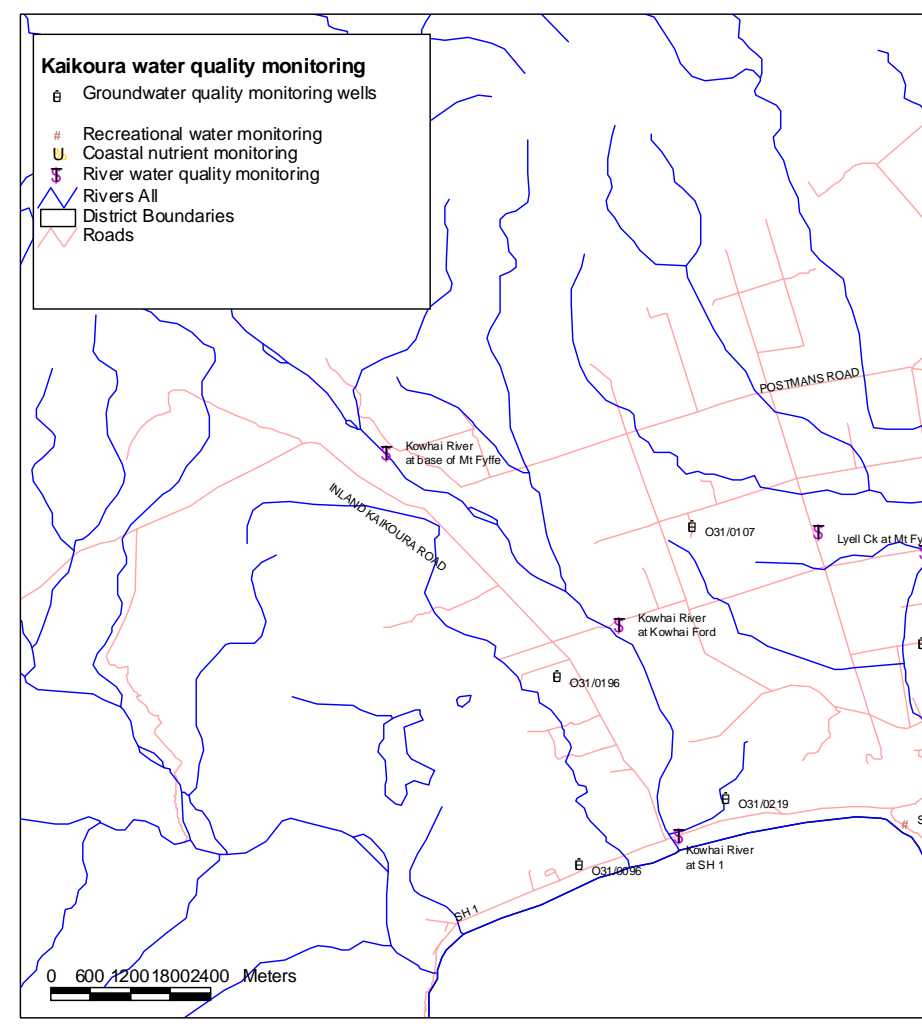   Addressing community concerns.

      Liaison with all media

      Ensure representation on all relevant local organisations, (Business Association, KITI)

      Ensure representation and/or liaison with Regional tourism organisations, adjacent regions, and relevant NGO bodies.

      Liaison with Central government

Appendix E
Locations of waterways quality test sites in the Kaikoura District

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Kaikoura water quality monitoring

⊕   Groundwater quality monitoring wells

\#   Recreational water monitoring
U   Coastal nutrient monitoring
   River water quality monitoring
   Rivers All
   District Boundaries
   Roads

POSTMANS ROAD

INLAND KAIKOURA ROAD

Kowhai River
at base of Mt Fyffe

O31/0107

Lyell Ck at Mt Fyf

Kowhai River
at Kowhai Ford

O31/0196

O31/0219

S

Kowhai River
at SH 1

O31/0056

SH 1

0   600 1200 1800 2400   Meters

Appendix F
Vehicle Registration by vehicle and fuel type for the Kaikoura District
(based on a Kaikoura postal code = 8280)

VEHICLES RECORDED ON THE MOTOR VEHICLE REGISTER AS AT 05/06/02
WITH A POST CODE (RESIDENTIAL ADDRESS) OF 8280

	FUEL TYPE				
	DIESEL	**LPG**	**OTHER**	**PETROL**	**TOTAL**
ATV				5	5
BUS	25			7	32
MOBILE MACHINE	8			1	9
MOPED				20	20
MOTOR CARAVAN	14			9	23
MOTORCYCLE			1	73	74
PASSENGER CAR/VAN	305		1	1,757	2,063
SPECIAL PURPOSE VEHICLE				1	1
TRACTOR	45			8	53
GOODS VAN/TRUCK/UTILITY <=2700KG GVM	184	1		210	395
GOODS VAN/TRUCK/UTILITY >=2701KG GVM	189			89	278
TOTAL	770	1	2	2,180	2,953