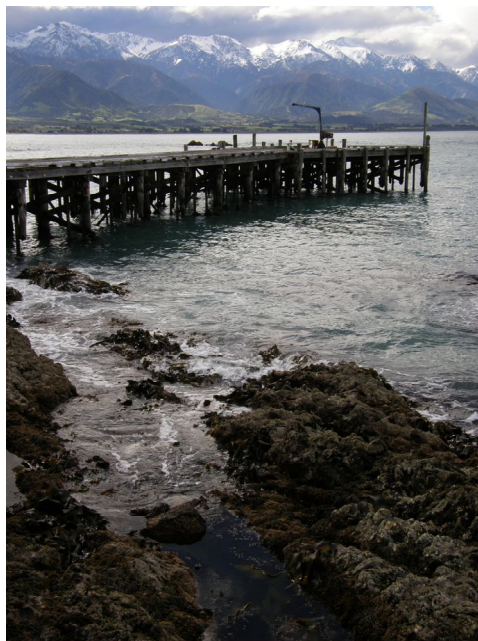

Kaikōura Coastal Marine Values and Uses

A Characterisation Report



Te Korowai o Te Tai o
Marokura
(Kaikōura Coastal Marine
Guardians)

Revised
Second Edition
May 2008

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Contributing Authors

Andrew Baxter

Barry Dunnett

Darcia Solomon

Dennis Burrman

Derek Jones

Dick Cleall

Gina Solomon

John Nicholls

Larnce Wichman

Laurel Tierney

Maurice Manawatu

Nicole Sheriff

Nigel Scott

Paul McGahan

Peter Lawless

Raewyn Solomon

Rob Gerard

Ted Howard

Preface

Much has happened since the first edition of this report was completed in December 2007 and publicly released 16 February 2008 by the Honourable Jim Anderton, Minister of Fisheries. People connected with the Kaikōura coast have begun to have their say and the Kaikōura Guardians have embarked on preparing a strategic plan for the future. To preface this revised edition of the report we reproduce below the speech given by Raewyn Solomon to open the public forum. We believe that this statement sets out most clearly what Te Korowai of Te Tai o Marokura is all about. Jim Anderton's speech to open the Forum is included as Appendix 1.

Te Korowai o Te Tai o Marokura, literally means the cloak of Te Tai o Marokura. Culturally it means to lay the cloak or mantle of Ngati Kuri over Te Tai Marokura, caring for the seas around Kaikōura.

Both meanings are interconnected and both are entwined.

What is Te Tai o Marokura?

Te Tai o Marokura is the realm of Tangaroa, god of the sea. Tangaroa was the first husband of Papatuanuku (the Earth Mother), before she wed Ranginui (the Sky Father). The fishing harbours and sheltered coastal areas of the eastern coastline of Te Waipounamu were created by Tuterakiwhanoa, the mokopuna of Ranginui. Tuterakiwhanoa was sent by his grandfather to enable human occupation of the lands of Te Waka o Aoraki – the lands of Te Waipounamu, that formed when the waka navigated by Ranginui's sons ran aground on a hidden reef and turned to stone and earth.

Te Tai o Marokura is an integral part of Ngati Kuri history and cultural identity. The immense importance of the area historically, culturally and spiritually is as dynamic as its geography and its life forms that depend on it.

It is acknowledged statutorily, as a recorded statement of the relationship between Ngai Tahu and the Kaikōura coast.

Who are Te Korowai o Te Tai o Marokura?

We are a group of people standing for local leadership in the care of Tangaroa and in decisions on the use and protection of our marine environment. We have come together in response to the many issues and uses of our coast to develop a management strategy for our coast – the strategy is a korowai for Te Tai o Marokura. We are weaving that korowai.

Our vision is a future where the moana (sea) of Kaikōura is richer and healthier. We want it to be used sustainably, providing for the needs of present and future generations. In this vision, people will interact with the sea in ways that care for its mauri (life force). People's activity will be managed to respect the natural connections between living and physical elements and sustain the sea's dynamic ecological balance.

The Guardians do not yet know exactly what this management strategy will look like or what measures it will contain. But we do have a vision for the Kaikōura marine environment, and as a first step we have started collecting information. We want you to read our Characterisation

Report and add to that kete of knowledge. We want you to tell us what issues need to be resolved and what opportunities you see for the future.

The purpose of the strategy is to create agreement within Kaikōura with the management agencies such as DOC and Minfish and with other people connected with this place, on how our community vision will be achieved.

After this public forum we will engage in the work of producing the Strategy. We want a really detailed strategy that deals with all the big issues we face. In relation to each topic we will detail:

- *Clear objectives on what we want to achieve*
- *Identification of the issues and opportunities*
- *Strategic actions saying what needs to happen to achieve the objectives*
- *How Te Korowai proposes the strategic actions will be implemented*
- *The methods that should be used, from local customs and education, to legal controls and enforcement*
- *Monitoring is obviously needed so we will know if the objectives are being achieved*

How are we doing this?

To begin the How, we have to look at the history.

It is hard to pinpoint exactly when all this started for us, for it was already regular discussion when I first started this job, some 10 years ago. When our Upoko was alive, issues and solutions about Tangaroa was the normal topic of conversation and as a family who had depended throughout history on the sea, it is as important and as natural as breathing air. So when our DoC reps raised this in their Conservation Board meetings and when Mark raised it with the Conservator – Neil Clifton, much discussion had already been had.

But it was time to put this talk into action and the time was right to do it, all the balls were lining up. Before Runanga and DoC could initiate something like this, it had to sort out its own relationship first and so our Kaumatua came together with DoC, and did just that. To succeed on this journey the foundation has to be sound, so the principles of this particular relationship, were discussed and settled first.

It was at this time also that Te Poha o Tohu Raumati our Environmental Management Plan was being collated and written and an integrated management Strategy for our coast, was always going to be included as an implementation method within this plan, as a response to the many coastal issues we had before us.

Things were coming together, and then, the Government introduced the Foreshore and Seabed legislation. We were upset to say the least about that, and still are, and with DoC we sulked and then licked our wounds and then became more determined with this kaupapa. Because we understand the power of the collective, and the influence it can have especially, an integrated community collective. And because we are a small community and reasonably isolated, it is that much easier to get integrated, in order to put something like this together, and for it to succeed. And so, we came back with DoC and resumed planning for the development of this strategy.

A list of individuals was put together, and people were approached, deliberately chosen and recognized as being a user of Tangaroa, with acknowledge of the coast and as a member of an organization, with an interest in the coast. We approached key individuals also and discussions were had about the importance of their knowledge and commitment and how we couldn't do this without them. We need each other to do this, we cannot look after this resource on our own and

in a place like Kaikoura, in a country such as NZ, because of it's population, if anybody could do it we could. The Fiordland model inspired us and we thought if they can do it, we can too.

Potential facilitators were identified and discussed at the very first meeting. And Laurel Tierney was the person we decided to approach, she agreed and work began straight away. Laurel was chosen as she already had success with the Guardians of Fiordland model. She was able to get us organised quickly or rather she initiated us, so that we could organize ourselves. We decided from the outset that decisions would be arrived at by consensus and gifts and gains would be the tool to enable us to arrive at decisions. Laurel kept us on track which kept our momentum going so that when we were part way through the Characterisation Report, and she got sick, and had to resign, we immediately knew, that we would have to find somebody quickly to replace her. And although it didn't take long to find that replacement, we knew we had to go through a formal process to find somebody, because the job is a specialist job.

And so Peter came along, and slotted in like he's always been here.

We are a diverse group, with different values and it's most important that we are diverse, because this strategy must cater to a diverse community, it must fit snugly with a community. In order to make decisions in a community such as this, there has to be wide ranging debate, to get the very best and most robust decisions. We have a huge task ahead of us and facilitation was always going to be critical, to achieve something like this.

We have been working away for the last two years as a group. When it comes to the hard stuff, we know from the outset, that we will be gifting and gaining, because we can only truly integrate by gifting some things and gaining others. It is not easy, it is serious work and hard work and done by a group of people who are committed because of the one thing we do have in common and that is, we value and respect Tangaroa. It is vital we do this strategy and we have to be proactive about it, otherwise we're just sitting back whining about it. That is what being responsible is, and what Kaitiakitanga is.

We have grown to where there is a degree of trust in each other, but the real measure of trust will be with the development of the Strategy itself, and its important to note, that the journey to get there is just as important as the Strategy. For the strategy will only be as good as the group is. And when it's finally written, it isn't the end, it too, is only the beginning.

The Characterisation report that we are launching today, is the evidence base for the Management Strategy. No report like this is ever conclusive and finished. It gives us a starting point for the discussion with the wider community and it is vital that others add to that kete of knowledge and tell us what we have wrong. We felt it vital though to lay our cards on the table and making our thinking accessible to all.

Why are we doing this?

I have deliberately left the why to last, because it has so many answers and not enough time for this speech, but in a nutshell it is best described like this.

Geographically we live on a ledge. The Hikurangi Trench is only a mile off our shore and it is deeper than the mountains are high, so it was always going to be a dynamic environment and because of this, we were always going to have users competing for its gifts. SH1 runs through our front yard and with the onset of four wheel drive vehicles and tourism, it is so much easier for visitors to come and visit, fish and enjoy our coast. Obviously this has a huge impact on our environment also.

We have watched our coast being abused and uncared for, not just by visitors but also by locals, and we got sick of it. We had to take action, and we were dammed if anybody else was going to do it, we certainly didn't want decisions made, about our place, by people that don't live here, so there is nobody else to do it, because at the end of the day, we live with it and breath it, and nobody else will ever care about this place, quite like we do.

How long will it take to complete the Strategy?

Well, it will depend on how hard the issues are, how much the community and the wider groups get in behind the process, how committed we are to reaching agreement and when we think we have enough to provide a sound base for the future. The Guardians are committed to going as hard and as fast as we can. The issues are not going away and we need decisive action. Our aim is to get a draft strategy out for your comment later this year. If we can we will be delivering it back to Mr Anderton and his colleagues before the election so that they can declare where they stand as they put themselves forward for another term.

What we do will only be a draft because the Strategy needs the whole of this community standing behind it and we need an opportunity to work with wider regional and national interest groups as well. We are committed to a formal submissions process and to those submissions being publicly available as we move to finalize the strategy next year.

The feedback we get today, is vital, we are endeavouring to get as many people and organisations feeding into this, as we can because once it is finalized this Strategy will effect every user of this coast and so it is important that we get that feedback. So please take copies of the Characterisation Report. If they run out we will print more. Take copies of the comments form and distribute as far as you can.

Finally, thank you so much for taking the time to come here today and join your passion for this coast with that of Te Korowai.

I would like to leave you with a pepeha (proverb) to ponder

Mahia te kai, ka timu te tai ka pao te torea

Translated means, Work at getting food, for the tide is ebbing and the oyster catcher strikes, in other words when the opportunity offers, one must not sit idle and let it pass.

Tena koutou kaotoa
Na Raewyn Solomon
16 February 2008

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Background to the Report



1 Introduction

The purpose of this report is to provide a strong foundation of information that will support the work of Te Korowai o Te Tai o Marokura (the Kaikōura Coastal Marine Guardians) as they lead the Kaikōura community as kaitiaki of Kaikōura's marine environment.

The Kaikōura Coastal Marine Guardians envisage a future where the moana (sea) of Kaikōura is richer and healthier. They want it to be used sustainably, providing for the needs of present and future generations. In this vision, people will interact with the sea in ways that care for its mauri (life force). People's activity should be managed to ensure that interrelations between living and physical elements sustain the sea's dynamic ecological balance.

The Guardians do not yet know what this management strategy will look like or what measures it will contain. But they have a vision for the Kaikōura marine environment, and as a first step have started collecting information.

This report is a summary of that information – a kete (basket) of knowledge, to which interested parties can add. It aims to provide a starting point for the community's formulation of a management strategy. This strategy will be the expression of a shared wish for a better future for Kaikōura's marine ecosystem.

The sea around Kaikōura is unusually productive and supports a great diversity of life. Kaikōura Peninsula has been a natural focus for human settlement and interaction with the sea. For 400 years it has been the home of the Ngāti Kuri hapū of Ngāi Tahu. Its natural beauty and abundant resources have been central to later immigration and development. These, however, have brought challenges. With modern technology comes the capacity to exploit the sea's resources – to the degree that much of what is valued can now be destroyed.

Historically, several factors have contributed to the establishment of Te Korowai o Te Tai o Marokura, including:

- an application by the Forest and Bird Protection Society in 1992 to establish a marine reserve around Kaikōura Peninsula
- discussion by the Nelson Marlborough Conservation Board about marine issues
- aspirations of Te Rūnanga o Kaikōura for a more holistic approach to managing the coast in their rohe (tribal lands)
- discussions between the ūpoko (head) of Te Rūnanga o Ngāi Tahu and the Minister of Conservation.

Te Korowai was formally established in August 2005 on the initiative of Ngāti Kuri of Ngāi Tahu. Ngāti Kuri invites all local people to share in the role of kaitiaki (guardians) of the natural environment. This is an unusual and important milestone in the maturing relationship between the first peoples of Kaikōura and the local people of today.

Following public responses to this report, the Guardians will lead strategy development, planning, and the implementation of practical and legal steps to create what the community wants for its marine environment.

2 The Vision

Because the Te Korowai vision is intentionally bicultural, it is expressed here in Māori then in English:

Mā te whakapūmau i te mauri me te wairua o 'Te Tai o Marokura', ko mātou ngā kaitiaki o ngā taonga a Tangaroa kei te arataki i te iwi hapori, ki te whakangaruru i te mōmona me te waioara o te āhuatanga o te Taiao, mō ngā whakatipuranga o aianeī mē ake tonu ake.

By perpetuating the mauri and wairua of 'Te Tai o Marokura', we as kaitiaki of Tangaroa's tāonga are leading the community to achieve a flourishing, rich and healthy environment, where opportunities abound to sustain the needs of present and future generations.

Māori terms have been included in the English version because their unique meaning cannot be fully translated. These concepts are at the core of Te Korowai's vision, and their full meaning will become apparent as we share the journey ahead. The journey aims to enrich the relationship of people with their marine environment.

Without pretending to delve into the deeper meaning of the Māori terms, the following is a simple explanation of their use here.

Mauri is the life force of the living system, and *wairua* its spirit. These can be enhanced or diminished by human actions, but continue to exist in their own right whatever we do.

Te Tai o Marokura are the seas around Kaikōura.

In this context, *kaitiaki* are the guardians who recognise the need to care and take responsibility for the natural environment. The vision recognises that members of the wider Kaikōura community are the kaitiaki of the Kaikōura marine area. Te Korowai acknowledges the importance of local people acting to protect the resources in their natural world.

Tangaroa, the Māori sea god, embodies the sea in its entirety – both its seen and unseen elements. *Taonga* are the treasures of Tangaroa – all those wonderful facets that make the sea a dynamic living system.

3 Physical Boundaries of the Management Area

The area covered in this report and proposed for the management strategy is the coast and sea between Waiau toa (Clarence River), south to Tutae Putaputa (Conway River) (Figure 1), from mean high-water springs out to seaward boundaries defined by the issues being raised.

This report deals with activities and issues on coastal land where there are:

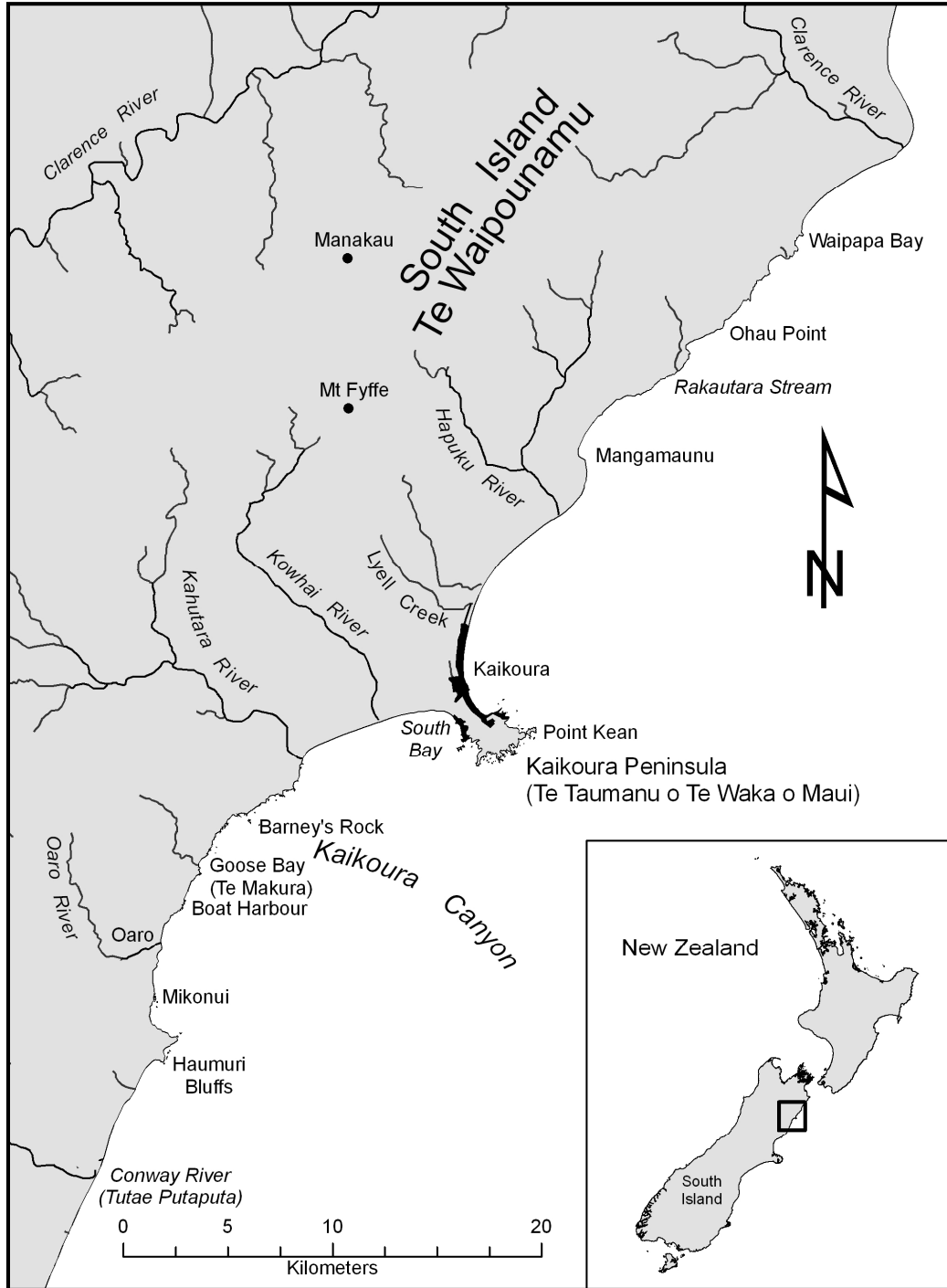
- direct effects on the coastal marine area (e.g. pollution or fresh water flowing off the land)
- effects on the amenity value or uses of the coastal marine area
- effects on coastal and marine wildlife
- cross-boundary management issues (such as boat ramps that span a boundary).

Te Korowai o Te Tai o Marokura agreed that although the legal boundary of Ngāti Kuri is from Pari Nui o Whiti south to the Hurunui River and inland to the Main Divide, a smaller geographical area centred on the Kaikōura community rather than multiple communities would be more practical for resolving issues. A further phase of work could cover the entire marine area in the Ngāti Kuri rohe.



Tracheloichismus melobesia Striped clingfish, New Zealand endemic.
This specimen photographed in aquarium, Kaikōura.
Courtesy Dr Paddy Ryan, Ryan Photographic.

Figure 1: Kaikōura coastal area and catchment



4 Terms of Reference

The following terms of reference govern the principles and practices of Te Korowai o Te Tai o Marokura (hereafter called Te Korowai).

- 1 The Kaikōura coastal management initiative is an integrated initiative that includes all aspects of the Kaikōura coastal environment, its values and uses.
- 2 The purpose of the initiative is to develop a comprehensive, integrated management strategy for the Kaikōura coastal marine area (defined in section 3).
- 3 Specific outcomes in the management strategy will be advocated as a package that incorporates all the values and uses of the Kaikōura coastal marine environment.
- 4 Te Korowai has been set up to develop the integrated management strategy.
- 5 Te Korowai's membership reflects the inclusive nature of the initiative and is made up of:
 - community members who represent Te Rūnanga o Kaikōura, Te Rūnanga o Ngāi Tahu, commercial and recreational fishers, charter boat operators, tourist operators, and Kaikōura coastal marine protection and environmental groups
 - agencies/authorities, including Te Rūnanga o Ngāi Tahu, the Department of Conservation, Ministry for the Environment, Ministry of Fisheries, Environment Canterbury and the Kaikōura District Council.
- 6 The role of Te Korowai's community members is to:
 - contribute knowledge and experience about their values and uses of the coastal marine area
 - identify issues associated with the Kaikōura coastal and marine environment
 - work with each other, and with members of their own sectors, to resolve these issues
 - collect information and conduct surveys
 - involve other members of the sectors they represent
 - inform participating groups of progress
 - disseminate information about Te Korowai's progress to the community.
- 7 The role of Te Korowai's agency/authority participants is to:
 - provide information about the Kaikōura coastal marine area
 - collect information and conduct surveys
 - assist with data analysis as needed and where possible
 - advise the group about agency functions and government policy
 - advise the group about management provisions in use, or available for use
 - provide administration and documentation to support the group where possible
 - keep agency managers informed about progress
 - disseminate information about Te Korowai's progress to the agencies when relevant or required.

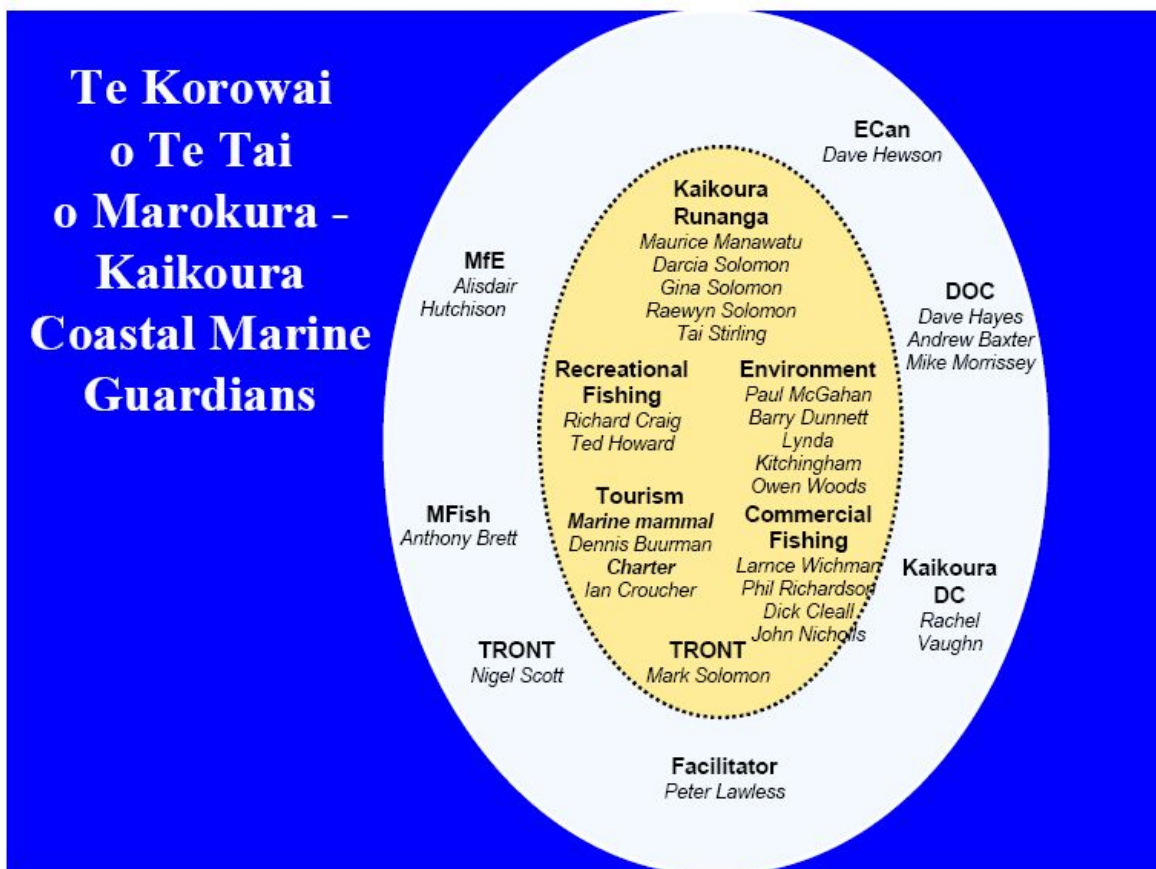
- 8 Consultation with the wider community and compiling the management strategy are shared projects of all Te Korowai members.
- 9 Community members are the formal decision-making body of Te Korowai and make their decisions by consensus.
- 10 Members who find they have a conflict of interest will convey this to the group for discussion and resolution.
- 11 When specific expertise is required by Te Korowai, the person/organisation best able to provide that expertise will be identified and invited to share that information with the group.



5 Te Korowai o Te Tai o Marokura Membership

Te Korowai membership includes all local groups directly involved with the coastal marine area. Individuals representing these groups can be seen in the centre or 'yolk' of the 'egg' (Figure 2). These are the members of Te Korowai agencies and authorities responsible for managing aspects of the coastal marine area play a support role. They appear in the outer ring or 'white' of the egg.

Figure 2: The Te Korowai 'egg model' (created by Laurel Tierney)



Note: Te Rūnanga o Ngāi Tahu (TRONT) is in both the yolk and the white of the egg, reflecting their role as owner of the largest marine tourism operations in Kaikōura, and as a legal entity representing the interests of Ngāi Tahu.

Table 1: Membership of Te Korowai o te Tai Marokura, 2007

Community	Agencies/authorities
Te Rūnanga o Kaikōura (TROK) Maurice Manawatu (founding Chair) Darcia Solomon Gina Solomon Raewyn Solomon Tai Stirling	Department of Conservation Dave Hayes Andrew Baxter Mike Morrissey
Te Rūnanga o Ngāi Tahu (TRONT) Mark Solomon	Te Rūnanga o Ngāi Tahu (TRONT) Nigel Scott
Commercial fishers Dick Cleall (wet fish) Larnce Wichman (CRAMAC 5) John Nicholls (current Chair) Phillip Richardson (PAU3)	Ministry of Fisheries Tony Brett
Recreational fishers Richard Craig Ted Howard	
Tourist operators Dennis Burrman Thomas Kahu Ian Croucher	Ministry for the Environment Alisdair Hutchison
Coastal Marine Protection Owen Woods Paul McGahan	Environment Canterbury David Hewson
Environment Barry Dunnett (RFBPS) Lynda Kitchingham (RFBPS)	Kaikōura District Council Rachel Vaughn
Administration Rachel Pharazyn (earlier administration by Gina Solomon and Carly Sommerford)	Co-ordinator/facilitator Peter Lawless (founding facilitator Laurel Tierney)

6 The Process of Developing an Integrated Management Strategy

Set out below are the steps completed and those proposed by Te Korowai.

Developing an integrated strategy for Kaikōura's marine environment has involved the following:

- Define a vision (done).
- Define the physical boundaries of the management area (done).
- Gather information about all aspects of Kaikōura's coastal marine values and uses (this report is the first part of this).

The next stages proposed are:

- **Issue identification and resolution**
 - Identify the issues facing the coastal marine area and organise them into a logical framework.
 - Clarify each issue and assign a priority.
 - Determine whether more information is needed to understand the issue, and acquire this information.
 - Develop an agreed solution.
 - Decide on management objectives.
 - Select the most appropriate management tools to address the issue.
- **Strategy development**
 - Compile a draft strategy setting out the issues and proposed management tools.
 - Provide a progress update to the wider groups whose interests are represented on Te Korowai, and invite their comments on the draft strategy.
 - Adjust suggested management measures, if required.
 - Release and distribute the draft strategy for broader public consultation.
 - Record, summarise and analyse submissions.
 - Incorporate Te Korowai's decisions about submissions and finalise the strategy.
 - Submit the strategy to the relevant ministers and agencies/authorities for implementation of the parts requiring legal force, while continuing to lead action locally. Follow-up with agencies where necessary.

Characteristics Values and Uses

The following is a description of the current state of the Kaikōura coastal marine environment, the pressures on it, and the responses already being made by the community. Documenting the area's natural features and how the coastal strip and wider catchment are being used is fundamental to developing an integrated management strategy. This information has been gathered by Te Korowai from a variety of sources, to help build a common understanding of the area and identify important issues.



7 The Kaikōura Coastal and Marine Environment

7.1 Biophysical attributes of the Kaikōura coast

More detailed information on many of the matters covered below is provided in a recent University of Canterbury literature review (Marsden, 2007) commissioned by the Department of Conservation.

7.1.1 The physical environment

Water

Water movement (hydrology) along the Kaikōura coast is complex. This is due to the interplay of currents and water masses, and the shape of the sea bed, in particular the Kaikōura Canyon (Figure 3).

The Kaikōura coast broadly marks the northernmost position of the Southland Front – the coastal extension of the Subtropical Convergence, which is the front separating warmer, more saline, nutrient-rich subtropical water from cooler, fresher, nutrient-poor subantarctic water. Annual water temperatures range from around 8.5°C to 19°C.

The Southland Current brings relatively cold waters up the east coast of the South Island to Kaikōura. Here it diverges: one part moves north towards Cook Strait and the Wairarapa coast; the remainder meanders eastwards, meeting the warmer southward-flowing East Cape Current before travelling offshore along the Chatham Rise. A large and variable offshore eddy forms from time to time off Kaikōura. There is also evidence of upwelling occurring off Kaikōura, and this is thought to help support a rich pelagic food web.

The tidal range is relatively small, peaking at around 1.8 metres. Tidal currents can nevertheless be strong in places, notably around Kaikōura Peninsula.

There is little shelter along the coast except in the lee of Kaikōura Peninsula and Haumuri Bluffs. High-energy oceanic swells and storm waves are not uncommon.

Water clarity is variable and often poor due to the amount of sediment in inshore waters. Heavy sediment is a result of the coast's exposure to southerly storms and oceanic swells, the influence of the rivers, and the softer rock types (such as siltstone) that dominate much of the coastline.

There are numerous streams and rivers, small and large, along the Kaikōura coast. The Conway and Clarence rivers are the largest, though the Hurunui and Waiau rivers further south deposit the most sediment.

Several streams and rivers have permanent or semi-permanent lagoons behind the upper beach. These range in size, from quite small at the mouths of the Oaro and Kahutara rivers, to larger at the Conway and Clarence river mouths. The stability, size and salinity of these lagoons vary depending on river, sea and tidal conditions. The Conway River lagoon is about 100 metres wide and runs parallel to the coast for about 1.5 kilometres. It is cut off from the sea for much of the time, except when the river breaks through the high beach gravels during and after floods.

Substrates

The Kaikōura coast is well known for its rocky shores – a mix of rocky headlands, wave-cut platforms dissected with gullies and channels, irregular bedrock reefs and boulder shores interspersed with small, crescent-shaped gravel and cobble beaches. The bedrock and boulder shores are dominated by resistant greywacke, though mixes of other sedimentary rock types (sandstone, siltstone and limestone) are also found on Kaikōura Peninsula and the Haumuri Bluffs, and there are several limestone outcroppings along the coast. Shores around Kaikōura Peninsula have the greatest range of substrate types on the entire coast.

More extensive mixed sand and gravel beaches are found to the north and south of Kaikōura Peninsula – at Oaro and north of Waipapa, extending up to and beyond the Clarence River mouth. In places these beaches may be 200–300 metres wide and capped by low dunes.

The boulder-rock and bedrock reefs extend subtidally for variable distances – from tens of metres to several hundred metres. The most extensive subtidal reefs occur off Kaikōura Peninsula, stretching offshore to about 1.5 kilometres. Rocky outcrops and isolated subtidal reefs can also occur beyond the true reef edge and sporadically off the sand/gravel beaches.

Beyond the near-shore reefs and sand/gravel beaches lies a range of sediment habitats: pebble/gravel pavement (especially off the tip of the peninsula); wave-worked sand sculpted into ‘mega-ripples’; fine sand and mud. The general pattern is for sediments to become finer with distance from the shore.

The Kaikōura Canyon extends in a north-easterly direction off Goose Bay (Figure 3). Here, ravines over 1,000 metres deep come within two kilometres of the shore. The canyon traps and diverts sediment travelling up the coast, carrying it offshore and then northwards. The walls of the Kaikōura Canyon are mostly muddy, although there is some emergent bedrock where the canyon edge is too steep to hold fine sediment.

7.1.2 The biological environment

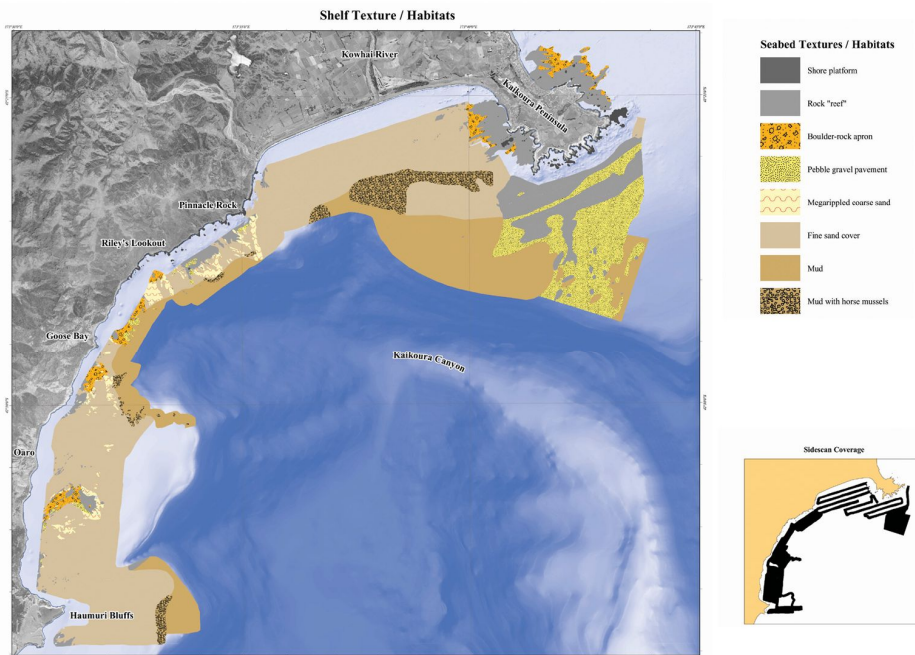
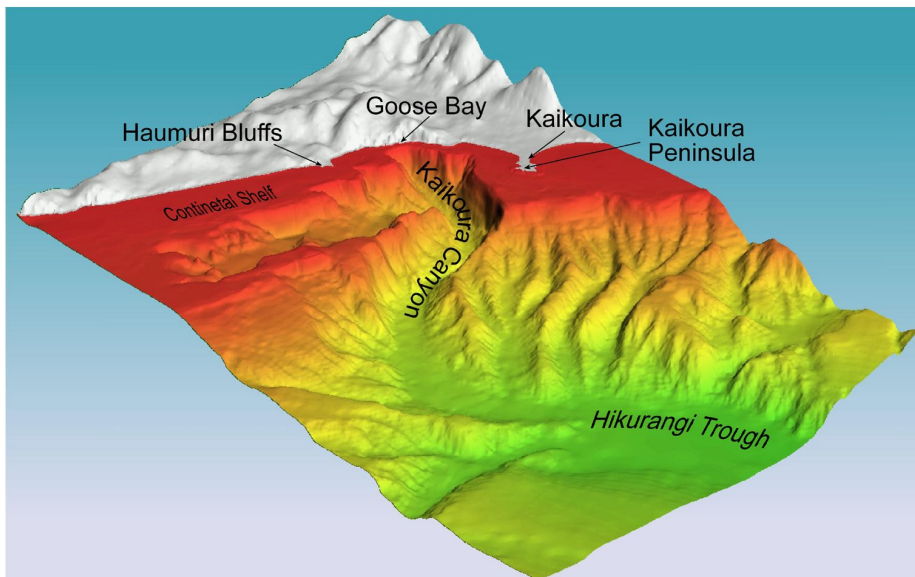
General

Although there is a reasonable body of scientific information about the ecology of the Kaikōura coast, it is quite patchy, reflecting where the survey effort tends to have been directed. Most attention has focused on:

- the intertidal zone, generally due to ease of sampling
- the intertidal and immediate subtidal zones around Kaikōura Peninsula, due in part to the proximity of the University of Canterbury field station in Kaikōura
- marine mammals (e.g. fur seals at Kaikōura Peninsula and Ōhau Point, and wider studies on dusky dolphins and sperm whales).

The complex and variable nature of the physical environment, including the particular hydrological conditions found at Kaikōura, translates overall into a biologically diverse marine ecosystem. Kaikōura is known as an oceanographic and biological nodal point – a place where ‘north meets south’, or more accurately, where ‘warm meets cold’. There are many overlapping distributions of typically northern and southern species, forming a biologically diverse intermediate region between the North Island/Cook Strait area and Banks Peninsula/Otago Peninsula. Overall, algal communities tend to show a strong southern affinity (supporting cold-water species such as bull kelp (*Durvillea antarctica*), bladder kelp (*Macrocystis pyrifera*) and the kelp *Desmarestia ligulata*, while animal communities reflect a warmer, more northern influence.

Figure 3: Kaikōura Canyon and sea bed around and south of Kaikōura Peninsula (Source NIWA)



This transitional zone between northern and southern species is perhaps best illustrated by the limpet fauna. All of the commonly known mainland limpets are represented at Kaikōura, including those more closely affiliated with northern and southern shores. Radiate limpets (*Cellana radians*) and ornate limpets (*C. ornata*) are common inhabitants of the rocky shore in Kaikōura like elsewhere in New Zealand. However, Kaikōura marks the northern limit of cold-water Otago striated limpets (*C. strigilis redimiculum*), and the southern-most location of dentate limpets (*C. denticulata*) living on siltstone. The golden limpet (*C. flava*), which favours calcareous bedrock from the North Island's East Cape south, is found at Kaikōura, as is the star limpet *C. stellifera*, a subtidal species more common in northern latitudes. Other examples of northern species reaching as far south as Kaikōura include the surf barnacle (*Chamaesipho brunnea*) and the big hand crab (*Heterozius rotundifrons*).

The studies of Kaikōura Peninsula highlight the area's high physical and biological diversity; however, apart from intertidally, there have been no comparative studies to place this biodiversity into context with the rest of the Kaikōura coast.

Intertidal reefs

Kaikōura's rocky intertidal zone supports a diverse mix of plants and animals, with density and diversity generally increasing towards the low-tide mark. At least 45 algal species and 120 invertebrate species have been recorded from the intertidal zone at Kaikōura Peninsula alone.

The diverse array of intertidal seaweeds along the Kaikōura coast is dominated by species such as coralline algae (e.g. *Corallina officinalis*), Neptune's necklace (*Hormosira banksii*), zigzag brown seaweed (*Cystophora* spp.), brown tongue weed (*Glossophora kunthii*), carrageen (*Gigartina* spp.) and sea lettuce (*Ulva* spp.). Sea wrack (*Carpophyllum maschalocarpum*), *Marginariella boryana* and bull kelp (*Durvillea* spp.) dominate the low-tide mark.

Bull kelp (*Durvillea antarctica* and *D. willana*) is arguably the most visible seaweed along the rocky coast, forming a dense mass of leathery fronds at the low-tide mark. It is an important habitat and food source (alive, detached or washed up), and dampens wave energy along the coast.

Seagrass (*Zostera*), while uncommon along most of the Kaikōura coast, forms distinctive but changeable beds at various sites on the peninsula. These beds trap sediment and allow it to build up, supporting an invertebrate community specially suited to this habitat.

Invertebrate diversity on Kaikōura's rocky shores generally increases with habitat complexity and decreases towards the high-tide mark. Encrusting and mobile invertebrates (e.g. barnacles, limpets, chitons, kina, crabs, starfish, bivalves, bristle worms, anemones and sponges) form typical sequences of species down the intertidal reefs. Most of Kaikōura's intertidal invertebrates are shellfish, with more than 30 mollusc species (comprising various grazers, filter feeders, scavengers and carnivores) often recorded from any one reef. Key invertebrates found intertidally are periwinkles (*Austrolittorina cincta* and *A. antipodum*), the common topshell (*Melagraphia aethiops*), cat's eye (*Turbo smaragdus*), dentate limpet (*Cellana denticulata*), and the large barnacle *Epopella plicata*. Compared with Banks Peninsula, Kaikōura's rocky shores have fewer barnacles and a greater density of limpets.

Marsden and Fenwick (1978) surveyed 30 intertidal sites between Cape Campbell and the Haumuri Bluffs, and based on the diversity of habitats and species and levels of human disturbance, identified several 'sites of major biological interest':

- Haumuri Bluffs, platforms, and the large boulder beach west of Spy Glass Point were biologically richest.
- Limestone platforms and the boulder beach at Oaro had a rich invertebrate fauna and the greatest diversity of red algae.
- Kaikōura Peninsula had the greatest range of intertidal habitat types.
- Rocky headlands, outcrops and boulder shores from Waipapa to Hāpuku, and again between the Kahutara and Oaro rivers, had diverse plants and animals, including a wide range of sessile (fixed) and motile (mobile) invertebrates, especially on the boulder shores.

Subtidal reefs

Most information about the ecology of Kaikōura’s subtidal reefs relates to areas on or around Kaikōura Peninsula. It is difficult to extrapolate these findings to rocky coasts north and south of the peninsula. There are likely to be similarities as well as differences in habitats, communities and species.

The following five general habitat types (Table 2) have been described for the rocky, near-shore subtidal zone around Kaikōura Peninsula. These zones overlap, but the descriptions nevertheless help illustrate the range of reef habitats.

Table 2: Subtidal habitats recorded at Kaikōura Peninsula¹

Subtidal habitat	Description
Rocky reef with mixed algal stands	Areas of highly broken and convoluted reef with a mixed assemblage of <i>Marginariella boryana</i> , <i>Carpophyllum maschalocarpum</i> , <i>Landsburgia quercifolia</i> and <i>Ecklonia radiata</i> . Between 0 and 20 metres.
Rocky reef with <i>Marginariella boryana</i> forest	Areas of highly broken reef with a dense forest of <i>Marginariella boryana</i> . Common in depths less than 10 metres.
Flat reef with algal carpet	Areas of flat reef with a thick layer of low-lying brown and red algae. Small isolated patches of <i>Marginariella boryana</i> and <i>Landsburgia quercifolia</i> occur sporadically. Common in depths less than 10 metres.
Rocky reef with crustose coralline algae	All rock surfaces thickly encrusted with coralline algae. <i>Marginariella boryana</i> and <i>Carpophyllum maschalocarpum</i> are present, but in small patches. Sparse covering of sponges (<i>Halichondria</i> and <i>Tethya</i>). Common in depths greater than 15 metres.
Sandy bottom, patch reefs and coralline turf	Small patch reefs surrounded by sand. Encrusted with coralline turf and sparse numbers of large <i>Marginariella boryana</i> . Common in depths greater than 15 metres.

Overall, subtidal seaweed forests at Kaikōura Peninsula are notable for their diversity and abundance of species, mostly mixed stands of large brown algae and carpets of red algae. Red and green algae tend to dominate below about 15 metres in depth. Encrusting coralline algae are particularly plentiful, and are often the main rock cover.

¹ Schiel and Hickford (2001).

A mixture of brown seaweeds, some quite conspicuous (notably bull kelp, *Durvillaea* spp.) at the sublittoral fringe, as well as sea wrack (*Carpophyllum maschalocarpum*), oak-leaf kelp (*Landsburgia quercifolia*) and the large-bladed *Marginariella boryana*, make up approximately one-quarter of the subtidal algae at Kaikōura Peninsula. About two-thirds of the species are red algae, which often form a dense understory beneath the brown algal canopy. There are far fewer green seaweed species, although sea rimu (*Caulerpa brownii*) and sea lettuce (*Ulva* spp.) can be abundant.

At Kaikōura Peninsula *Marginariella* spp., oak-leaf kelp (*Landsburgia quercifolia*) and red foliose algae are more plentiful, and sea wrack (*Carpophyllum* spp.) less so than at either Wellington or Banks Peninsula. The relative abundance of *Marginariella boryana* is particularly notable at Kaikōura Peninsula in contrast with rocky coasts surveyed at Wellington and Banks Peninsula.

The large bladder kelp *Macrocystis pyrifera* occurs intermittently along much of the coast but is not particularly common, presumably due to the coast's generally exposed shoreline. This species is known from semi-sheltered spots around the peninsula and in other isolated patches (e.g. the lee of Haumuri Bluffs and Bushett Shoal).

Conspicuous larger invertebrates (macro-invertebrates) known along the Kaikōura coast include rock lobster, pāua and various echinoderms (starfish, urchins, brittle stars and sea cucumbers). However, a survey of six shallow (<12m) subtidal sites around Kaikōura Peninsula in the summers of 1999/2000 and 2000/01 found lower densities than elsewhere in New Zealand of mobile macro-invertebrates, apart from the small grazing snail (*Cantharidus purpureus*) and two starfish species (this study was not designed to sample for rock lobsters). Even kina (*Evechinus chloroticus*), one of the country's most readily seen and common macro-invertebrates, was recorded as relatively scarce. Urchin barrens (where kelp has been denuded by grazing kina) do not feature along the Kaikōura coast as they do in many other parts of New Zealand, especially the North island.

While mobile macro-invertebrates may not be particularly numerous at Kaikōura Peninsula, attached and encrusting animals (e.g. sponges, bryozoans, feathery hydroids, sea squirts and their relatives the compound ascidians) are quite common on the subtidal reefs. They occur across a range of depths, although are more conspicuous (though not necessarily more abundant) deeper down, where algae start to thin out. Encrusting organisms can cover 20–40% of the rock.

Smaller mobile invertebrates can also be numerous. Sandhoppers (amphipods), for example, are the main organism associated with seaweeds at Kaikōura. There are 61 amphipod species, with densities up to 12,000 individuals per 200 grams wet weight of sea rimu (*Caulerpa brownii*).

Lagoons

There is limited information about the ecology of lagoons along the Kaikōura coast. Whitebait and eels will migrate up certain streams as conditions allow, and coastal birds (e.g. gulls, terns, shags and dotterels) are known to make use of ponded waters and margins.

The lagoon at the Conway River mouth is notable for its unusual salt marsh community: sea rush (*Juncus kraussii*) and jointed wire rush or oioi (*Apodasmia similis*) are absent, replaced by native sedge (*Schoenoplectus pungens*), which dominates. Raupō (*Typha orientalis*) fringes parts of the landward margins of the lagoon, and the agar seaweed *Gracilaria* sp. has also been reported in abundance. Relatively large numbers of birds use the Conway lagoon, including banded dotterel (*Charadrius bicinctus*) and black-backed gulls (*Larus dominicanus*).

Sediment shores and offshore sediment habitats

Few animals inhabit the mixed sand and gravel beaches of the Kaikōura coast, owing to the mobile nature of these shores. The most noticeable creatures are sandhoppers (amphipods), which shelter under washed-up seaweed or driftwood, and occasional slater-like isopods.

The more stable sediments beyond the turbulent surf zone are likely to support animals typical of offshore sediments along much of the east coast of the South Island. These include deposit-, suspension- and scavenger-feeding organisms such as assorted echinoderms (e.g. heart urchins, starfish, sea cucumbers and brittle stars), bivalve molluscs, predatory snails, crustaceans (e.g. hermit crabs, amphipods and burrowing shrimps) and some bristle worm (polychaete) species. Species assemblages and densities will vary between substrates and depths. Invertebrate densities can be very high; for example, in Sandy Bay, sandhoppers may number from 4,000/m² in winter to 12,000/m² in summer.

Beds of horse mussels (*Atrina zelandica*) have been documented in muddy offshore habitats between Kaikōura Peninsula and the Conway River. Deeper zones on the continental shelf are likely to be dominated by species such as bristle worms and peracarid crustaceans (e.g. mysid shrimps and amphipods).

Fish

Kaikōura has a relatively diverse fish fauna. Over 200 species have been recorded, reflecting the region's unique patterns of water movement, water temperature, and variety of habitats. However, reef fish are not as common or diverse as they are further north, consistent with a general north–south reduction in the diversity of reef fish species in New Zealand.

Common near-shore fish include butterflyfish (*Odax pullus*), banded wrasse (*Notolabrus fuciola*), spotty (*Notolabrus celidotus*), scarlet wrasse (*Pseudolabrus miles*), girdled wrasse (*Notolabrus cinctus*), blue moki (*Latridopsis ciliaris*), blue cod (*Parapercis colias*), tarakihi (*Nemadactylus macropterus*), marblefish (*Aplodactylus arctidens*), leatherjacket (*Parika scaber*), and various triplefins and clingfishes. At Kaikōura Peninsula the distribution of larger species depends on habitat type. Spotty is typically the most numerous reef fish across most habitats. Scarlet wrasse and girdled wrasse are densest over deeper rocky reefs covered with crustose coralline algae. Tarakihi, blue moki and blue cod tend to favour sandy/gravel bottoms with patches of reef, whereas banded wrasse is fairly widespread in moderate numbers. Butterflyfish favour areas with good macro-algal cover. Similar general trends would be expected along the remainder of the Kaikōura coast where there is comparable habitat.

There are numerous fish species offshore of Kaikōura. Over the continental shelf and beyond are hāpuku (*Polyprion oxygeneios*), ling (*Genypterus blacodes*), tarakihi (*Nemadactylus macropterus*), common warehou (*Seriola lalandi*), blue moki (*Latridopsis ciliaris*), hake (*Merluccius australis*), hoki (*Macruronus novaezelandiae*), flatfish, gurnard (*Chelidonichthys kumu*), red cod (*Pseudophycis bachus*), monkfish (*Kathetostoma giganteum*), sea perch (*Helicolenus percoides*), mackerels, pilchard (*Sardinops neopilchardus*), various sharks, rays and skates, rattails, lantern fish and squid.

Marine mammals

Haul-outs and breeding colonies of New Zealand fur seals (*Arctocephalus forsteri*) are common along the Kaikōura coast. The largest breeding colony is at Ōhau Point, north of Kaikōura Peninsula, with several hundred pups being born there each year. Significant numbers of seals also haul out on Kaikōura Peninsula and at Barney's Rock, but only limited breeding occurs at these two sites.

The seals' breeding season is from spring to summer. Males arrive at breeding colonies in spring to 'stake their claim' and await the females, who turn up in summer. Females give birth to a single pup, and mate again soon after.

Fur seals feed on a range of species and can be fairly opportunistic. However, their diet varies depending on locality, and typically just a few species make up most of the diet. At Kaikōura, myctophids (lanternfish), squid and octopus are the seals' major prey. Local observations suggest hoki and other fish are also significant in the diet. Lanternfish in particular are plentiful in deep water offshore of Kaikōura. These oil-rich, mesopelagic fish swim up the water column at night to eat zooplankton, and in doing so move into the diving range of the seals (and dusky dolphins; see below), which travel offshore to feed on them.

Female fur seals may forage at sea for several days before returning to feed their offspring. They can dive to over 200 metres, and it is thought they can swim at speeds of 30 kilometres per hour. The deep-water feeding grounds off Kaikōura are well within their diving and swimming range. Longer range migrations of hundreds to thousands of kilometres have also been recorded.

Fur seals are difficult to census; they can hide amongst the rocks, and at any one time a reasonable number may be at sea feeding. The fur seal population along the Kaikōura coast is currently estimated to be several thousand animals.

Dusky dolphins (*Lagenorhynchus obscurus*) are also a key component of Kaikōura's marine mammal fauna. There are an estimated 2,000 dolphins along the Kaikōura coast at any one time – part of a larger population of around 12,000 living off the east coast of the South Island. The population fluctuates as dolphins move into and away from Kaikōura at different times of the year. In autumn some dusky dolphins migrate northwards from Kaikōura to the top of the South Island – individuals identified at Kaikōura have been observed in and around Admiralty Bay, in the Marlborough Sounds. At the same time, there appears to be an influx of other dusky dolphins into the Kaikōura region from the south, or perhaps from the Chatham Rise. In late spring to early summer, there is a return migration. Dusky dolphin nursery pods (relatively small groups with very young calves) at Kaikōura are most common in spring (October and November), with an increase in number and pod size as summer progresses.

In summer, dusky dolphins typically come closer to shore during the day, moving off-shore at night to feed on mesopelagic fish (e.g. lanternfish; see above). They may eat some pelagic fish (e.g. pilchard and mackerels) by day, but activity at this time appears to be more socially orientated – resting, playing and mating. In winter the dolphins tend to be further offshore.

Sperm whales (*Physeter macrocephalus*) are present off the Kaikōura coast all year, although their distribution and numbers vary seasonally. There are two categories of whales: a small group of 'resident' individuals, found particularly in the Kaikōura Canyon (these receive most tourist attention and seem more tolerant of whale-watching vessels); and a more dispersed group of 'transient' whales that pass through the area (these are less tolerant of boat approaches). The whales are almost exclusively young males, 12–16 metres in length. Females and larger bulls visit Kaikōura rarely.

The whales are thought to be attracted to the Kaikōura coast because of its rich food resources. They dive 600–1,600 metres deep, and occasionally more than 2,000 metres, in search of squid (e.g. arrow and warty squid) and deep-water fish (e.g. sharks, ling and groper). Resident whales have been observed defending their Kaikōura Canyon territory from others.

Sperm whales spend much of their time feeding below the surface. Dive times vary, with an average of 40–45 minutes. Time spent at the surface also varies, but averages 9–10 minutes. The whales show little movement while at the surface – they are resting and recharging oxygen reserves in preparation for the next dive. Time at the surface is critical as it influences subsequent diving and feeding.

Hector's dolphins (*Cephalorhynchus hectori hectori*) are an endemic species found around much of the South Island, including the Kaikōura coast, though their distribution is patchy. The total South Island population is estimated to be 7,270, and comprises three genetic groups: West Coast South Island (Haast to Farewell Spit), east coast South Island (Marlborough to Timaru), and Te Waewae Bay and Porpoise Bay in the south.

Interbreeding between the three groups is thought to be very limited, if it occurs at all. Hector's dolphins have a restricted home territory, travelling only a few tens of kilometres (but generally less) within their home range. The limited dispersal of Hector's dolphins and restricted interbreeding between neighbouring groups means that the east coast South Island population, of which Kaikōura is a part, is likely to be made up of a genetic cline (where small genetic differences between neighbouring groups translate to significant differences over long distances).

There is little information about Hector's dolphin populations along the Kaikōura coast. An aerial survey in 1999/2000 estimated 100 individuals between Cape Campbell and Motunau; however, this estimate is imprecise, with a 95% chance that actual numbers lie somewhere between 34 and 305 individuals. Local knowledge suggests there may be more than 100, and there are certain areas where they tend to be found – commonly but in sporadic groups between the Clarence and Hāpuku rivers, and from Haumuri Bluffs to the Waiau River; and occasionally between Lyell Creek and the Kahutara River (including Kaikōura Peninsula), and between Black Rock and Haumuri Bluffs.

Hector's dolphins tend to stay near the coast. In summer during the day they favour dirtier waters close to shore (e.g. near river mouths and beaches), perhaps to avoid predators. There is growing evidence that they venture offshore at night, presumably to feed. In winter off Canterbury they appear to be more dispersed (up to 34 kilometres offshore), although similar offshore sightings have not been noted at Kaikōura.

Hector's dolphins eat a range of demersal (bottom-dwelling) and pelagic (open-water) species. They live to a maximum of about 20 years. Females reach sexual maturity between seven and nine years of age, and produce just one calf every two or three years, meaning their reproductive potential is very limited. Calving usually occurs between November and mid-February, and calves stay with their mothers for up to two years.

Humpback whales (*Megaptera novaeangliae*) pass northwards along the Kaikōura coast in winter, on their annual migration from their summer subantarctic feeding grounds to their breeding grounds in the tropics. Pods of orca or killer whales (*Orcinus orca*) also regularly visit the coast as part of their long-distance foraging migrations around New Zealand. Orca observed at Kaikōura have also been seen in Northland and Auckland.

A variety of other marine mammals also visit or pass through the Kaikōura region, including common dolphins (*Delphinus delphis*), large oceanic bottlenose dolphins in the company of pilot whales, southern right whale dolphins (*Lissodelphis peronii*), pilot whales (*Globicephala melaena*), southern right whales (*Eubalaena australis*), minke whales (*Balaenoptera acutorostrata*), fin whales (*B. physalus*), sei whales (*B. borealis*) and the very occasional blue whale (*B. musculus*) and leopard seal (*Hydrurga leptonyx*).

Birds

Kaikōura has a diverse seabird fauna, with albatross, petrel and shearwater species found throughout the year along with assorted shags, gulls, terns and others. There are various seabird guilds (groups that share the same food resources in an area), and sizes range from the smaller petrels and prions to the great albatrosses.

Hutton's shearwaters (*Puffinus huttoni*) are arguably the birds best associated with Kaikōura. They nest in the mountains behind Kaikōura and nowhere else in the world. With a population in the hundreds of thousands, they are very visible when feeding or roosting in large flocks, sometimes just a few hundred metres offshore. A new colony is being established on the peninsula as some insurance for the species, which faces a number of threats in the mountains. The breeding season finishes in autumn, with young birds making their first flight some 15 kilometres, with a drop in altitude of 1,500 metres, to the sea. In winter, Hutton's shearwaters leave for Australian waters.

The colony of red-billed gulls (*Larus scopulinus*) on the shoreline of Kaikōura Peninsula is a feature in summer. This colony is possibly the longest studied bird population in the world. Near the gulls is usually a colony of white-fronted terns (*Sterna striata*), which also breed at other locations along the coast. Southern black-backed gulls (*Larus dominicanus*) are also regularly seen along the Kaikōura coast.

Several species of shag can be observed. The black shag (*Phalacrocorax carbo*), little shag (*P. melanoleucos*) and pied shag (*P. varius*) are similarly black and white, while the spotted shag (*Stictocarbo punctatus*), which is exclusively marine, is more easily recognised. The latter breeds on Barney's Rock, and at times large groups can be seen at sea or roosting on gravel beaches.

Kaikōura's coastline has little in the way of tidal mud/sand flats or estuaries, and therefore lacks big flocks of migrant waders. The rocky shore platforms and storm-wrack are ideal habitat for ruddy turnstones (*Arenaria interpres*). The beach just before the peninsula car park is probably the easiest and most consistent place in New Zealand to see this migrant species, which breeds in the Arctic. Other waders found along the coastline are banded dotterels (*Charadrius bicinctus*) and variable oystercatchers (*Haematopus unicolor*), which breed locally, and pied oystercatchers (*Haematopus finschi*), which breed on inland river beds.

Reef herons (*Egretta sacra*) are no longer commonly seen in New Zealand, but it is still possible to spot them on a walk around the peninsula or south from Oaro. Blue penguins (*Eudyptula minor*) are also present, and breed where they are undisturbed.



8 Values and Uses of the Kaikōura Coast over Time

A wide variety of marine life combined with easy access has attracted many groups to the Kaikōura coast, for activities ranging from harvesting seafood to close encounters with marine mammals. New ways of using Kaikōura's coastal marine assets have evolved. The following chronology records when different activities began.

8.1 Chronology of uses

- Customary or traditional fishing has taken place along the Kaikōura coast for 800–1,000 years. A range of finfish and shellfish have been harvested from the shore and sea. Kaimoana (seafood) is regarded as taonga (treasure) from the sea.
- Subsistence and recreational fishing has been carried out by European settlers since they arrived in the area in the 1800s.
- Commercial wet fishing was first recorded in 1867, and since then has been a major activity in the coastal marine area.
- The commercial rock lobster fishery was established in the 1940s, with pāua being used as bait until the pāua fishery was established.
- The commercial pāua fishery began in the late 1950s, when shells were its focus. This changed to pāua meat in the late 1960s.
- Charter fishing commenced in a small way in the late 1980s, and grew in the 1990s.
- Commercial seal swimming began in 1987.
- Whale, dolphin and seal watching began in 1988.
- Commercial dive tours have been operating since the late 1980s.
- Dolphin-swimming operations began in the summer of 1989/90.
- The first aerial whale-watching operation commenced in 1991.



9 Ngāi Tahu Values and Uses of the Kaikōura Coast

9.1 Traditional values and uses

Te Tai o Marokura lies within the realm of Tangaroa, the atua (god) of waters, and is an integral part of Ngāti Kuri history and cultural identity. Tangaroa was the first husband of Papatūānuku (the earth mother), before she married Ranginui (the sky father). The fishing peninsulas and coastal areas of Te Wai Pounamu (the South Island) were formed by Tuterakiwhanoa, mokopuna of Ranginui. Tuterakiwhanoa sent his sons Marokura and Kahukura to shape the land. Waka o Aoraki (the lands formed when the waka navigated by Ranginui's sons ran aground on a hidden reef) was changed to stone and earth, and made suitable for human occupation.

The Kaikōura coastline took its name from Tama ki te Rangī, who visited during his explorations and caught and cooked crayfish over an open fire there. From this event the area was named Te Ahi Kai Kōura a Tamakiterangi (the crayfish-cooking fire of Tamakiterangi).

Because it was an attractive place to build permanent settlements, including pā (fortified settlements), the coast was visited and occupied successively by Rapuwai, Ngāti Wairangi, Waitaha, Ngāti Mamoe and Ngāi Tahu, who through conflict and alliance have merged in the whakapapa (genealogy) of the Ngāi Tahu whānui. This history is recorded in the battle sites, urupā and landscape features which bear the names of the tūpuna (ancestors). Prominent headlands, in particular, were favoured as defence sites, and became the headquarters for a succession of rangatira (chiefs) and their followers.

One of the leading sites in Kaikōura before European contact was Takahanga marae, which is still occupied by Ngāi Tahu. From the time Ngāi Tahu leader Maru Kaitātea took Takahanga pā for Ngāi Tahu occupation, the site became a staging post for the tribe's migrations south. Other pā in the area included Pariwhakatau, Mikonui, Oaro and Kahutara. Place names along the coast, such as the gardens of Tamanuhiri and the Waikawau River, record Ngāi Tahu history and point to the landscape features that were significant to people for a range of reasons.

The struggles, alliances and marriages arising out of these migrations eventually resulted in a stable, organised and united series of hapū, located at permanent or semi-permanent settlements along the coast that corresponded with mahinga kai sites.

Mahinga kai refers to the custom of gathering food. It encompasses the life-supporting food itself, the place it is found, and the practice of gathering it. Mahinga kai involved great seasonal hīkoi (marches) to gather kai from the mountains to the sea (ki uta ki tai).

The mahinga kai custom underpins Ngāi Tahu culture. It is central to the tribe's relationships with places, species and resources, to their cultural, spiritual, social and economic wellbeing, and is a vehicle for transferring traditional knowledge from generation to generation.

As well as the crayfish for which Kaikōura is famous, the whole area offered a bounty of mahinga kai, including:

- a range of kaimoana (seafood)
- fish from the sea
- freshwater resources from lagoons and rivers
- marine mammals (whale meat and seal pups)
- waterfowl
- seabird eggs and forest birds
- a variety of plant resources.

The plants used included:

- rimurapa (bull kelp, *Durvillea antarctica*)
- karengo (*Porphyra columbina*)
- all native seaweeds.

Freshwater resources included:

- tuna (eels, *Anguilla* spp.)
- pātiki (flounder, *Rhombosolea retiaria*)
- īnanga (whitebait, mostly *Galaxias maculatus*)
- kōkopu (probably banded kōkopu or native trout, *Galaxias fasciatus*)
- waikōura (freshwater crayfish, *Paranephrops planifrons*).

Kai manu (birds) included:

- tītī (shearwater or petrel chick)
- pāteke (spoonbill, *Platalea regia*)
- pārerā (grey duck *Anas superciliosa*)
- pūtakitaki (paradise shelduck, *Tadorna variegata*)
- karoro (black back gull, *Larus dominicanus*)
- toroa (royal albatross, *Diomedea epomophora*)
- torea (pied oystercatcher, *Haematopus ostralegus finschi*)
- hoiho (yellow eyed penguin, *Megadyptes antipodes*)
- koau (black, *Phalacrocorax carbo*; pied, *Phalacrocorax varius*; and little shag, *Phalacrocorax melanoleucos brevirostris*)
- korora (blue penguin, *Eudyptula minor*)
- matuku moana (reef heron, *Egretta sacra sacra*)
- tara (terns, *Sterna* spp.).

The near-inshore fisheries (typically 1–2 nautical miles from the coast) were heavily targeted for shellfish, cartilaginous and bony fish (rocky-reef dwellers, demersal and pelagic), and seaweeds such as rimurapa and karengo.²

Fishing outside this zone (i.e. offshore) was sporadic, and mainly for hāpuku. Te Ika Whataroa was one of these tauranga ika (offshore fishing grounds). Most offshore fishing occurred within about 12 nautical miles of the shore.³

² Higgins and Goomes (1988) and Waitangi Tribunal (1992).

The finfish traditionally most targeted in the Kaikōura coastal area included:⁴

- warehou (*Seriolella caerulea*)
- hake (*Merluccius australis*)
- monkfish (*Kathetostoma giganteum*)
- sea perch (*Helicolenus percoides*)
- manga (barracouta, *Thyrsites atum*)
- hoka (red cod, *Pseudophycis bachus*)
- hokarari (ling, *Genypterus blacodes*)
- hāpuku (groper, *Polyprion oxygeneios*)
- rāwaru (blue cod, *Parapercis colias*)
- moki (*Latridopsis ciliaris*)
- tarakihi (*Nemadactylus macropterus*)
- kahawai (*Arripis trutta*)
- hoki (*Macruronus novaezelandiae*)
- mārari (butterfish, *Odax pullus*)
- kumukumu (gurnard, *Chelidonichthys kumu*)
- araara (trevally, *Pseudocaranx dentex*)
- kohikohi (trumpeter, *Latris lineata*)
- pau (wrasse, Labridae family)
- aua/awa (yellow-eyed mullet, *Aldrichetta forsteri*)
- kūpara (john dory, *Zeus faber*)
- tuere (hagfish, *Eptatretus cirrhatu*s)
- tāmure (snapper, *Chrysophrys auratus*).⁵

The shellfish most targeted included:

- kōura (crayfish, *Jasus edwardsii*)
- pāua (abalone, *Haliotis iris*)
- kina (sea urchin, *Evechinus chloroticus*)
- kuku (mussel, *Mytilus edulis* and *Perna canaliculus*)
- pupu (mollusc, often cat's eye)
- pipi (*Amphidesma australe*)
- kaeo (Cook's turban, *Cookia sulcata*)
- tuatua (*Paphies subtriangulata*).⁶

Ngāti Kuri's coastal mahinga kai sites were spread throughout their takiwā (district); however, the most significant traditional fishing areas included:⁷

- Waiau-toa (Clarence River) and coastal area

³ Ibid.

⁴ Solomon and Howse (1988).

⁵ Strickland (1990).

⁶ Solomon and Howse (1988).

⁷ Anderson (1998), Brailsford (1997), Cooper (1989), Environment Canterbury (2005), Higgins and Goomes (1988), Solomon and Howse (1988), Te Rūnanga o Kaikōura (2005), Trotter and McCulloch (1998).

- Waipapa Bay
- Okiwi Bay
- Half Moon Bay (Umu Taoroa, the long-cooking oven)
- Ōhau Point
- Paparua Point
- Rakautara Stream and coastal area
- Mangamaunu
- Hāpuku River and coastal area
- Waikowau (Lyell Creek)
- Te Ahi Kaikōura Tama ki Te Rangi (Kaikōura Peninsula, including Waiōpuka)
- Te Ika Whataroa (Tauranga Ika offshore from Kaikōura Peninsula)
- Kōwhai River (Wai o Ruarangi, the original name)
- Kahutara River (Peketa)
- Tokaanau (adjacent to Parititahi coastline)
- Parititahi coastal area
- Raramai (Riley's Lookout)
- Te Makura (Goose Bay)
- Ōmihi coastal area
- Oaro River, lagoon and coastal area
- Mikonui coastal area
- Haumuri coastal area (Haumuri Bluffs)
- Okarahia Stream
- Te Pariwhakatau coastal area
- Tūtāe Putaputa (Conway River) and coastal area
- Kiekie
- Paia Point (Whakauae).⁸

Particular to Ngāi Tahu's relationship with the Kaikōura coast is their special connection with its whales. This relationship has its basis in tradition. The well-known rangatira (chief) and brave warrior of the Ngāti Kuri hapū of Ngāi Tahu, Te Rakaitauneke, was said to have a kaitiaki whale named Mata Mata, who lived in the sea opposite Te Rakaitauneke's home in Tahuna Torea (Goose Bay beach). Mata Mata's sole duty and purpose in life was to do Te Rakaitauneke's bidding, to serve all his needs and protect him from harm. Everywhere Te Rakaitauneke went, Mata Mata went too. When Te Rakaitauneke went to Takahanga, Mata Mata could be seen blowing outside the Garden of Memories, as close to shore as he could possibly get. Te Rakaitauneke's love for Mata Mata was as great as the whale's love for him.⁹

After Te Rakaitauneke's death, Mata Mata was not seen along the Kaikōura coast for some time, and it was rumoured that he had gone away and died of sorrow. There were those, however, who remembered Te Rakaitauneke's prediction – that Mata Mata would return when one of his descendants was facing danger or death. There are many stories since then of a Mata Mata appearing to foretell the death of one of Te Rakaitauneke's descendants. It is also said that many of the descendants of Te Rakaitauneke, when faced with peril on the high seas, have been saved by the timely intervention of a whale.

⁸ Areas outside the scope of the Te Korowai o Te Tai o Marokura strategy have not been included.

⁹ Ngāi Tahu Claims Settlement Act 1998.

The Kaikōura coast was a major highway and trade route, particularly where travel by land was difficult. Travel by sea between settlements and hapū was common in different types of waka, including southern waka hunua (double-hulled canoes) and, after European contact, whale boats, which plied the waters continuously. Tauranga waka (landing places) occur up and down the coast in their hundreds, and wherever there is a tauranga waka, there is also likely to be a nohoanga (settlement), fishing ground, kaimoana resource and rimurapa (bull kelp), with the sea trail linked to a land trail or mahinga kai site.¹⁰

The tūpuna (ancestors) had profound knowledge of the coastal environment and weather patterns, passed from generation to generation. This knowledge continues to be held by whānau and hapū, and is regarded as a taonga. The traditional mobile lifestyle of Ngāi Tahu people led to their dependence on the coast's resources.

Numerous urupā (cemeteries) have been exposed or eroded along of the coast. Water-burial sites, known as waiwhakaheketupapaku, are spiritually significant and linked with important sites on the land. Places where kaitāngata (the eating of those defeated in battle) occurred are wāhi tapu. Urupā are the resting places of Ngāi Tahu tūpuna, and as such are the focus of whānau traditions. These places hold the memories, traditions, victories and defeats of Ngāi Tahu tūpuna, and are often protected.

The mauri (life force) of the coast binds its physical and spiritual elements, generating and upholding all life. Every aspect of the natural environment possesses a life force, and all forms of life are related. Mauri is critical to Ngāi Tahu's spiritual relationship with the coastal area.¹¹

Tikanga are the customs and traditions, handed down through many generations, that govern the use and conservation of the environment. These management practices enabled Ngāti Kuri to sustainably harvest and conserve their fisheries. Traditional fisheries management included restrictions on harvesting, known as rāhui.

9.2 Fisheries management post-Treaty of Waitangi (1840–1998)

The Treaty of Waitangi specifically guaranteed tāngata whenua the continued customary ownership or tino rangatiratanga (chieftainship) over their taonga, including plants, animals, and other natural resources. The English version of the Treaty of Waitangi guaranteed tāngata whenua, 'full, exclusive and undisturbed possession of their lands, estates, forests, fisheries and other properties, which they may collectively or individually wish and desire to retain in their possession'.

Having signed the Treaty, Ngāi Tahu whānui were well placed in 1840 to exercise tino rangatiratanga over their tribal domain.

Over a 20-year period (1844–1864) Ngāi Tahu whānui sold to the Crown vast tracts of land under 10 Deeds of Purchase (including the Kaikōura Purchase of 1859). Ngāi Tahu entered into these deeds on the understanding that the Crown would set aside kainga nohoanga (villages or places of residence), wāhi tapu/wāhi taonga (sacred and treasured places), mahinga kai (food-gathering areas), and adequate reserves (to allow Ngāi Tahu to expand their economy to include pastoral farming), among other things.

¹⁰ Ibid.

¹¹ Ibid.

However, breaches by the Crown left Ngāi Tahu virtually landless and without an economic base. This resulted in the Crown assuming ownership and management over Ngāi Tahu lands and natural resources, including fisheries.¹²

Ngāi Tahu's ability to own and manage fisheries changed with this loss of economic base. Fisheries legislation between 1840 and 1983 recognised the existence of the customary fishing rights of tāngata whenua, but these were largely defence provisions – they did not acknowledge the right of tāngata whenua to own, manage and control fisheries. Tāngata whenua were largely disenfranchised from fisheries management.

In 1986 the Ministry of Fisheries introduced the Fisheries Quota Management System (QMS) as the means by which New Zealand would sustainably manage fisheries resources. In doing so, the Crown established commercial property rights to fisheries resources in the form of quota – individuals or companies were allocated the right to catch certain quantities of particular species.

Because traditional food gathering did not involve recording a catch history, the QMS disqualified almost all Māori from the new system. Unable to provide detailed catch records and raise bank loans, most Māori fishers were driven out of the industry.

Dissatisfied, Ngāi Tahu claimed to the High Court and the Waitangi Tribunal that the QMS was a breach of the Treaty because it gave property rights customarily owned by tāngata whenua to commercial fishers in the form of quota.

The High Court found that: 'by implementing the QMS the Crown had committed a fundamental breach of the Treaty of Waitangi by giving non-Māori a right which belonged to Māori and had not been acquired by the Crown.'

Ngāi Tahu's fisheries claim became part of the tribal claim ('Te Kereeme' – initiated by Ngāi Tahu tohunga (priest) and chief Matiaha Tiramorehu, of Moeraki, in 1849) that was lodged with the Waitangi Tribunal in 1987, known as WAI 27. This claim comprised of 'nine tall trees', one of which was mahinga kai (inclusive of fisheries) – this confirmed again the importance of mahinga kai to Ngāi Tahu whānui.

The Waitangi Tribunal found that the Crown as Treaty partner failed to:¹³

- deal fairly with Ngāi Tahu when acquiring the land
- set aside adequate reserves
- protect mahinga kai
- deliver all the promised benefits
- actively protect Treaty rights.

The Waitangi Tribunal also found that Ngāi Tahu held an exclusive Treaty right to the sea fisheries surrounding the whole of their rohe out to a distance of about 12 nautical miles, there being no waiver or agreement by them to surrender that right.¹⁴

The findings of the High Court and the Waitangi Tribunal demonstrated that the customary fishing rights of tāngata whenua had both a commercial and non-commercial component. The Crown then recognised that a just and honourable settlement with tāngata whenua was required. The

¹² Waitangi Tribunal (1991).

¹³ Ibid.

¹⁴ Waitangi Tribunal (1992).

negotiations for this redress led to an interim settlement in the form of the Māori Fisheries Act 1989.

This Act was to make better provision for Māori fishing rights secured by the Treaty of Waitangi. It split the commercial and non-commercial components of the customary right, and dealt with the interim redress issues for each separately.

The interim commercial redress included:

- 10% of quota of all fish species that were then subject to the QMS
- shares in Moana Pacific
- the interim non-commercial redress included the provision for taiāpure (local fisheries management area).

The interim non-commercial redress included:

- the provision for taiāpure (local fisheries management area).

Negotiations continued between tāngata whenua and the Crown to resolve the outstanding claims and Treaty grievances. On 23 September 1992 the Treaty of Waitangi (Fisheries Claims) Settlement Act, commonly known as the Sealord Settlement, was entered into between the Crown and those persons negotiating on behalf of iwi.

The Sealord Settlement confirmed the split of the customary right into commercial and non-commercial components, and dealt with each component separately. The Sealord Settlement constituted full and final settlement of all Māori claims to commercial fishing rights and changed the status of non-commercial fishing rights.¹⁵ The Crown's Treaty obligations to commercial fishing had been satisfied and discharged.

Components of the commercial settlement included:

- 50% share in Sealord Products Limited
- \$150 million for the development and involvement of Māori in the fishing industry
- 20% of quota allocated to Māori for all new species brought under the QMS.

The Sealord Settlement changed non-commercial fishing rights so that they no longer had legal effect, except to the extent that they were provided for under customary regulations, and that they continued to be subject to the principles of the Treaty and give rise to Treaty obligations on the Crown. Hence, the Minister of Fisheries is required to act in accordance with the principles of the Treaty of Waitangi.

The Minister was required to promulgate regulations that recognised and provided for the customary fishing rights of tāngata whenua as guaranteed by the Treaty of Waitangi, and that provided tāngata whenua with the opportunity to manage their rights once more. The South Island customary fishing regulations were first disseminated in April 1998 under section 186 of the Fisheries Act 1996.

The regulations provide a process for tāngata whenua to appoint tāngata tiaki/kaitiaki (customary fisheries managers) to manage customary food gathering (by issuing fishing authorisations) and provide a framework for tāngata whenua to contribute to fisheries management. The Minister of Fisheries is required to provide for the participation of tāngata whenua into key fisheries management, and to have particular regard for kaitiakitanga under section 12(1)(b) of the Fisheries Act 1996.

¹⁵ Preamble, Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

The regulations also recognise and provide for the special relationship of tāngata whenua with places important for customary food gathering (including tauranga ika and mahinga mātaītai), and as such provide the framework for area management. The regulations therefore provide for mātaītai (shellfish gathering).¹⁶

The Sealord Settlement also requires the Minister to develop policies to help recognise the use and management practices of tāngata whenua in the exercise of customary non-commercial fishing rights.¹⁷ One such policy under the Fisheries Act 1996 (section 186b), made as a result of the Ngāi Tahu Claim Settlement Act 1998,¹⁸ is the provision for temporary closures or method restrictions.

9.3 Contemporary customary fisheries management

The customary regulations apply when tāngata whenua wish to exceed bag limits or other provisions of the amateur fishing regulations for reasons such as hui, tangi, koha or whānau sustenance. To exercise their customary fishing rights, now administered under the customary regulations, Ngāti Kuri must obtain authorisation from one of their tāngata tiaki or kaitiaki.

Tāngata tiaki or kaitiaki were first appointed for Te Rūnanga o Kaikōura in 2000.

The customary authorisations issued for this area since 2000 are primarily for near-inshore fisheries (in particular, shellfish such as pāua, kina and kōura). The main finfish fished under customary authorisation are rāwaru (blue cod) and hāpuku (groper).

There is a clear trend in the purposes for which authorisations are issued – most are for hui and tangihanga (funerals). Catch levels are currently extremely low – less than 1–2 tonnes per year for most key species.

Customary harvesting occurs throughout the entire area managed by the tāngata tiaki or kaitiaki, but key spots tend to be used, including:¹⁹

- Waipapa Bay
- Half Moon Bay
- Rakautara
- Mangamaunu
- Kaikōura Peninsula (in particular Sharks Tooth, South Bay)
- Kahutara
- Barney's Rock
- Goose Bay
- Oaro
- Haumuri Bluffs.²⁰

¹⁶ Fisheries (South Island Customary Fishing) Regulations 1999.

¹⁷ Treaty of Waitangi (Fisheries Claims) Settlement Act 1992.

¹⁸ Section 311, Ngāi Tahu Claims Settlement Act 1998.

¹⁹ Te Rūnanga o Ngāi Tahu (2006).

²⁰ Areas outside the scope of the Te Korowai o Te Tai o Marokura strategy have not been included.

Traditional use of marine and coastal areas by Māori families has continued with little change through to modern times. Each family has its own mahinga kai for fishing and gathering kaimoana. Family connections to particular areas are well known and respected by other families. It is particularly important that this system works, as it often happens, due to economic circumstances, that a family must 'live off the beach'.

Disquiet over the QMS still smoulders, and it largely underlies families' desire to actively manage and regulate the so-called traditional fishing areas set up on a hapū basis. The solution lies with the marae and/or rūnanga concerned. Each family must feel they have a continuing role to play in the management process.

9.3.1 Area management tools

The Fisheries Act 1996 and the South Island Customary Fishing Regulations provide a number of legal planning tools to help tāngata whenua manage customary fishing areas. There are three tools for managing customary fisheries.

1 Taiāpure (local fisheries)

A taiāpure identifies an area (of estuarine or coastal waters) that has special significance to an iwi or hapū as a source of food or for spiritual or cultural reasons. The object of acknowledging taiāpure is to make better provision for recognising rangatiratanga (chiefly authority) and the fisheries rights secured under Article II of the Treaty of Waitangi. The provisions for taiāpure are contained in Part IX of the Fisheries Act 1996.

A management committee, nominated by the tāngata whenua (which may include representatives from local fisheries stakeholder groups, including commercial fishers) is appointed by the Minister of Fisheries. The role of the committee is to recommend regulations that allow taiāpure to function according to custom.

The effect of the taiāpure on local fisheries and the people using them will depend on the controls that are established as part of the regulations.

2 Mātaitai reserves

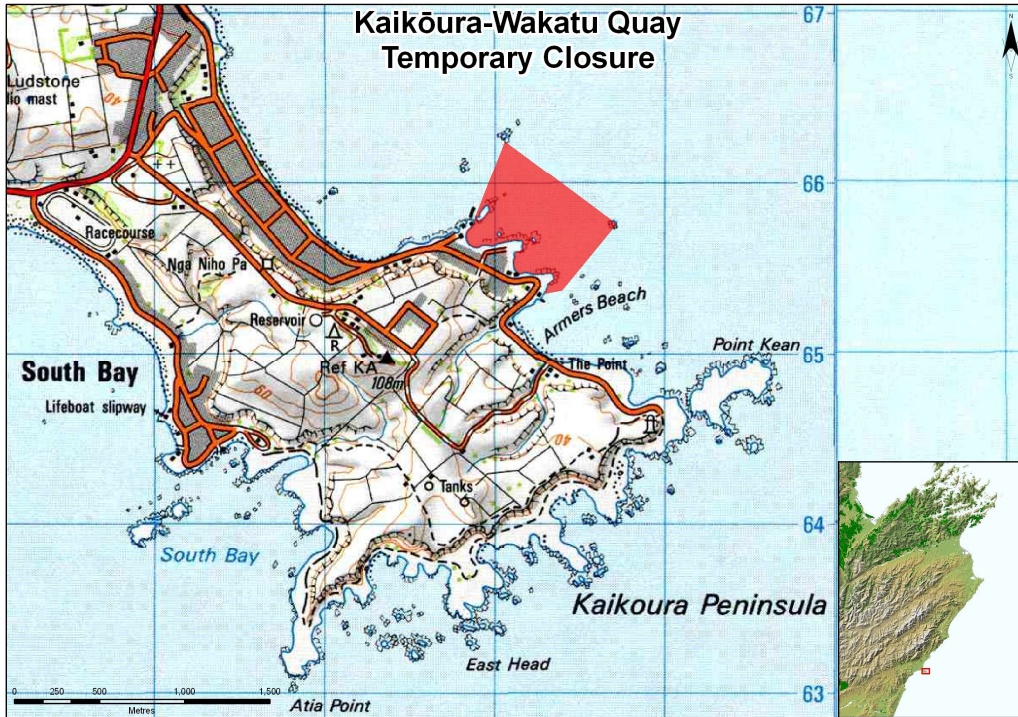
A mātaitai reserve identifies a customary food-gathering site and allows for its management by tāngata whenua (South Island Customary Fishing Regulations 1998). A reserve can be established in any area of New Zealand Fisheries waters in the South Island. Tāngata whenua appoint tāngata tiaki to manage mātaitai, which they do by making bylaws. These must be approved by the Minister of Fisheries, and must apply generally to all individuals. Commercial fishing is prohibited in a mātaitai reserve unless otherwise authorised by the Minister of Fisheries.

3 Temporary closures and method restrictions

Temporary closure and method restriction provisions (section 186b of the Fisheries Act 1996) allow for fishing to cease or be restricted in New Zealand Fisheries waters of the South Island. The purpose of a rāhui (restriction) is to improve the size and/or availability of fish stocks, or to recognise their use and management by tāngata whenua. A rāhui can be applied for particular days, weeks, months or seasons up to a period not exceeding two years (the rāhui can be renewed at the end of each period, however). Rāhui apply to all individuals, including customary fishers.

A section 186b temporary closure was first placed on the Waiōpuka reef area of the Kaikōura Peninsula in August 2002 (Figure 4). It was proposed by Te Rūnanga o Kaikōura and the Kaikōura Marine and Coastal Protection Society on the grounds that the combined pressure from recreational, commercial and customary harvesters was depleting fish stocks. This rāhui has twice been renewed and will remain in place until August 2008.

Figure 4: The Waiopuka closure



9.4 Rūnanga governing principles associated with Te Tai o Marokura

Te Rūnanga o Kaikōura has developed a comprehensive environmental management plan, which includes a section about Te Tai o Marokura. An overriding principle of the plan is 'ki uta ki tai', or a holistic mountains-to-sea philosophy.

Rūnanga governing principles associated with Te Tai o Marokura are, that:

- Ngāi Tahu whānui– current and future generations – are able to exercise their customary rights and responsibilities associated with coastal and marine environments as guaranteed by the Treaty
- coastal and marine biodiversity is protected and enhanced
- coastal and marine areas important to Te Rūnanga o Kaikōura are enhanced and restored
- the realm of Tangaroa flourishes, and the mahinga kai of Tangaroa is readily available to tāngata whenua and their communities

- the relationship between land and aquatic ecosystems is recognised and provided for in all decision-making relating to the coast
- the adverse impacts of human activities on coastal and marine environments are avoided, remedied or mitigated at all times
- research and monitoring of coastal and marine areas are supported and encouraged to provide baseline information on which to make sound decisions
- a community-led, integrated strategy is developed with DOC, other relevant agencies and fisheries stakeholders to effectively manage land, water, mahinga kai, and the biodiversity of Te Tai o Marokura
- communication and collaboration is promoted between those groups with an interest in the management of the coast and sea.

Some issues identified in the Te Tai o Marokura environmental management plan are similar to those identified by Te Korowai. Accordingly, Te Rūnanga members believe that Te Korowai may assist them in finding and implementing management solutions.



10 Recreational Fisheries

10.1 Trends over time

The Kaikōura coastal marine area supports a valued recreational fishery. A wide variety of fish and shellfish, together with easy access along the coast, account for its popularity. Local and other fishers have become more mobile and better equipped. Kaikōura fishers travel to the Marlborough Sounds and Nelson to scallop and fish, and charter boats as far afield as Fiordland and Stewart Island. Equally, fishers from places such as Christchurch and Marlborough are attracted to Kaikōura in increasing numbers. This makes the Kaikōura fishing scene far more complex than in the past. Notably, significant recreational fishing effort now comes from the summer tourist industry. And as the tourist and dairy industries flourish, local people have more resources, such as better boats and fish-finding equipment.

In the 1800s, settlers found a rich source of seafood along the Kaikōura coastline. Accordingly, subsistence and recreational fishing was a defining feature of settlement in the area. Most commercial fishers also take part in subsistence and recreational fishing – something that is often overlooked.

Fishing trends largely reflect improvements in equipment and technology. Early fishing methods did not require sophisticated equipment or machinery. Gathering and line- or rod-fishing was done from the wharf or shore, string pots were lowered from the wharf, and pole nets were used to catch butterfish. Species caught from the beach included hāpuku at certain times of the year, snapper, large moki, red cod, blue cod, rig and kahawai.

Humble rowing boats, which made offshore fishing possible, were replaced by outboard motor boats, allowing fishers to travel further afield and target species like blue cod. Trailer boats gave access to even more extensive areas. Now some recreational vessels are very substantial – capable of travelling as far as Bushett’s Shoals, referred to as The Kelp, and further. The evolution of streamlined vessels has been accompanied by vastly improved technology such as GPS, which takes the guesswork out of finding and relocating suitable fishing grounds. Clearly, many fishers are now able to invest considerable amounts on vessels and fish-finding technology. The ability to find and catch greater numbers of fish has put pressure on fish stocks. Paradoxically, this has been managed successfully outside of Kaikōura where populations are largest. For example, in Auckland there are tens of thousands of recreational boats, many worth millions of dollars, and yet snapper and others species are plentiful because they are better managed than in the past.

The biggest improvement for divers, whether diving from shore or boat, has been the wetsuit. They allowed divers to stay longer in the water to search for rock lobster, pāua, butterfish and moki.

Recreational fishers have reported several trends in the fish stocks they harvest. According to anecdotal evidence from Kaikōura fishers, there has been a substantial decline over the past 30 years in the quantity and/or size of a variety of species, including snapper, blue cod (number and size), rig, trumpeter, groper and rock lobster. They also report that since the 1950s and 1960s the sizable pāua beds on the north side of Kaikōura Peninsula have been reduced. Blue sharks were plentiful 10–15 years ago, but surface/longlines and shark finning outside Kaikōura

appear to have had a serious impact on stocks. Kahawai was a significant recreational species until commercial purse seining affected the fishery. Recreational fishers suggest that present stocks are insignificant compared to what they were.

Over the past 10 years, increased fishing pressure has been noted along the Kaikōura coast from Marlborough, Motunau and Christchurch. Fishers from further afield are believed to be coming to Kaikōura, where stocks have not been reduced as much as in their own areas. Some Kaikōura recreational fishers say that coastal fish stocks are unlikely to sustain the combined pressure of recreational and commercial harvesting, which will present a major challenge for future management. Others point to a boom-and-bust era for all species prior to the Quota Management System. They highlight the issues recreational fishers will have estimating sustainable stocks, and the difficult they will face as under-resourced stakeholders.

Recreational fishers acknowledge they can deplete fish in local areas, but some believe that overall depletion in most stocks is caused by commercial fishing, particularly larger industrial operations. Recreational fishers say that they value the experience of fishing with an absolute minimum of constraints, but where there are rules it is essential they are rigorously enforced, for the benefit of all.

Recreational fishing has many values beyond subsistence. Fishers say how much they enjoy getting out of the artificial and controlled environments of house, office, car and society, and getting closer to the unpredictability of nature in the wild. Some experience the primal drive of the hunter-gatherer – drawn by the thrill of the chase and the challenge of the unseen and unknown. Others say it is much more, and value the freedom of fishing in New Zealand, with all its benefits of physical and mental health.

10.2 The recreational fishery, 1991–2001

The Kaikōura recreational fishery has been studied using regional and national diary schemes (1991, 1996 and 2001), a combined diary/roving and boat-ramp survey (1999), and boat-ramp surveys (1996 and 2000) (Blackwell, 2006). The following account is based on information from the regional and national diary surveys specific to the Kaikōura area (Clarence River to Conway River), conducted between 1991 and 2001, and on qualitative observations made by local recreational fishers, recorded in 2007. Although Blackwell cautions the use of the survey results, broadly speaking there is agreement between the survey and anecdotal observations.

Diary and boat-ramp survey results are not directly comparable, but each provides useful information. Diary surveys describe where fishing occurs, methods used, and species targeted and caught. Boat-ramp surveys detail the catch rates of various species caught by boat fishers.

Because survey information is based on limited numbers of responses, the following account is an informative rather than precise picture of the Kaikōura fishery.

Recreational fishing can be done right along the relatively exposed coastline between the Clarence and Conway rivers; however, effort tends to be concentrated in four areas of rocky shore and reef. Fishing is seasonal – most trips are in summer (November to February), with a possible smaller secondary winter peak in April to June.

10.2.1 Recreational fish species

The Kaikōura coastal marine area supports valued recreational fisheries, including rock lobster, pāua, kina, blue cod, sea perch and butterfish as well as blue moki, kahawai, red cod, hāpuku, wrasse, rig, ling, bluenose, trumpeter, tarakihi, albacore tuna, barracouta (used for bait) and mussels.

Diary surveys showed the most sought-after species between 1991 and 2001 were rock lobster, blue cod, pāua, butterfish, kahawai and sea perch (Figure 5). The percentage caught does not always reflect the percentage of trips on which they are targeted. For instance, sea perch was targeted infrequently, but represents the most harvested species – contributing to over 20% of the total harvest. In contrast, rock lobster was targeted on 40% of trips, but represents only 20% of the catch (Figure 6).

Figure 5: Percentage of trips for target species from recreational diary surveys, 1991–2001

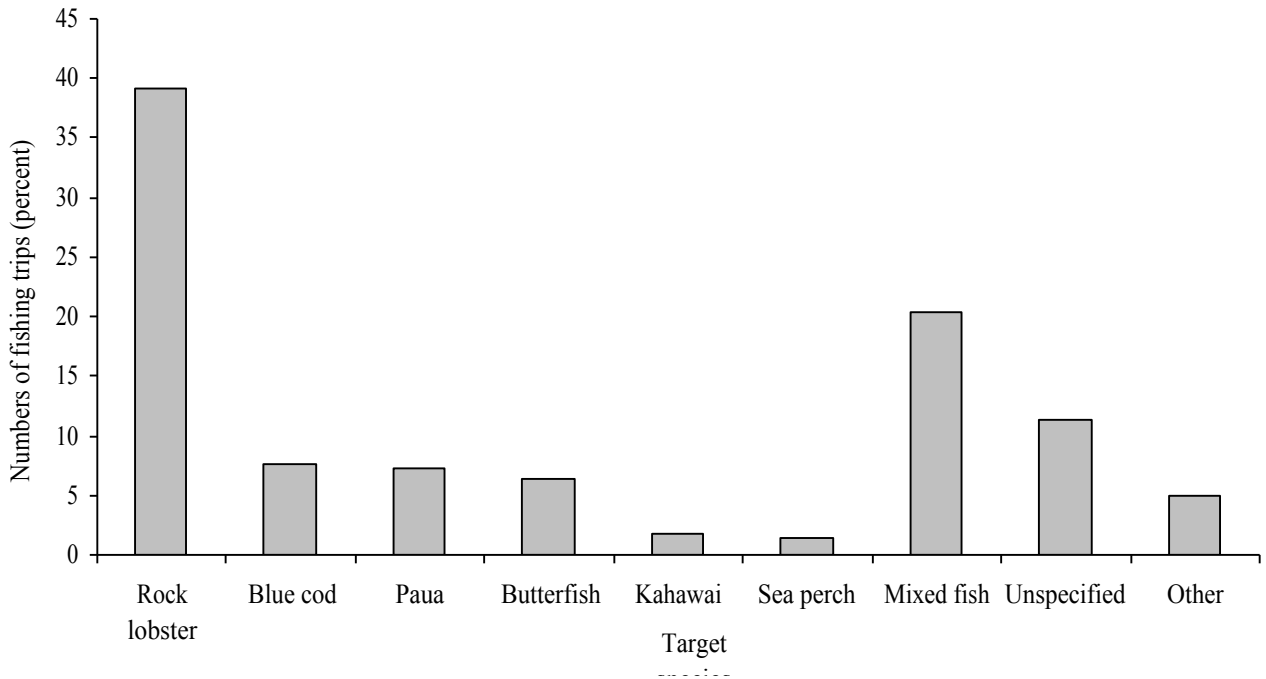
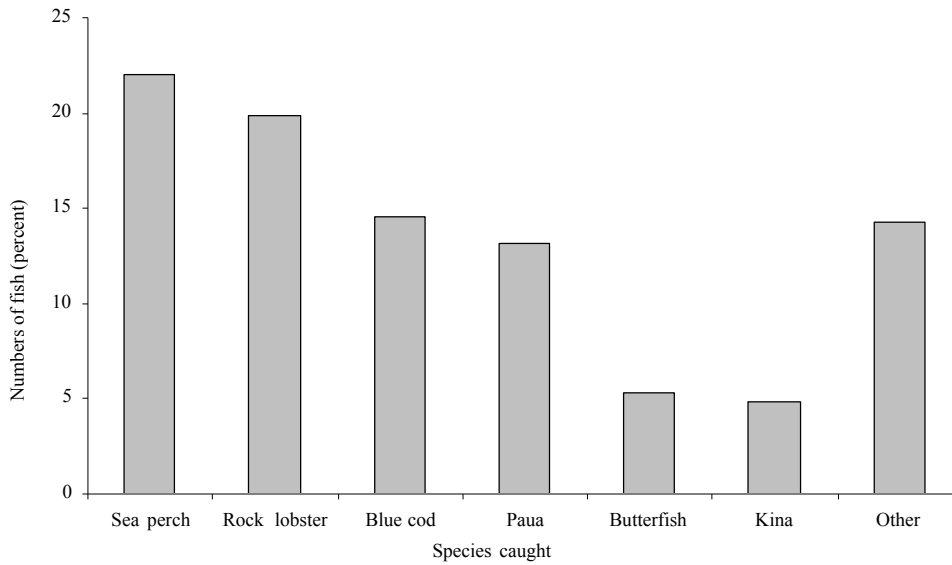


Figure 6: Percentage of fish species caught from recreational diary surveys, 1991–2001

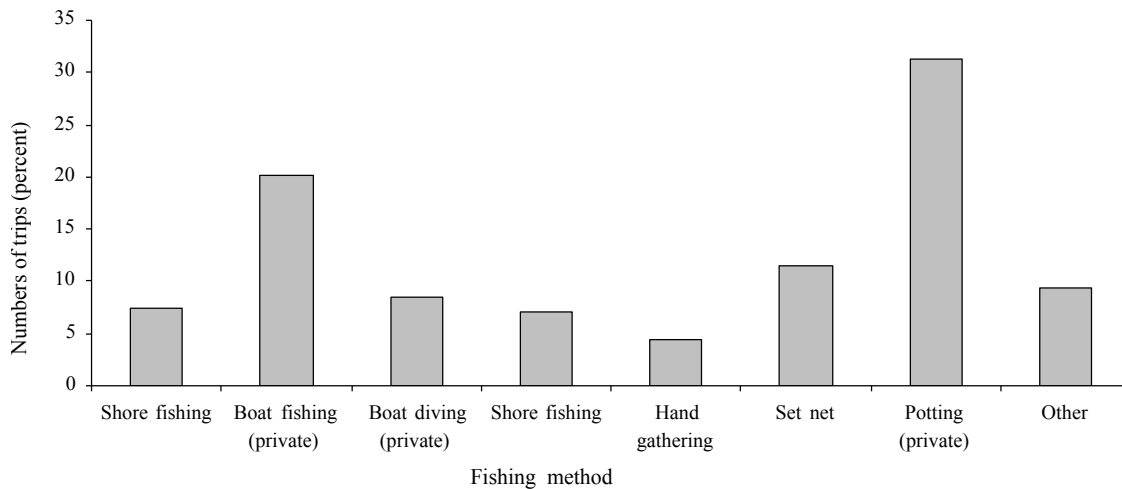


10.2.2 Fishing methods

Different fishing methods are used to target particular species (Figure 7). The following trends were identified.

Pots or fishing from a boat using rod or hand lines accounted for half of all fishing trips. The popularity of potting for rock lobster highlights the value of this species to recreational fishers. Boat fishing is effective for a number of finfish species, as is set netting. Those who dive from boats are interested in a mix of finfish and shellfish, as are those who dive from the shore. Shore fishing targets finfish species accessible from the beach, whereas hand gathering focuses on shellfish.

Figure 7: Popularity (percentage of trips) of fishing methods from recreational diary surveys, 1991–2001



10.2.3 Methods and species

The methods used to harvest important recreational fish species are shown in Table 3.

Table 3: Popularity of fishing methods (percentage and number of trips) used to target individual fish species

Target species	Shore fishing	Boat fishing (charter)	Boat fishing (private)	Boat diving (charter)	Boat diving (private)	Shore diving	Hand gathering	Set net	Potting (private)	Other	No. of trips
Rock lobster	0.1		0.3	0.1	20.4	7.4	0.5	0.1	70.9		929
Blue cod	5.5	6.9	81.1		1.2	0.0	0.0	2.1	0.5	2.6	419
Not specified	73.1	0.8	12.9	0.4	1.1	1.5	2.7	4.2	1.5	1.9	264
Butterfish	3.7		3.1		6.3	7.9	0.0	79.1			191
Pāua	1.1				8.8	41.8	47.3	0.0		1.1	182
Blue moki	22.3		6.6		1.7	1.7	0.0	66.9		0.8	121
Kahawai	58.9		21.4					5.4		14.3	56
Sea perch	5.9		94.1								34
Red cod	82.4		17.6								17
Kina				6.7	66.7	20.0	6.7				15
Groper	8.3		75.0					16.7			12
Wrasse	50.0		50.0								12
Rig	54.5		9.1					36.4			11
Barracouta			88.9					11.1			9
Mussels						28.6	71.4				7
Spotty	100.0					0.0	0.0				6
Other	58.3	8.3	20.8			29.2	8.3	8.3	4.2		24

In summary:

- Rock lobsters are primarily taken by pots or by diving from boats.
- Blue cod, sea perch, groper and barracouta are caught by boat fishing.
- Butterfish and moki are mostly harvested by set netting, but also by spear fishing.
- Pāua and kina are gathered by hand, or by diving from boat or shore.
- Kahawai, red cod and wrasse are caught from the shore or from boats.

10.2.4 Fishing locations

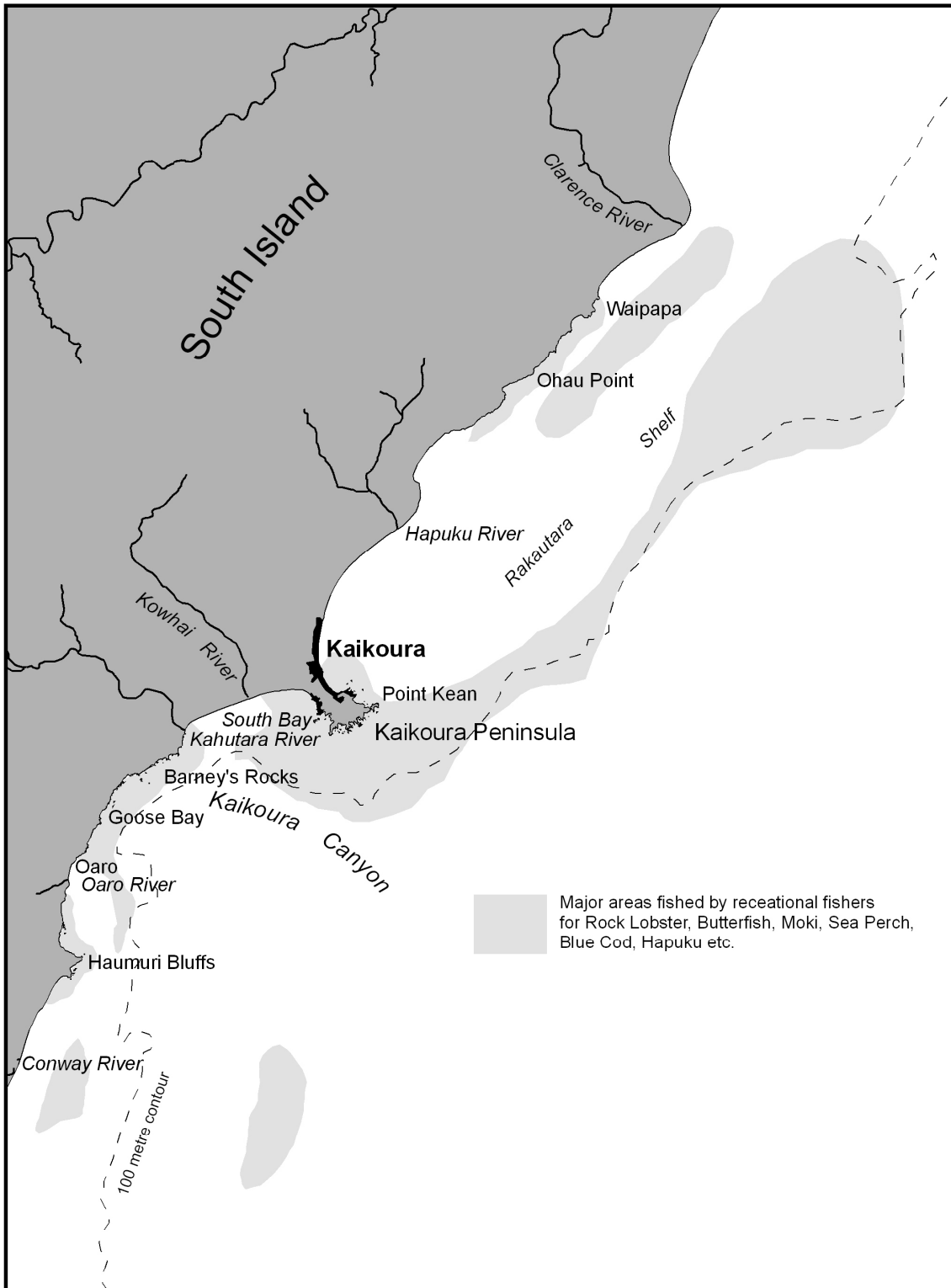
Anecdotal observations by local fishers and the 1991–2001 survey identify four areas of particular importance for recreational fishing (see Figure 8):

- Kaikōura Peninsula, particularly around the south and eastern sides
- Waipapa to Rakautara in the north
- Barney's Rock and Goose Bay
- Oaro to Haumuri Bluffs in the south.

Fishers' observations and the survey both suggest that about half of total recreational fishing is concentrated around Kaikōura Peninsula, with the other areas each supporting up to 10% of the total.

The major difference between observations and survey results is that recreational fishers report moving offshore into deeper waters to target species such as hāpuku, which are becoming more significant to the recreational catch.

Figure 8: Key areas for recreational fishing



10.2.5 Popularity and features of fishing zones

The most popular fishing zones defined in the survey were around Kaikōura Peninsula. A significant but lower level of fishing pressure was recorded between Oaro and Goose Bay, the coastline near Haumuri Bluffs, and north of Goose Bay. North of the peninsula, fishing was popular between Rakautara and the Clarence River. The other zones, including deeper water areas, did not attract as many fishing trips, making up less than 3% of the total.

10.2.6 The fishery of Kaikōura Peninsula, and north and south

Kaikōura Peninsula

Kaikōura Peninsula was the most popular fishing location between the Clarence and Conway rivers. The waters around the peninsula attracted most fishing, and saw the greatest variety of fishing methods and range of targeted species. Boat fishing and diving, set netting and potting were the most popular ways to hunt blue cod, sea perch, rock lobster, pāua, butterfish and blue moki.

North of Kaikōura Peninsula

Shore fishing and hand gathering were popular north of the peninsula. Species targeted included blue moki, kahawai, blue cod, butterfish and pāua. North of Rakautara, rock lobster were caught by potting and diving from boats and the shore. Blue cod, butterfish and moki were targeted by boat fishing and set netting.

South of Kaikōura Peninsula

In inshore and offshore waters south of the peninsula, boat fishing and potting were the most popular fishing methods. Prime targets were rock lobster and blue cod. Although not as popular, boat diving and set netting also took place inshore and offshore. Set netting was confined to the area from Goose Bay south. Target species included rock lobster, pāua, butterfish, blue moki and blue cod. Other methods (shore fishing, shore diving and hand gathering), were all lightly or moderately used inshore south of the peninsula.

10.3 Interview survey of recreational fishers, 2006

To learn more about the views of fishers with extensive experience in the Kaikōura coastal marine area, 10 fishers were selected and interviewed in 2006 (five each from Kaikōura and Christchurch). Information relating to fishing practices and observations about the Kaikōura fishery are summarised here (MFish, 2006).

10.3.1 Main species targeted

The main target species reported are blue cod, rock lobster and groper. Others harvested are pāua, sea perch, butterfish, trumpeter, blue nose, moki, tarakihi, albacore tuna, mako and blue shark.

10.3.2 Observations about fish and fishing

Some fishers fish to the bag limit, others only for a feed.

Blue cod catches vary from 1–10 per day, depending on the fisher. Sea perch catches range from a few for bait to 20 a day, depending on the quantity of other species caught. In good conditions an experienced spear fisher can take 5–15 butterfish a day, but no more than two moki. Fishing for tuna is seasonal and variable. On a day's trip with a boat-load of fishers, two to three tuna can be taken for eating.

Rock lobster harvests are typically six per day with three pots. One fisher had recorded his rock lobster catch (rate /pot) from 1994–2006: with decreasing effort catch increased from 0.096/pot in 2004 to 0.505/pot in 2006. Overall, the view was that rock lobster stocks in the Kaikōura area are healthy, and have increased since the 1980s because of the way commercial fishers are managing their quota.

Generally, only one or two groper are harvested per trip. The groper fishery is considered to fluctuate greatly from year to year. Recreational fishers observed that because groper live in deep waters off Kaikōura they are difficult to catch.

There has been a change of attitude to shark fishing. Previously, sharks were caught in numbers and not returned. Now they are usually only caught in fishing competitions, held in February. Sharks are released unless a winning trophy is landed. Fishers use light tackle to make fishing more challenging.

When species decline or their availability is limited, fishers will change the species they harvest. For instance, butterfish, moki and rock lobster were targets in the past, but now it is blue cod target. This change is thought to be associated with the declining popularity of set netting (possibility due to entanglements of marine mammals), and fishers have converted to rod and line to catch blue cod. Similarly, when favoured species such as blue cod and groper become more difficult to catch, sea perch became a target.

10.4 The charter fishery

Charter fishers operate under amateur fishing regulations.

Before the boom of ecotourism in Kaikōura from 1990, charter fishing tended to be organised trips with commercial fishers operating in Kaikōura. Once visitor numbers began to grow, it was a natural progression for dedicated charter fishing operations to be established, to cater for ardent recreational fishers as well as tourists.

Charter fishing is mostly done around Kaikōura Peninsula; however there are rewarding areas further afield, namely the North Ground and Bushett's Shoal. The duration of trips ranges from full-day outings down to tours of 1.5–2 hours.

Most operators are based in Kaikōura, but there are also businesses north and south of the township. They mostly target perch, blue cod, hāpuku, and to a lesser degree, tarakihi. Many operators also cater for those wishing to set pots for crayfish (rock lobster).

10.5 Management of recreational fisheries

Managing recreational fisheries involves taking measures to conserve fish stocks and spread the catch equitably among recreational fishers.

Management methods include setting bag limits, size limits and gear restrictions. Daily bag limits aim to control what individuals catch in a day, conserve fish stocks, and divide the recreational harvest fairly. Having a maximum number of hooks on set lines and fishing lines, and restricting netting helps maximise juvenile survival and reproductive success.

Daily bag and size limits and some method restrictions for popular Kaikōura recreational fish and shellfish are presented in Table 4. Some of this information is in summary form – for a more complete guide refer to New Zealand’s marine recreational fishing rules: Southern Region Fishery Management Area (2005).

Table 4: Recreational fishing rules applicable to the Kaikōura coastal marine area

Fish/shellfish species	Maximum daily limit	Minimum fish length (cm)	Method restrictions*
Barracouta	30	–	
Blue cod	10	30	Minimum set-net mesh – 100mm
Blue moki	15	40	Minimum set-net mesh – 114mm
Butterfish	15	35	Minimum set-net mesh – 108mm
Groper/hāpuku	5	–	Minimum set-net mesh – 160mm
Kahawai	15	–	Minimum set-net mesh – 90mm
Red cod	30	25	Minimum set-net mesh – 100mm
Red gurnard	30		
Sea perch			
Rig	5	–	Minimum set-net mesh – 150mm
Tarakihi	15	25	Minimum set-net mesh – 100mm
Warehou	15		
Wrasse	30	–	
Rock lobster	6	Tail width: • female 60 mm • male 54 mm	No females in berry Pot identity, limits on number of pots, pot design, and escape gaps
Pāua	10	125	No underwater breathing apparatus or take.
Kina	50	–	
Mussels	50	–	

Recreational drop-line fishing regulations limit the number of lines a fisher can have to no more than one. The number of hooks per line is also limited. Further, the fisher’s name must be on surface floats.

Existing set-netting restrictions define net mesh, disallow more than one net being used at a time, require nets to be hand hauled, define a maximum net length, prohibit staking, and require the fisher’s identity to be marked on floats. Set-netting restrictions are currently being reviewed as part of a national Hector’s Dolphin Threat Management Plan.

MFish provides information and codes of practice aimed at conserving fish stocks. They advocate protocols such as measuring pāua before removing them from rocks. MFish focuses on education, raising fishers’ awareness that fisheries need to be enhanced and sustainably harvested.

11 Commercial Fisheries

11.1 Historical trends

11.1.1 A short history of whaling on the Kaikōura coast

By the late 1830's, following a period of extensive European off-shore whaling in New Zealand waters, attention was paid to shore-based operations. In 1842, Robert Fyffe and John Marray, with the backing of Merchant John Wade, began setting up a whaling station--Waiopuka--at Armer's Beach on the north side of the Kaikōura Peninsula, an excellent site to intercept the migration of southern right (*Balaena australis*), sperm (*Physeter catodon*) and humpback (*Megaptera novaeangliae*) whales.

With early success other shore-based stations quickly followed, with sites near Haumuri Bluff, Riley's (Barney's) Rock (Rangi-inu-wai), South Bay (Te Hiko o te Waeroa) and at Waipapa. Success was short-lived, however. Whale numbers were in major decline from earlier years and after 1847 returns of oil and baleen were small and erratic, leading to the closure of some stations.

Despite low returns, whaling continued, especially at Rangi-inu-wai, Waiopuka and at South Bay. By about 1900 the only whaling station "fishery" left was at South Bay. There, it is reported, the rendering down of blubber offended fewer sensitive nostrils.

The South Bay station continued on sporadically for decades. Only a single boat was mustered in some years and for a few years whaling lapsed altogether. From 1895 to 1913 only nine whales were taken. Success improved as technology advanced, with faster boats and better gear. In 1920 with a stunningly powerful and fast chaser the "Swiftsure", a 45 horsepower vessel with a speed of 18 knots, twenty humpbacks and the first sperm whale for 60 years were dispatched.

However, a combination of poor financial returns, gear damage and labour disputes, led to the final closure of the station after the 1922 season.

Thus ended 79 years of shore-based whaling on the Kaikōura Coast. The South Bay Whaling Station remained for many years a character building of varying-coloured and rusting corrugated iron.

The story does not quite end there. Fishermen and ex-whalers still sought the very occasional whale after 1922. The Peranos of Marlborough Sounds sometimes ventured as far as Kaikōura and have the distinction of harpooning the last whale in close-inshore waters on 21 December 1964.

Russian whaling fleets worked in New Zealand waters for several more years until those operations also ceased.

Local and world attitudes changed profoundly over the next two decades. After the whale "harvesting" of hundreds of years came the initiative of whale watching and ecotourism and a new era unfolded for Kaikōura when the first whale watch boat took to the water in 1988.

11.1.2 Fishing before 1900

The first recorded professional fishermen in Kaikōura were Charles Brunel and Andrew Cross, who took up fishing in South Bay, in 1867. Before that, pākehā whalers had fished, but it was not their principal source of income. Based in South Bay, Brunel and Cross fished with lines and nets from row boats. Cross smoked the fish and sold it in town. In 1876 a party of experienced fishermen from the Western Isles of Scotland unsuccessfully attempted to start a fish-curing industry. The problem with the early Kaikōura fishery was that shipping was irregular and there was no cold storage, so fish often spoiled before it got to market. Records from the 1880s describe wet fish being shipped from the old wharf, and in 1886 crayfish being shipped to Lyttelton. In 1908 one hundred tons of fish was exported from the old wharf. More could have been exported if the catch was able to be refrigerated.

11.1.3 1900–1920

Some of the names associated with this period are Charles Bushett (after whom Bushett's Shoal was named), Charles Nilsen, Charles Kingsmouth (or Kingsnorth), Alex Goodall, Carl Jensen, Harry Nilsen and John Jensen. The new wharf was built in 1909, and the old wharf behind Fyffe House became the fishermen's wharf. Photographs from this period show wharf sheds and a toilet on the old wharf, wooden holding pots for crayfish, and large catches of groper on the wharf's deck. Most boats were rowed or sailed, but there is also mention of a two-cylinder engine being imported from England by Alex Goodall for his boat the *Waipapa*. In 1916 Feron & Son built a cooling plant near the old wharf. This was later taken over by Nelson Fisheries and Cool Storage Ltd.

11.1.4 1920–1930

Sending fish to Christchurch markets was problematic as fish was pilfered from the railway. Fish were taken to the railhead at Parnassus and onwards by rail to Christchurch. The Kaikōura Fishermen's Association started transporting fish using their own lorry in 1927, but it was wound up after five years because of debts.

Table 5: Quantities of fish passing over the new wharf, 1924–1929

Date	Quantity
4 January 1924	2 tons fish
6 May 1924	26.5 tons fish
11 August 1925	1 ton fish
7 February 1927	3.75 tons fish
9 July 1928	1 ton rock lobster
5 August 1929	5 tons rock lobster

11.1.5 1930–1940

Filleting fish for export began in 1933. This led to more fish being caught, which put pressure on stocks. A prohibition on taking female crayfish with eggs, and size restrictions, were put in place. Guidelines were drawn up for the competency of masters for fishing boats. These became the fisheries regulations in 1938.

11.1.6 1940s–1950s

During the Second World War some younger fishermen went off to fight. In 1941 the Efficiency Act came into force, which meant that fish could no longer be sold from the wharf or from boats, but had to go through a retailer – raising the price of fish. There were rules for vessels, including compulsory log-keeping, restrictions on fishing to an area not more than 10 nautical miles of the coast, and before going to sea fishers had to report to an authorised officer. Naval officers, constables and persons authorised by the Minister of Marine were empowered to examine boats, licences and log books. There were seven boats operating in Kaikōura in 1942, and most fishing was by deep line and set line. In 1945 there was an extension of territorial waters from 3 nautical miles to 12. There was concern that outsiders were trashing Kaikōura’s inshore waters.

11.2 The wet fish fishery

11.2.1 Evolution and management

The weather is better on the south side of Kaikōura Peninsula than it is on the north, so the following account relates mostly to the south side.

Fishers were drop- and longlining until the early to mid-1960s. During that time pressure from foreign fishing caused the longline fishery to decline, until eventually it became uneconomical for local fishers.

About this time local fishers switched from longlining to set netting. Set nets are selective – mesh size is specific to the size of the fish targeted; a smaller mesh will catch small fish. The type and numbers of by-catch depends on the design and use of the net. Ideally, a compromise will be found so that undersize fish and non-target species miss the net or pass through the mesh.

In 1967 a moratorium was imposed on new fishing licences. That was lifted in 1970, and a new breed of fishers entered the fishery, assisted by funds from the Rural Bank. The number of licences increased about eightfold over the next decade.

In the early 1970s and 1980s there were 25 set netters, each with substantial catches that were not sustainable in the confined Kaikōura area. These new entrants were persistent hunters, skilled at their job. At this time set netting developed dramatically. Cotton nets were replaced with nylon, and fishers learned to manage nets and tides and not lose gear. Nets were attended every day, and were changed every 6–8 weeks, allowing them to dry and eliminating fouling. In the early days, netting was cheap and easy to use. But hand-pulled nets were used less as technological improvements such as motorised net haulers, larger vessels, echo sounders and electronics were adopted. The changes associated with technology had a major effect on harvesting efficiency.

In the 1970s, as foreign fishing declined and local methods changed, it took about four years for fish stocks to improve, partly helped by fish moving into Kaikōura from areas such as the Chatham Rise. All deep-water fish, including ling, groper, moki, warehou and white warehou are migratory, and their abundance varies according to the availability of food. This variability, and the cyclical nature of stocks, must be taken into account when managing these fisheries.

Reef fish favoured by recreational fishers, including blue cod, sea perch, butterfish, and trumpeter, are still present but not as plentiful.

The Quota Management System (QMS) commenced in October 1986. Many fishers were sceptical the system would work, and since its introduction half of Kaikōura's set fishers have left the fishery. The system disallowed aggregating gear, which led to a reduction in the amount of gear fishers used. Quota held by individual set-net fishers was relatively small, and bigger fishing companies bought quota which they leased to individuals. Thus, the change in fishing operations meant that fishers had to lease quota and work harder to harvest it. The amount of quota varied and there were many cuts in numbers able to be caught – some substantial. However, the changes made under the QMS have improved the sustainability of stocks. Management decisions are no longer made politically, but with the knowledge and experience of local fishers, who now respect the QMS.

11.2.2 The current fishery by species

The fishing industry as a whole has over 6,000 regulations – too many to describe in this report. They cover all aspects of the fishery, including harvesting, landing, processing and distribution, including exporting. MFish manage all compliance issues and auditing.

The wet fish fishery is managed under the Quota Management System. Within the Exclusive Economic Zone (EEZ), Quota Management Areas (QMAs) are defined for each species. A Total Allowable Catch (TAC) is set for each QMA. The TAC includes customary, recreational, illegal and commercial harvests. Customary, recreational and illegal harvests are estimated before the commercial harvest (TACC) quota is set.

The Kaikōura area (Clarence to Conway River) is part of QMA 3, which extends from Cape Campbell to Slope Point. This area is subdivided into Statistical Reporting Areas, with daily catches in each area reported to MFish.

The Kaikōura fishery is contained within Statistical Area 18, which runs from Cape Campbell in the north to the Waiau River (Figure 9). When considering harvests made between the Clarence and Conway rivers, it is important to remember they only represent a proportion of harvests recorded for Statistical Area 18.

To gather information about species caught in Statistical Area 18, Te Korowai obtained annual harvest figures from the MFish database. Te Korowai members with long experience of the fishery met with knowledgeable commercial fishers²¹ to consider the features of each fishery, including estimating percentages of species harvested from the more confined Kaikōura fishery. They interpreted data, and discussed the relationships between species. This body of information was presented to the rest of Te Korowai.

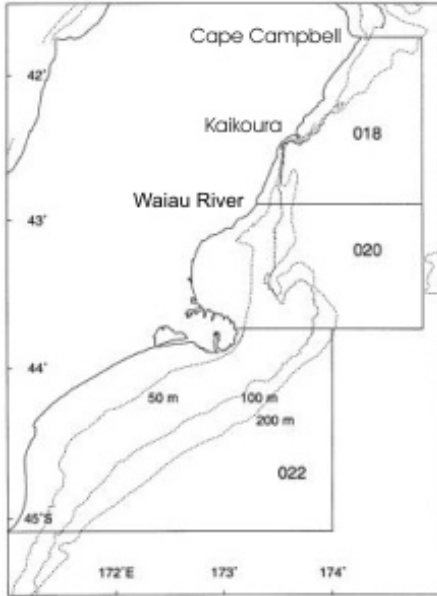
A description of commercial wet fish fisheries based on 25 species in the Kaikōura area follows (species are in alphabetical order). Some general points apply to the fishery:

- Of the species described below, only sea perch, blue cod, butterfish and large trumpeter live in the area all year. The rest are migratory fish which visit the area.
- There are often cycles of abundance that last many years.
- These figures only show legitimate commercial catch – there is no data on black market (unregistered commercial) catch.

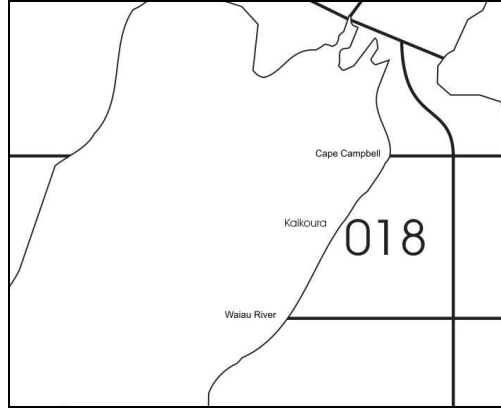
²¹ The commercial wet fish working group included Dennis Burrman, Derek Jones, Dick Cleall, and John Nicholls. Ted Howard collated the material.

Figure 9: Management and statistical reporting areas for Kaikōura coastal marine wet fish fisheries

Quota Management Area 3 for wet fish fisheries

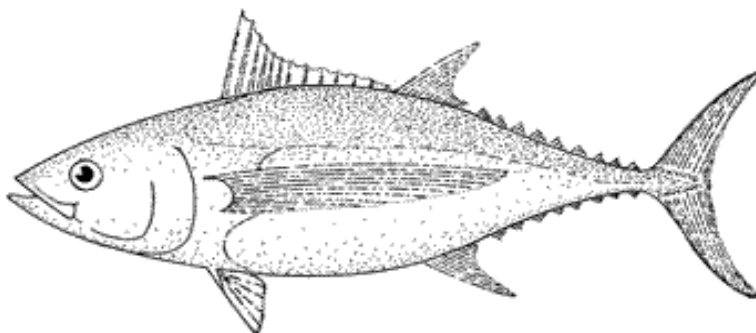


Wet fish Statistical Reporting Area 018



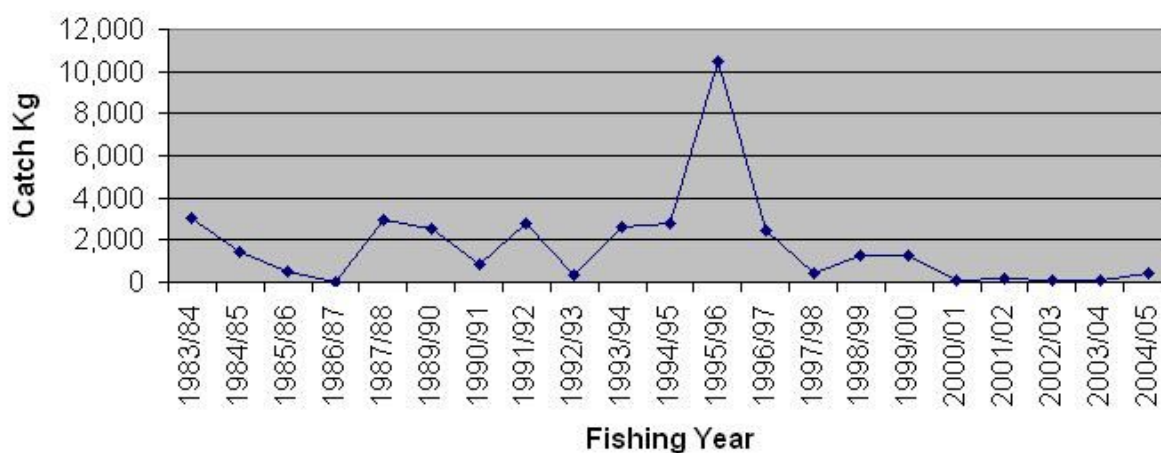
Nototodarus sloanii? New Zealand commercial squid.
Courtesy Dr Paddy Ryan, Ryan Photographic.

Albacore tuna 018



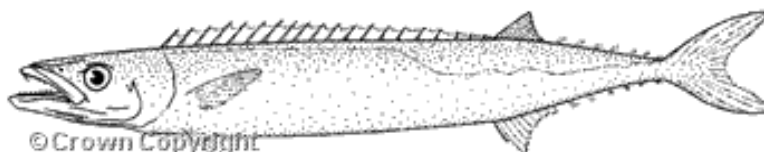
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ALB Catches Area 018

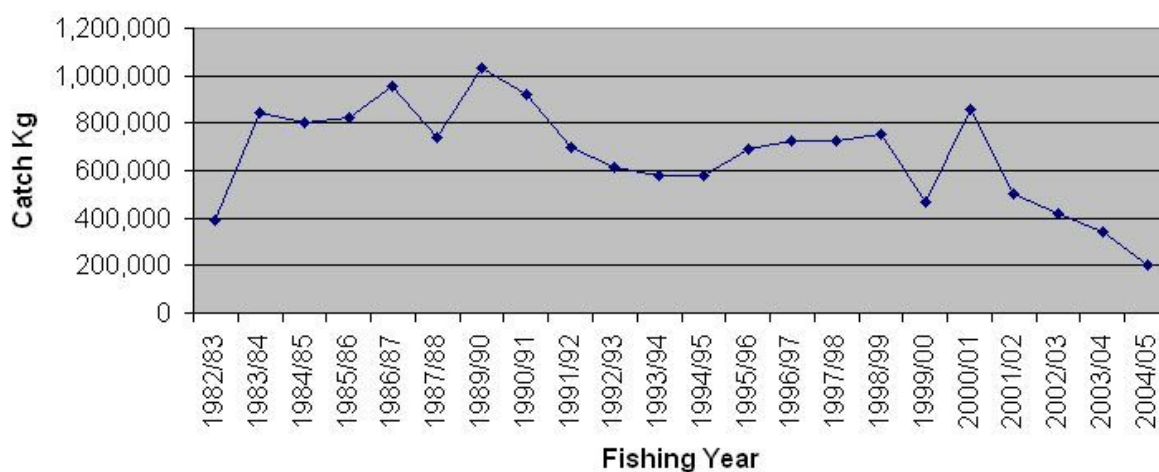


Species	Albacore – ALB 018
Time of year	April – end May.
Method	Trolling.
Local effort	A lot of local effort by Kaikōura fishers between 1983 and 1987. Eight local boats.
Non-local effort	Since 1987 there has been sporadic effort by local vessels.
Target species	Yes.
By-catch	Shark.
Stocks	Unknown.

Barracouta 018

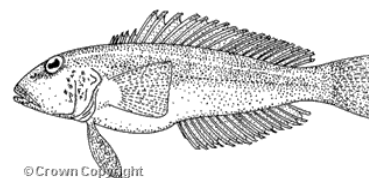


BAR Catches Area 018

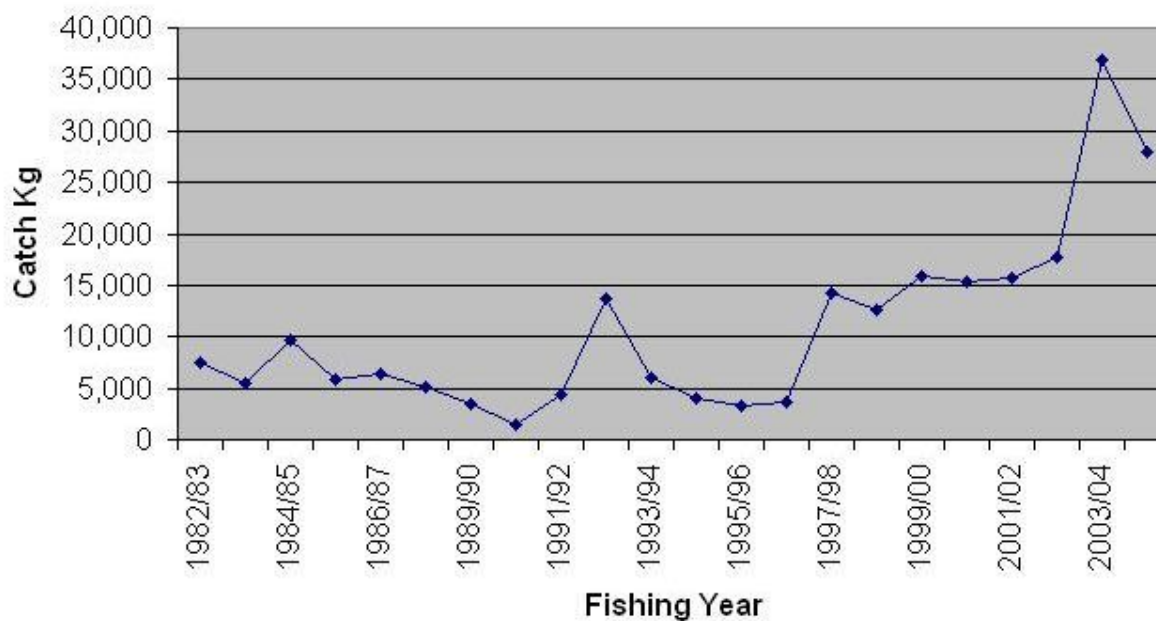


Species	Barracouta – BAR 018
Method	Bottom trawling, small amount of trolling.
Local effort	Small amount caught by local fleet.
Non-local effort	1983–1987: significant catch by large trawlers from Nelson and Lyttelton. Most of the harvest was taken by large trawlers from outside Kaikōura.
Target species	Yes.
Estimate % caught locally	Estimate 10% or less of total catch caught by local trawlers. Reason for drop-off from 2001/02 was price-related and more conservative regulations, by catch etc. Trawling methods designed to reduce by-catch.
By-catch	Flatfish, gurnard, red cod, dogfish.
Area	Trawl grounds north and south of Kaikōura Peninsula.
Stocks	Healthy.

Blue cod 018

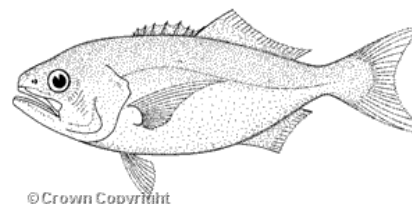


BCO Catches Area 018



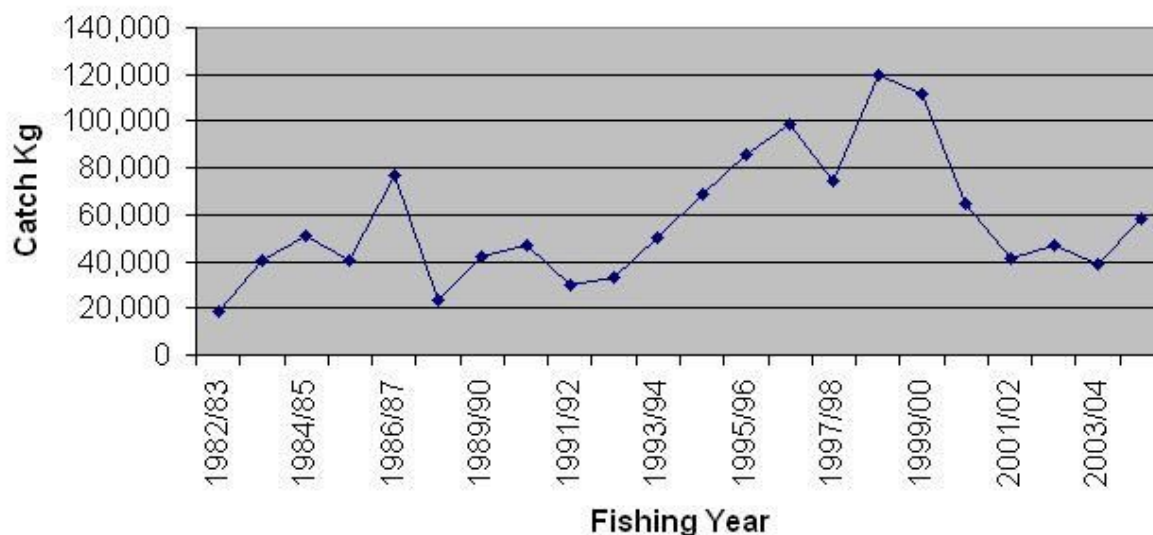
Species	Blue cod – BCO 018
Time of year	Year round.
Method	Trawling, potting and handlining.
Local effort	1982–1992: by-catch from rock lobster fishing and trawling. 1991–1994: significant local effort targeting blue cod. 1996–1997: one local fisher bought in 11 tonnes of BCO from outside the region, harvested by potting and trawling. Other local fishers have since bought in quota and targeted blue cod.
Non-local effort	May be small amount from Clarence to Cape Campbell.
Target species	Yes.
Estimate % caught locally	Large percentage caught locally.
By-catch	Sea perch, dogfish.
Area	Extensive – Clarence to Waiiau. Area north of Clarence to Cape Campbell may provide some BCO by-catch.
Stocks	Under stress in certain areas (Kaikōura Peninsula) due mainly to commercial and recreational effort.

Bluenose 018



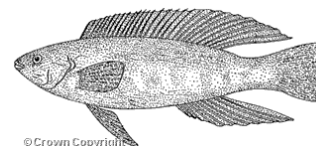
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BNS Catches Area 018

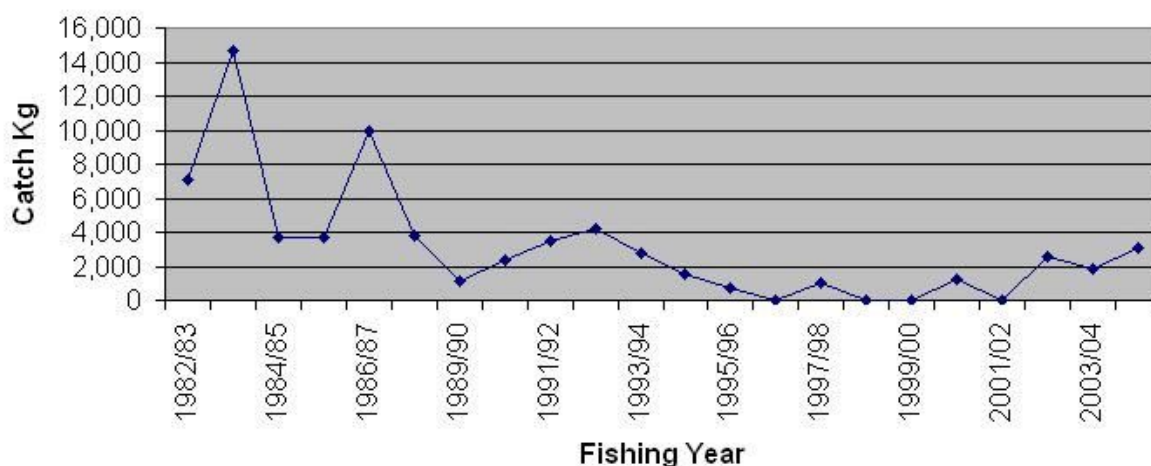


Species	Bluenose – BNS 018
Time of year	Predominantly winter – early spring, some in summer.
Method	Predominantly trawlers, also netting and lining.
Local effort	1994/95: targeted by local fishers. Very little catch history – quota bought in from outside the area. Small amount landed locally – estimated at approximately 20 tonnes.
Non-local effort	Trawlers from Nelson fishing slightly south of the Clarence River.
Target species	Sometimes, but a large proportion would come as by-catch from trawlers targeting hoki, nets targeting groper, and ling and lines targeting groper and ling.
Estimate % caught locally	Decline in 2001/02 may be explained by a change in targeted species.
Area	South of Clarence, off the peninsula and Conway Rise.
Stocks	Thought to be stressed.

Butterfish 018

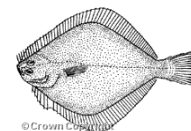


BUT Catches Area 018

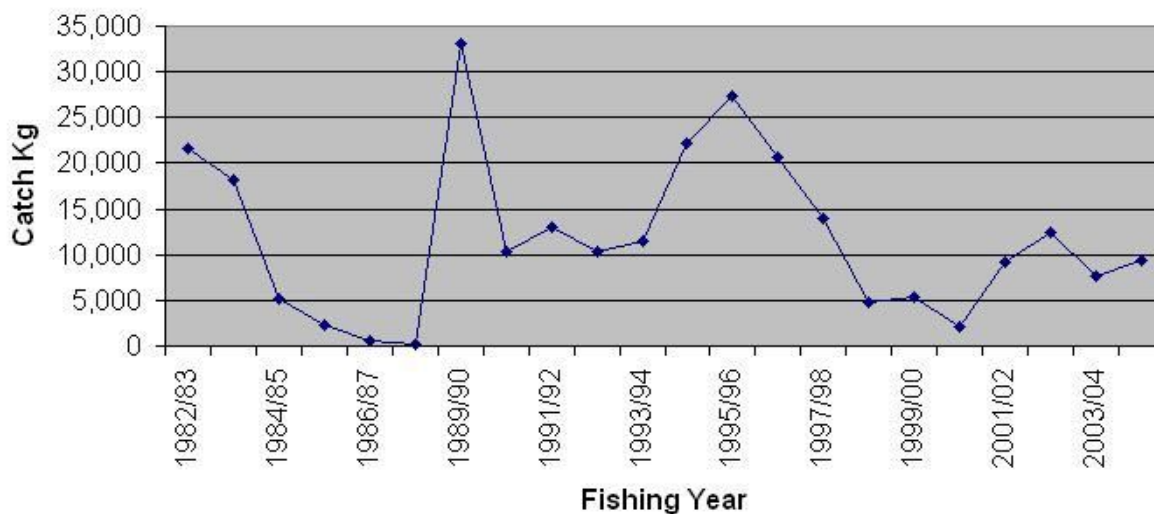


Species	Butterfish – BUT 018
Time of year	Winter and summer.
Method	Netting and ring potting.
Local effort	1982/83–85: targeted by local commercial fishers around Kaikōura Peninsula as well as north and south of the peninsula. Now the number targeting butterfish has dropped to two commercial fishers.
Non-local effort	Very little – there may be some carried out around Cape Campbell by rock lobster fishers.
Target species	Yes.
Estimate % caught locally	Large percentage caught locally.
By-catch	Moki, rig, sea perch, dogfish.
Area	Caught inshore north of Kaikōura, Kaikōura Peninsula and Haumuri Bluffs.
Stocks	Healthy.

Flatfish (7 species) 018

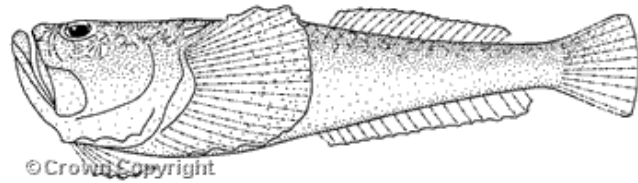


FLA Catches Area 018

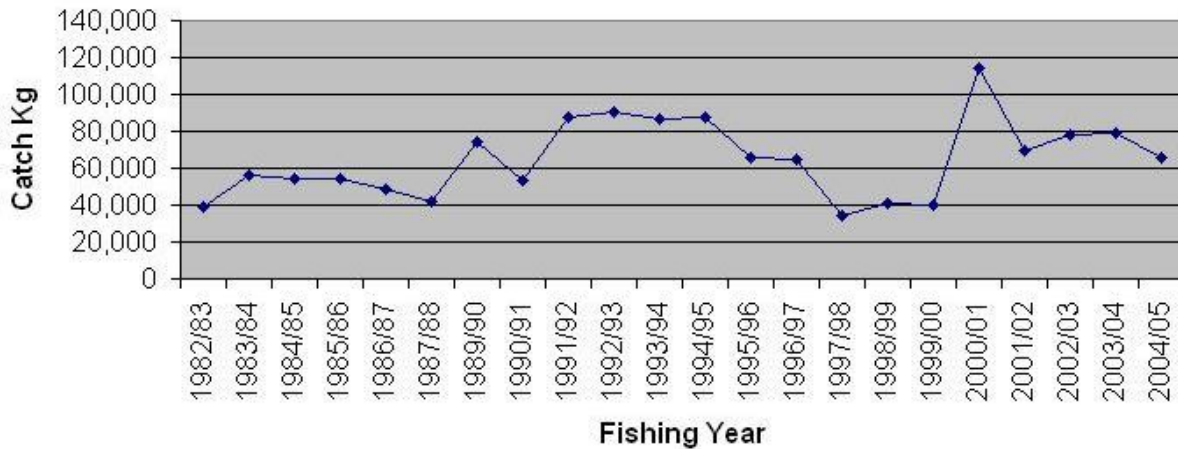


Species	Flatfish – FLA 018
Time of year	Winter and summer.
Method	Trawling.
Local effort	1986/87: trawling with local fishers investing in trawlers. Ted Forbes, Henry Nee and Derek Jones were some of the long-established trawler operators in Kaikōura. More recently the trawling fleet has been significantly reduced.
Non-local effort	Some flatfish caught by trawlers from outside Kaikōura.
Target species	Predominantly.
Estimate % caught locally	Not known.
By-catch	Gurnard, rig, dogfish.
Area	Peninsula to Hāpuku River, South Bay south to the Tunnels, off Black Rock, Haumuri Bluffs to Waiau River. Bulk of catch from north and south of the peninsula.
Stocks	Unknown.

Giant stargazer (monkfish) 018

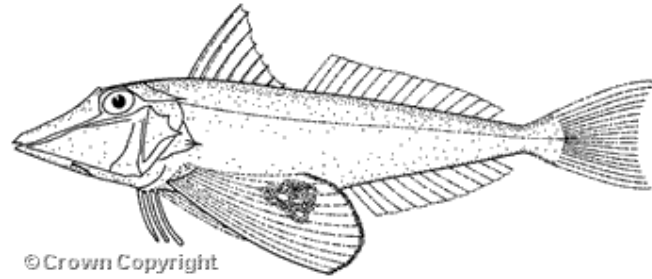


STA Catches Area 018

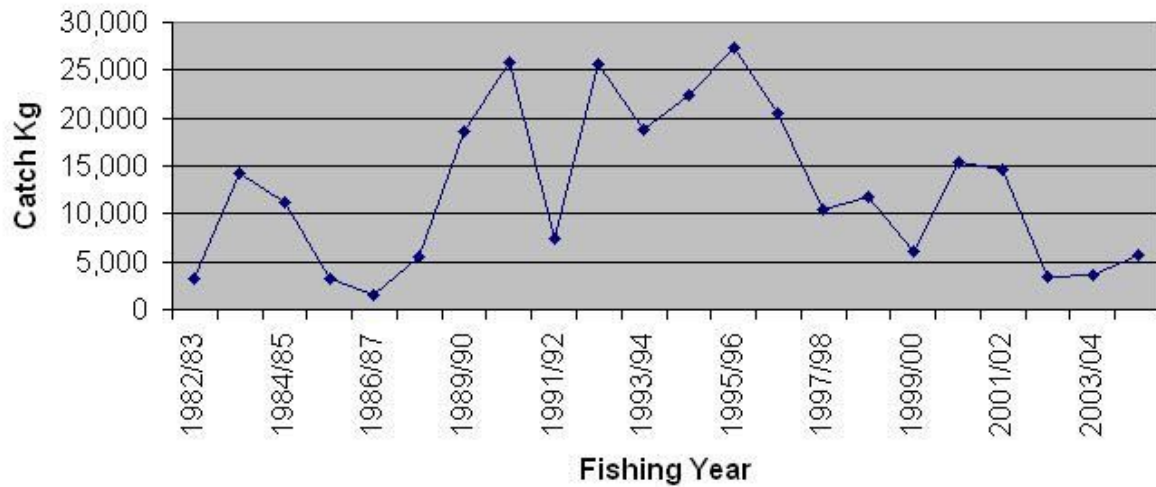


Species	Giant stargazer – STA 018
Time of year	Short season, end of July. Some summer by-catch.
Method	Trawl and set netting.
Local effort	Majority landed into Kaikōura from trawlers and as by-catch from netting vessels.
Non-local effort	Some vessels from outside Kaikōura, particularly Nelson trawlers.
Target species	No.
Stocks	Unknown.

Gurnard 018

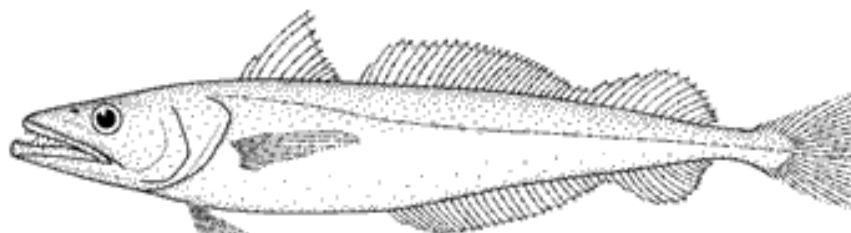


GUR Catches Area 018



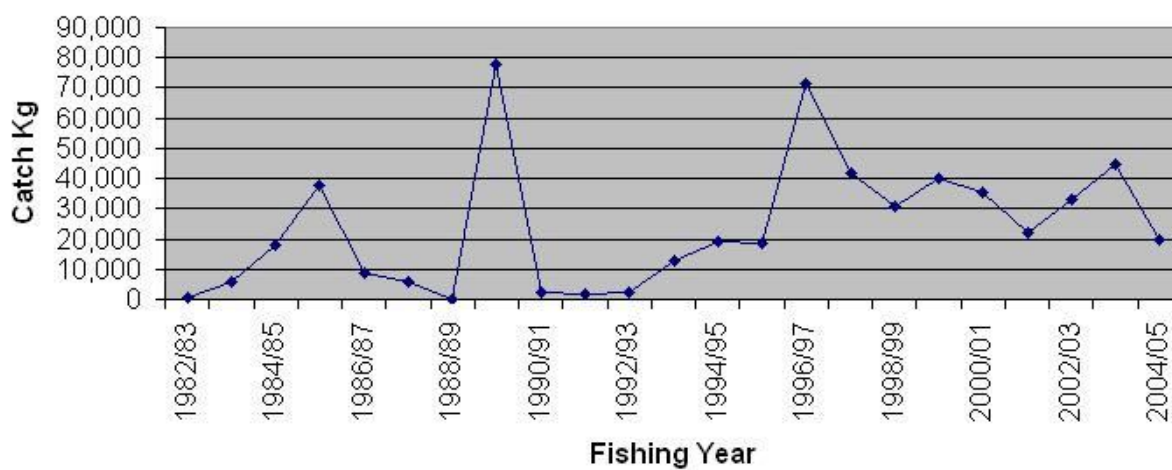
Follows or mirrors details of flatfish, as gurnard is predominantly by-catch from targeting flatfish.

Hake 018



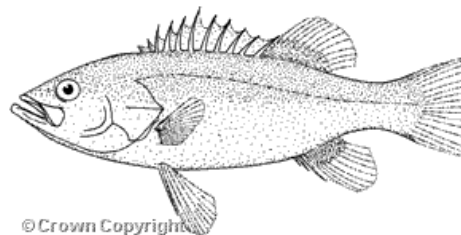
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HAK Catches Area 018

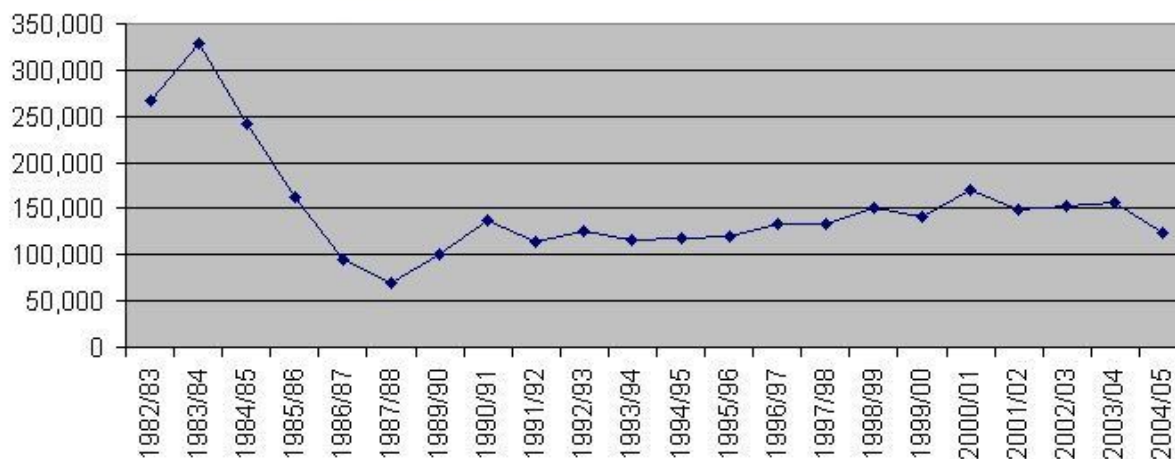


Species	Hake – HAK 018
Method	Trawling and netting.
Local effort	Small amount caught by local net fishers as by-catch. Estimate 1–5 tonnes per year.
Non-local effort	Large offshore trawlers.
Estimate % caught locally	Local boats would catch less than 20 tonnes per year.
By-catch	Hoki, ling, groper.
Area	Deeper water, hoki grounds
Stocks	Unknown.

Hāpuku (groper) 018

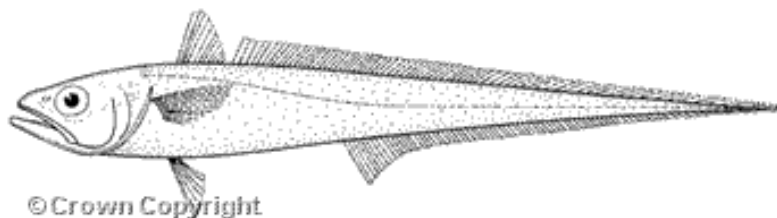


Hapuku Catch 018

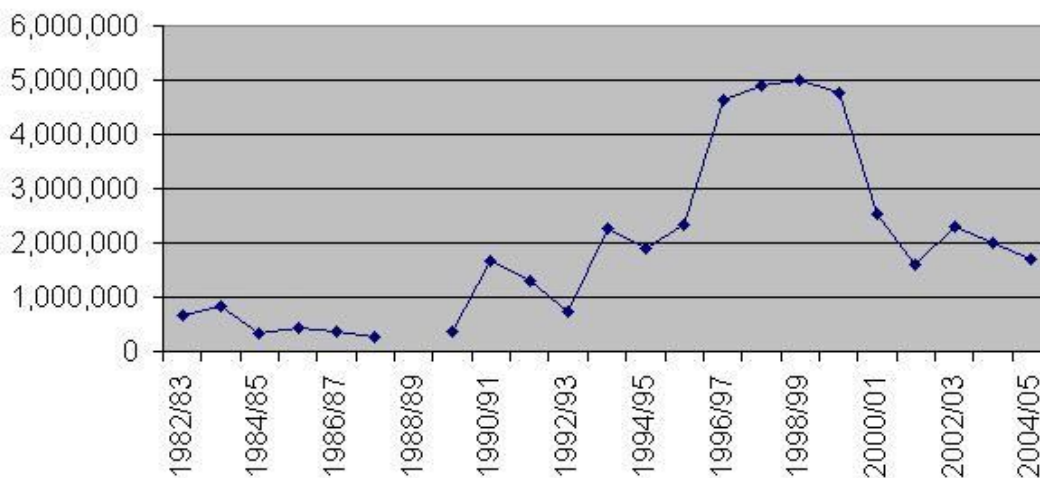


Species	Hāpuku (groper) – HAP 018
Time of year	Predominantly May to August.
Method	Netting and some trawling.
Local effort	Most fish caught locally from the Kaikōura region.
Non-local effort	By-catch from hoki vessels and offshore trawlers.
Target species	Yes, from local netting vessels.
Estimate % caught locally	Majority caught by local fleet.
By-catch	Ling, dogfish, shark, perch, warehou, moki.
Area	From Kaikōura Peninsula south to off Waiiau River.
Stocks	Unknown, but not thought to be under threat.

Hoki 018

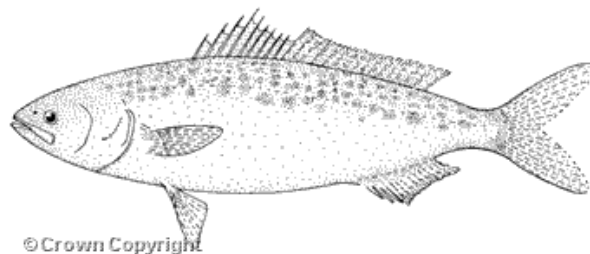


Hoki Area 018

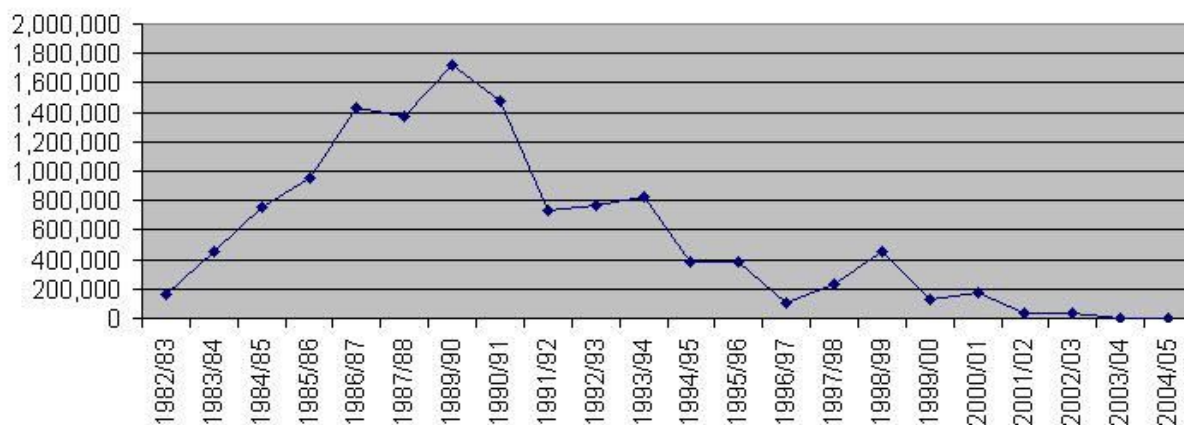


Species	Hoki – HOK 018
Method	Trawling and small amount of netting.
Local effort	Only as a by-catch of set netting.
Non-local effort	1997–2001: Nelson-based trawlers. Boats from Cook Strait would come down and fish off Kaikōura when fishing declined in their area.
Target species	Yes, for large trawlers.
Estimate % caught locally	Negligible.
By-catch	Ling, groper, warehou, deep water shark.
Area	Predominantly south of Clarence and off Conway Rise in deep water.
Stocks	Stressed.

Kahawai 018

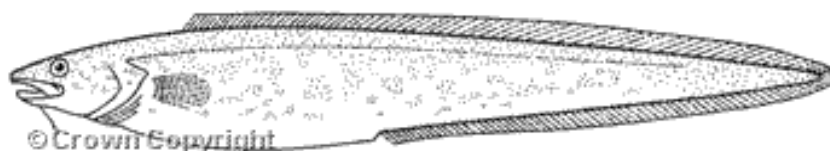


KAH

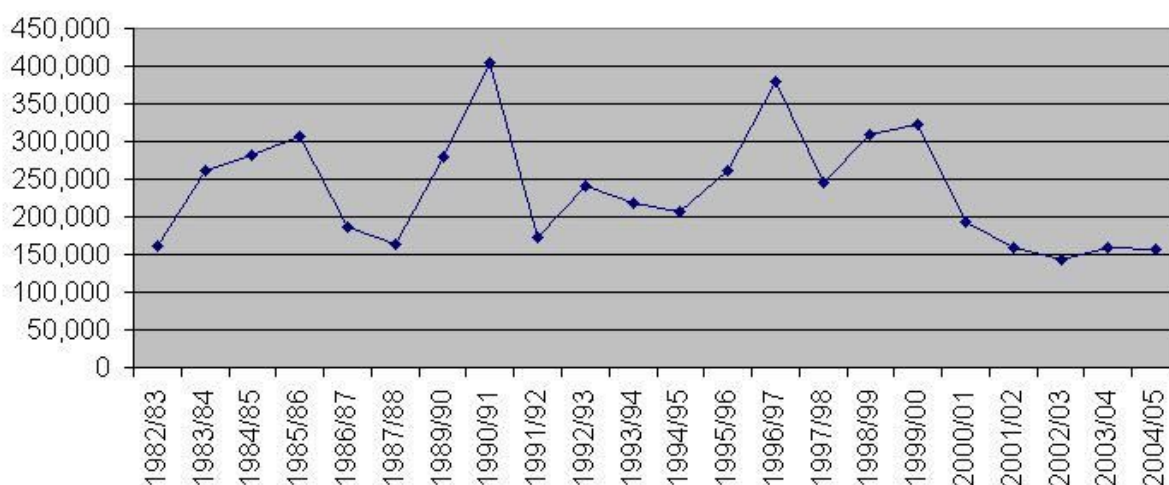


Species	Kahawai – KAH 018
Time of year	Mainly during summer.
Method	Purse seining by large vessels. Trolling. Surface netting used in the late 1970s and early 1980s by local fishers predominantly for bait (rock lobster fishing).
Local effort	Significant effort by rock lobster fishers for bait in the 1970s and 1980s.
Non-local effort	Majority of catch from Nelson-based purse seiners, particularly in the 1980s and early 1990s.
Target species	Yes.
Estimate % caught locally	Local catches not significant in recent years.
Area	North and south of the peninsula, although purse seiners concentrated their efforts north of the peninsula.
Stocks	Stressed.

Ling 018

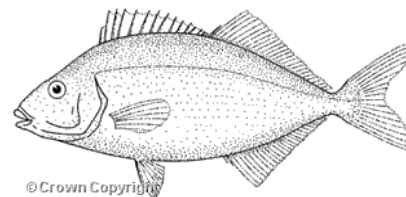


LIN Catch

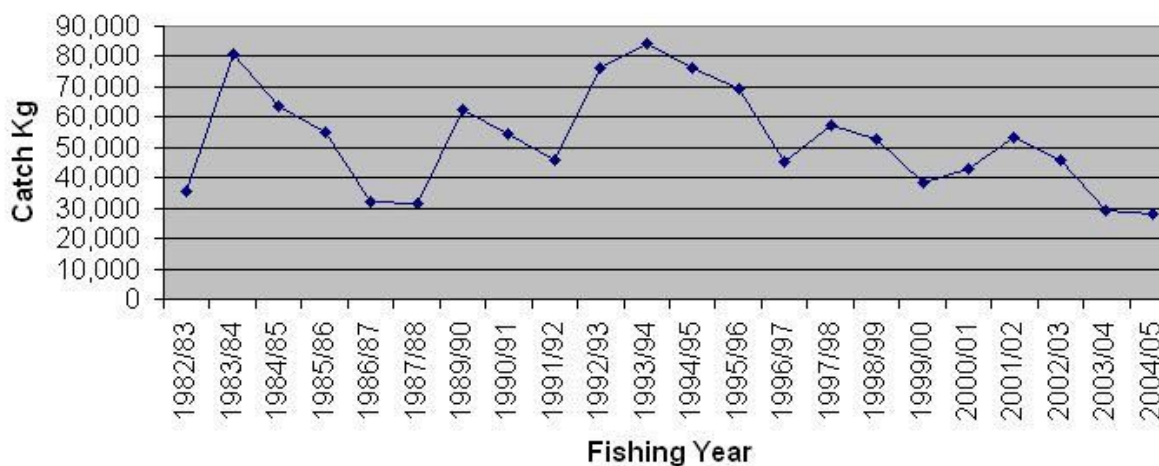


Species	Ling – LIN 018
Time of year	Summer and winter.
Method	Lining, netting and trawling.
Local effort	Significant local effort by netting and lining.
Non-local effort	Significant catches by trawling vessels from outside of Kaikōura.
Target species	Yes, for local fisherman but also as a by-catch from netting. A by-catch from large hoki vessels.
Estimate % caught locally	Approximately 100–150 tonnes caught locally.
By-catch	Hoki, school shark, dogfish, groper, warehou, deep-water shark.
Area	Most caught locally from south of Kaikōura Peninsula to off Waiiau River in deep water.
Stocks	Recently much more difficult to catch. Also affected by price drop due to mercury content, especially exports to Australia, which has had an impact on catch levels.

Moki 018

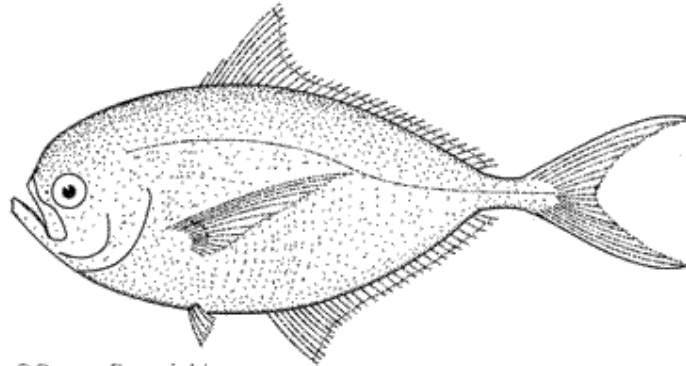


MOK Catches Area 018



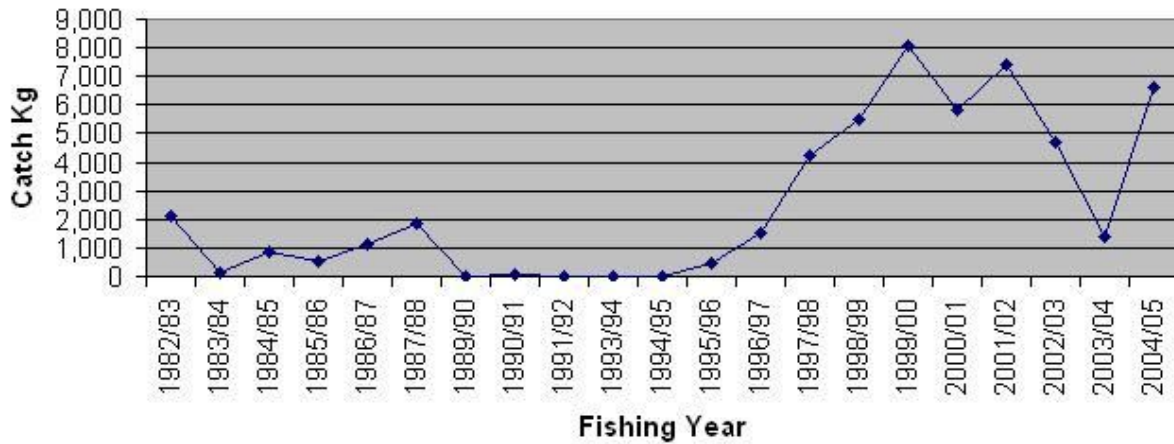
Species	Moki – MOK 018
Time of year	Autumn, early winter.
Method	Netting.
Local effort	Inshore catch 1982/85 targeted by local netting fleet. Now caught mainly as by-catch in tarakihi gear (nets).
Non-local effort	Very little.
Target species	Very much in the late 1970s and 1980s, but not so much recently.
Estimate % caught locally	90%.
By-catch	Rig, school shark, dogfish, warehou.
Area	From the Clarence to Waiau rivers, with local effort concentrated from Kaikōura Peninsula to the Waiau River.
Stocks	Unknown.

Rays bream 018



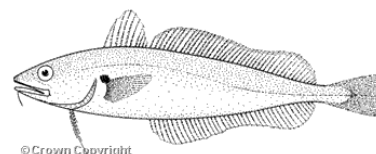
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RBM Catches Area 018



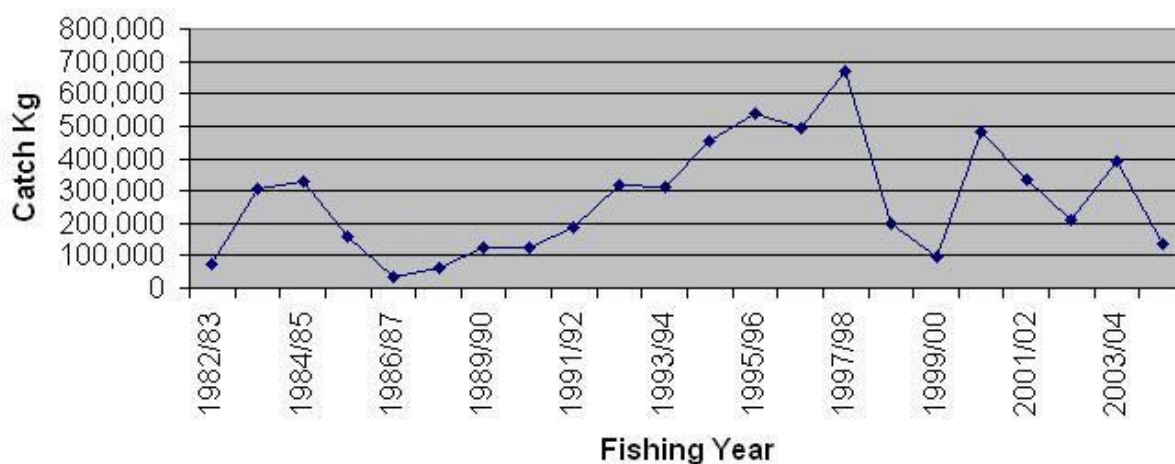
Mostly by-catch to non-local trawl fishery.

Red cod 018



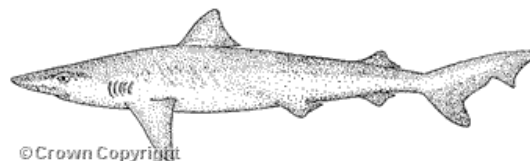
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RCO Catches Area 018

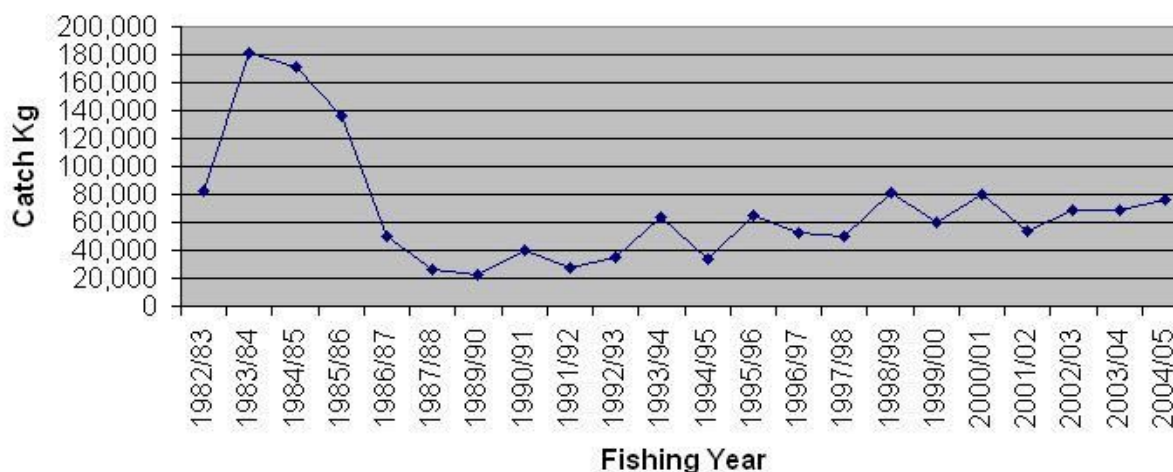


Species	Red cod – RCO 018
Method	Trawling and a very small amount as by-catch from netting.
Local effort	Significant catches by local trawler fishers in the late 1970s and 1980s. New entrants into the trawling fleet saw large numbers of cod caught between 1990 and 1998.
Non-local effort	Outside trawlers caught 25% of the commercial quota.
Target species	Yes.
Estimate % caught locally	75% until recently.
By-catch	Flatfish, dogfish, gurnard.
Area	Caught in average depths of 65 metres, and the bulk (80%) caught north of Kaikōura Peninsula.
Stocks	Price of cod dropped in 1999. Often the catch is reflected by price. Stock healthy. However, recreational fishers have a different perception, and say they do not see much red cod.

School shark 018

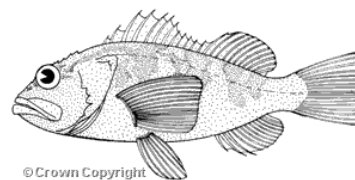


SCH Catches Area 018

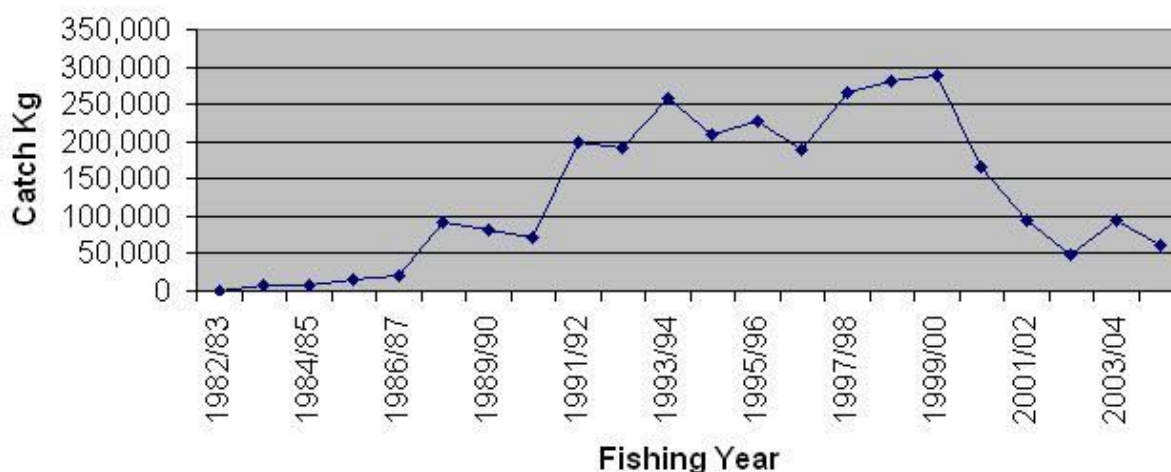


Species	School shark – SCH 018
Method	Set netting, small amount of by-catch from trawling.
Local effort	Local boats and some outside trawlers.
Non-local effort	Picton boats line for school shark.
Target species	Yes.
Estimate % caught locally	In pre-quota years nearly all local boats were involved, but after QMS was introduced the commercial quota was heavily reduced. Almost all school shark are now harvested locally. One local fisher catches 40 tonnes per year.
By-catch	Rig, moki, elephant fish, dogfish, warehou.
Area	Caught both in shallow and deep water over the whole spectrum between Cape Campbell and south of the Waiau River.
Stocks	Unknown.

Sea perch 018

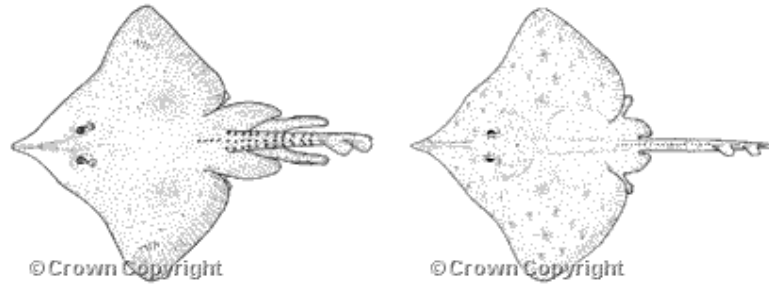


SPE Catches Area 018

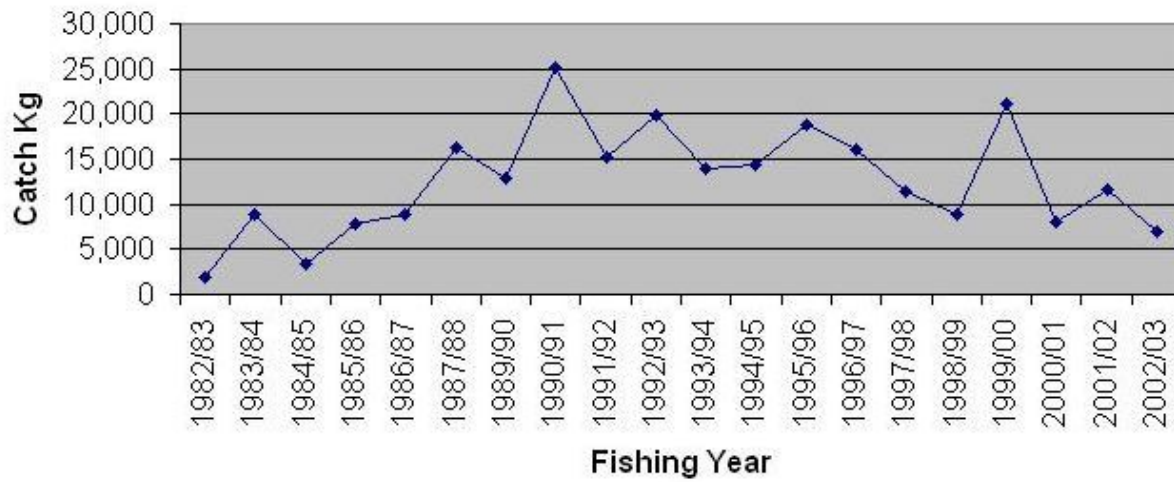


Species	Sea perch – SPE 018
Method	Trawling, potting, hand lining.
Local effort	One local fisher caught significant quantities in 1986/87 while establishing a market driven by Virgo Fisheries. Establishing this market made the perch fishery a viable proposition for local fishers. Since then market fluctuations tend to dictate catch. Changes in the local fishing fleet over the last few years have seen methods revert to hand lining and lining.
Non-local effort	A small amount.
Target species	Yes.
Estimate % caught locally	Initially 250 tonnes was harvested per year. When quota was introduced in 1999/2000, there was a substantial reduction in what could be caught commercially. Targeting perch stopped in 2001/02, which together with a loss of suitable markets saw a drop in catches. Since then, a small number of commercial fishers hand line for sea perch off Kaikōura Peninsula.
By-catch	Dogfish.
Area	Clarence to Conway.
Stocks	Thought to be relatively stable, although perch has become a target for recreational fishers which may have implications.

Skates 018



SKA Catches Area 018

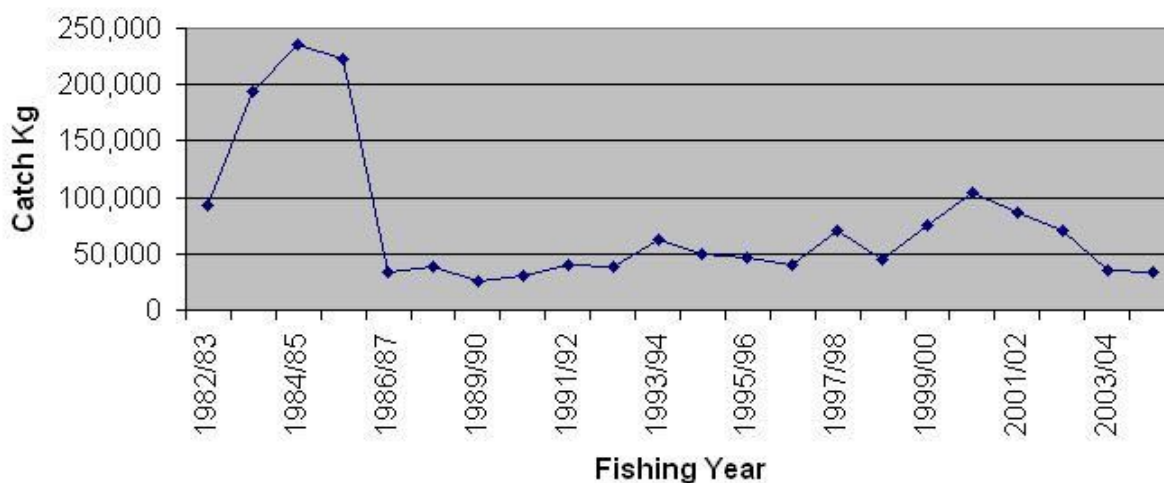


A by-catch of the flatfish fishery.

Spotted dogfish (rig) 018

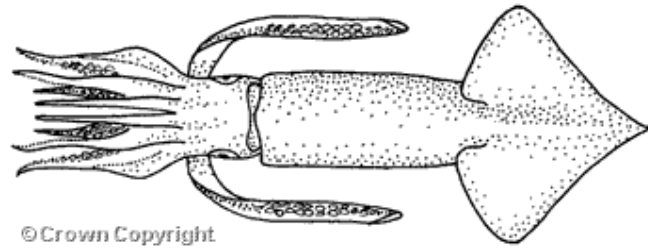


SPO Catches Area 018



Species	Spotted dogfish (rig) – SPO 018
Time of year	Mainly summer.
Method	Netting and a by-catch of trawling.
Local effort	Prolific amounts were caught by set netting in the late 1970s and early 1980s. Catches were declining pre-QMS. In 1986/87 quota was introduced, with a 78% reduction in the amount of rig commercial fishers had been harvesting.
Non-local effort	Some netting and trawling effort from boats.
Target species	Very much so in 1970s, 1980s, and even the 1990s.
Estimate % caught locally	70–80%.
By-catch	Moki, warehou, dogfish, ling, hāpuku.
Stocks	Unknown.

Squid 018

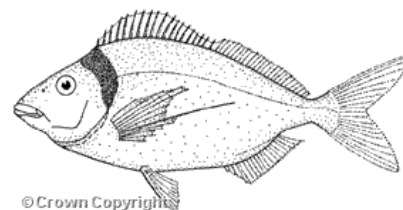


SQU Catches Area 018

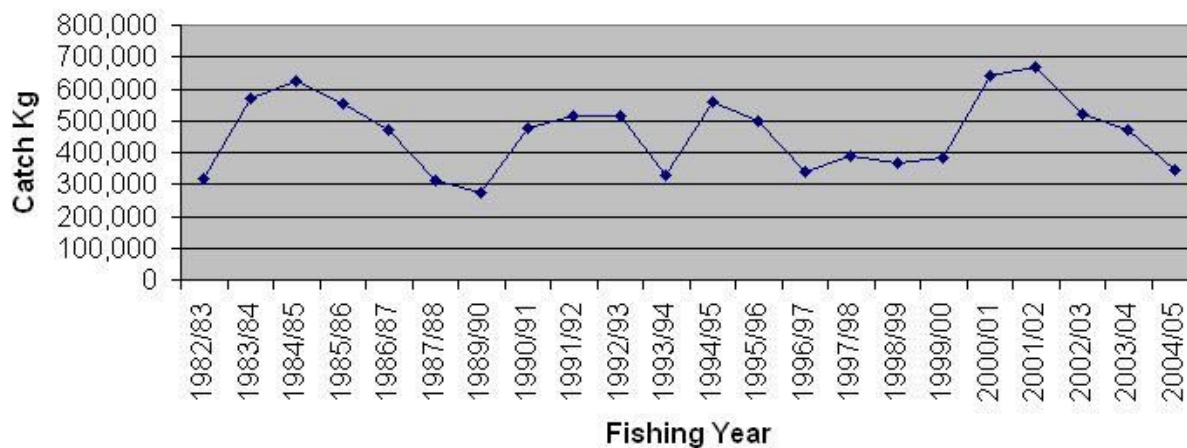


Boats from outside Kaikōura, mostly trawl fish-jigging in the late 1970s and early 1980s.

Tarakihi 018

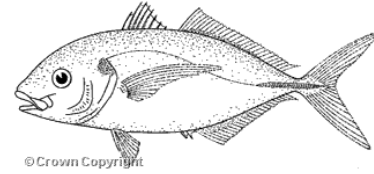


TAR Catches Area 018

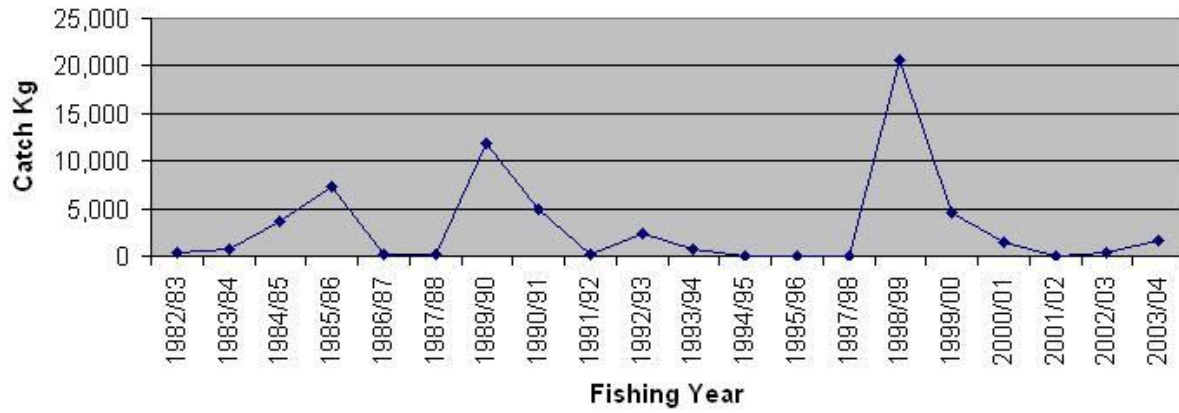


Species	Tarakihi – TAR 018
Time of year	November to February, late March to June.
Method	Set netting and trawling.
Local effort	One of the most significant fisheries established in Kaikōura in the 1980s, with the introduction of smaller-sized mesh (5-inch) in set nets. Most caught by local netting boats until two years ago – approximately 400–500 tonnes per year. Tarakihi observed to follow a seven-year cycle.
Non-local effort	Some outside trawlers.
Target species	Yes.
Estimate % caught locally	70–80%.
By-catch	Moki, warehou, hāpuku, ling, dogfish.
Area	Clarence to Waiau, with the majority coming from Goose Bay to the Waiau River.

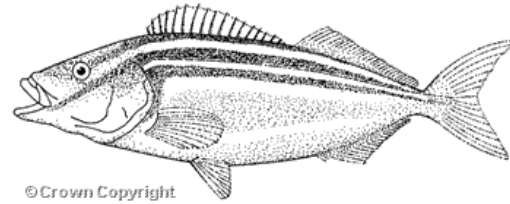
Trevally 018



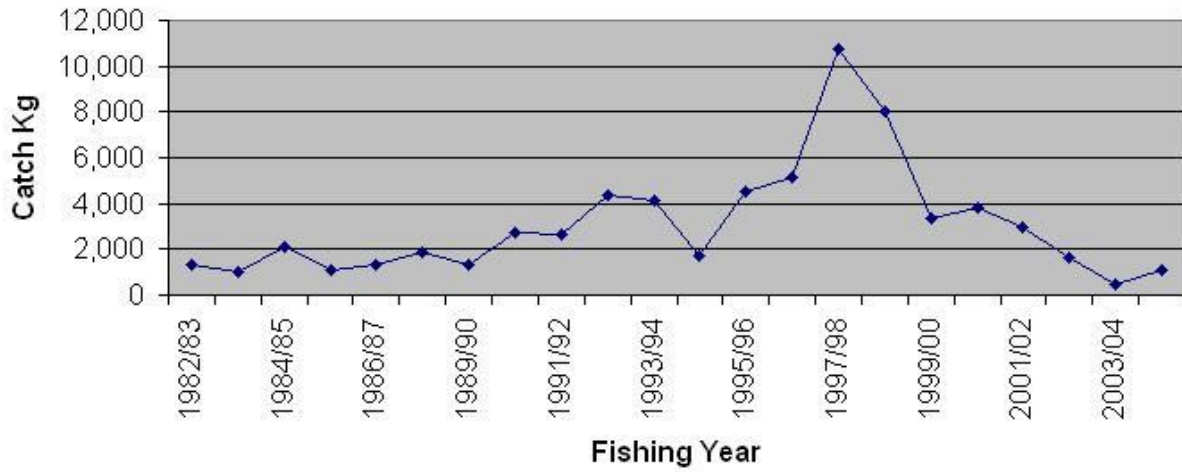
TRE Catches Area 018



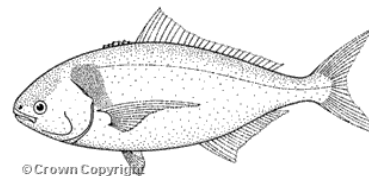
Trumpeter 018



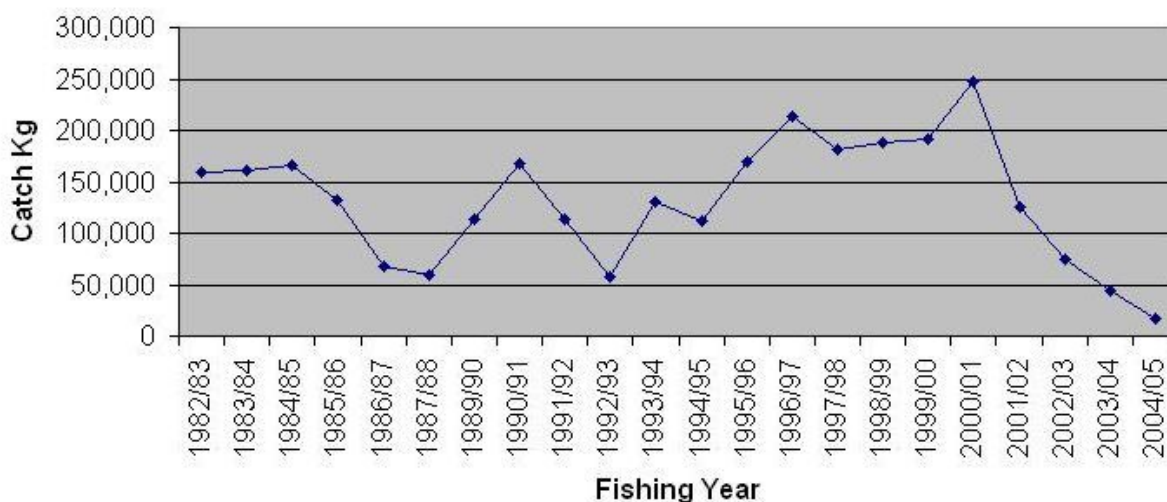
TRU Catches Area 018



Warehou 018



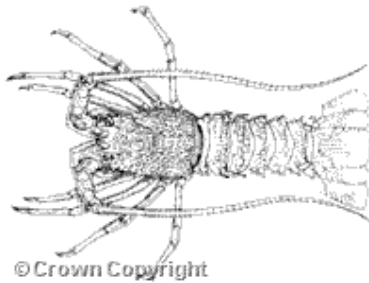
WAR Catches Area 018



Species	Warehou – WAR 018
Time of year	Summer.
Method	Set netting and trawling.
Local effort	Significant catches of warehou in the 1980s before the introduction of the QMS.
Non-local effort	Trawlers from outside Kaikōura.
Target species	Yes, in some cases, but significant amount caught when targeting (set netting for) rig, ling, hāpuku and tarakihi.
Estimate % caught locally	80% caught by local boats.
Area	Clarence to Waiiau, Goose Bay and Haumuri Bluffs are significant areas.
Stocks	Large decrease recently, mainly due to trawlers fishing further south, off Dunedin.

11.3 The rock lobster fishery

Red spiny cold-water rock lobster, kōura or crayfish (*Jasus edwardsii*)



11.3.1 The CRA5 management area

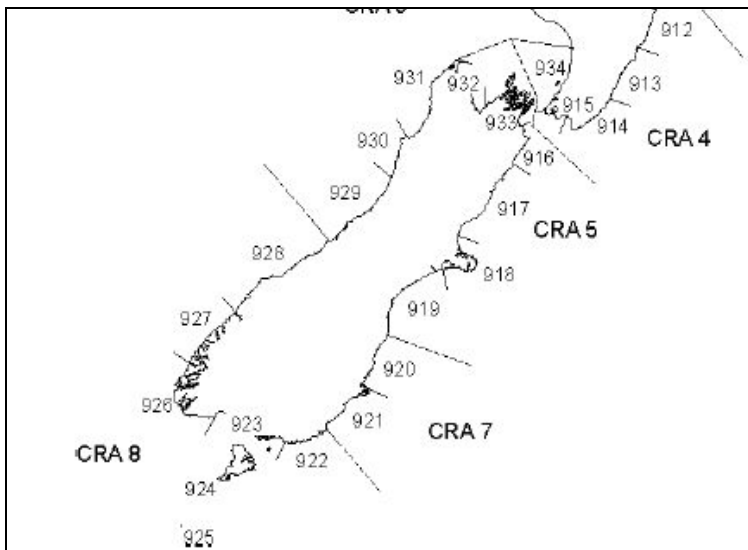
CRA5 extends from Farewell Spit to the Waitaki River mouth.

The current Total Allowable Catch (TAC) in the CRA5 area is 477 tonnes, made up of:

- recreational – 35 tonnes
- customary 40 – tonnes
- commercial 350 – tonnes
- illegal/mortality – 52 tonnes.

The CRA5 management region is comprised of six statistical reporting areas: 916, 917, 918, 919, 932 and 933. Statistical area 917, encompassing the Kaikōura coastal and marine area, runs from the Clarence River to the Waimakariri River (Figure 10). Fishery data reported for statistical area 917 is the basis of this account about the rock lobster fishery.

Figure 10: Management and statistical reporting areas for the Kaikōura coastal marine rock lobster fishery



11.3.2 Harvest trends

Vessel numbers and harvest volumes

Commercial rock lobster landings were collected and published by the NZ Marine Department from 1945 to 1977. In 1945, nine vessels landed 43.5 tonnes. The maximum harvest of 425.5 tonnes was caught in 1950 by 39 vessels. In 1977, 190 tonnes was caught by 140 vessels. In this period the average catch per vessel fluctuated from a high of 10.9 tonnes to a low of 1.3 tonnes (Table 6).

Table 6: Catch history (average/vessel) for rock lobster, 1945–1977, and catch history (CPUE) for rock lobster in Statistical Area 917, 1979–2004

Year	Tonnes	Vessels	Average/vessel	Year	Tonnes	Vessels	CPUE
1945	43.5	9	4.8	1979	*	51	0.676
1946	51.8	10	5.2	1980	*	50	0.870
1947	83.9	11	7.6	1981	*	51	0.855
1948	106.3	13	8.2	1982	*	60	0.939
1949	260.2	32	8.1	1983	*	59	0.801
1950	425.5	39	10.9	1984	*	60	0.810
1951	160.3	36	4.5	1985	*	56	0.701
1952	187.8	34	5.5	1986	*	55	0.673
1953	98.9	34	2.9	1987	*	51	0.447
1954	103.2	33	3.1	1988	*	44	0.371
1955	110.3	30	3.7	1989	*	44	0.380
1956	112.3	31	3.6	1990	169.5	40	0.419
1957	92.5	34	2.7	1991	174.3	37	0.309
1958	112.5	32	3.5	1992	140.0	31	0.344
1959	142.1	31	4.6	1993	177.4	35	0.363
1960	110.7	28	3.9	1994	164.9	27	0.350
1961	106.9	27	3.9	1995	153.4	25	0.385
1962	118.5	30	3.9	1996	131.2	22	0.464
1963	113.0	48	2.3	1997	136.7	21	0.654
1964	147.4	37	3.9	1998	128.2	18	0.756
1965	196.5	57	3.4	1999	127.2	21	0.773
1966	221.7	66	3.3	2000	147.0	18	0.825
1967	192.0	74	2.6	2001	140.3	18	0.838
1968	140.0	65	2.1	2002	137.9	17	0.954
1969	134.2	66	2.0	2003	128.1	17	1.179
1970	99.8	57	1.7	2004	118.3	15	1.802
1971	139.5	77	1.8				
1972	176.2	104	1.7				
1973	132.6	101	1.3				
1974	147.0	87	1.7				
1975	202.0	103	2.0				
1976	186.0	87	2.1				
1977	190.0	140	1.4				

* Data yet to be collected

Since 1979 all fisheries research data has been collected by the Ministry of Fisheries. In 1979, 51 vessels fishing for lobster harvested 47.9 tonnes, and during the 2004/05 season 15 vessels harvested 118 tonnes. This 2004/05 catch represents 33.8% of the CRA5 Total Allowable Commercial Catch (TACC) of 350 tonnes.

All data from 1979/80 to 2004/05 has been summarised for the NZ Rock Lobster Industry Council, which has the contract for providing this information to MFish. The information is part of the annual New Zealand Fisheries Management Report for September 2005.

Harvest trends

From 1979 to 2006 harvest trends were based on Catch Per Unit Effort (CPUE), calculated from the averaged weight of rock lobsters in each pot lift in statistical area 917 (Table 6).

This information shows that between 1979 and 2004 the CPUE decreased to a low of 0.309 kg per pot in 1992–93. After intervention by commercial managers, the CPUE has risen to 1.179 kg per pot lift, representing a 380% increase. Since CPUE was adopted to gauge the rock lobster stock, it has increased overall by 175%.

In 1990 the Quota Management System was put in place for rock lobster. By 1992 the quota had been reduced from 476 tonnes to 308 tonnes, representing a 52% cut in the commercial TACC. In 1999 the CPUE allowed a 15% increase in the TACC to the current 350 tonnes.

In 2003, good CPUE results allowed commercial fishers to apply for another increase, but when ballot papers were sent to all quota owners to vote for an increase of 10%, they almost unanimously rejected it. Quota owners were prepared to forgo the increase for a larger biomass and a higher CPUE, as well as allowing the lobster time to increase in size to provide a better financial return.

In 1993 MFish changed the way lobster were measured, giving more accurate data on which to base stock assessments. Previously, a lobster could be taken if its tail was over six-inches in length. Now, measurements are taken across the width of the second segment of the tail, which must be 60 millimetres for female lobsters and 54 millimetres for males.

11.3.3 Harvesting methods

A very early harvesting method was hand pulling supplejack pots, also known as beehive pots. Mechanical winches were installed on vessels in the early 1950s. By the mid-1960s, steel-framed trawl mesh pots had been introduced, and were a lot larger and heavier than the supplejack pots. Steel-mesh pots were used from the early 1970s.

Pots are the only successful way to commercially harvest rock lobsters. Regulation escape gaps were introduced to pots in 1994 to reduce damage caused by handling undersize lobsters.

There is no restriction on the number of pots a fisher can have in the water.

11.3.4 Management of the CRA5 fishery

SeaFIC manage all landing data, permit transfers and quota/ACE (Annual Catch Entitlement) transfers. Fishers must provide a Catch Effort Landing Report (CELR) each day they harvest, a CPUE form, a Monthly Harvest Report (MHR), log-book data, and a tag recapture form. If recreational rock lobster catch is landed from a commercial vessel, an S1,11 form must be produced.

If these forms are not correctly filled out, the fisher has one chance to correct them or is instantly fined up to \$750. Those who refuse to fill in the form lose their permit to fish.

Non-compliance with the rules can lead to a maximum fine of \$250,000 and confiscation of the vessel and all gear associated with fishing. Setting up shelf companies has been prevented by the Associated Persons Regulation, where anyone associated with a person that has been charged with a fisheries violation can also be charged.

The Rock Lobster Commercial Stakeholder Organisation (CRAMAC 5) was officially formed in 1997 as an incorporated society. CRAMAC 5 is a member of the umbrella organisation, the New Zealand Rock Lobster Industry Council (NZRLIC). The function of CRAMAC 5 is to manage the CRA5 resource, including:

- subcontract research for voluntary log books and tagging programmes
- liaison with other stakeholder groups, iwi, recreational fishers, customary fishers, and local government bodies
- involvement with other management initiatives in the CRA5 region.

CRAMAC 5 has a policy and procedures manual for the functions of the committee. The committee has disputes resolution procedures if ever required, and has developed a training program for all members and crew.

The committee meets every six weeks to conduct business; CRAMAC 5 employs a part-time regional officer and a log-book liaison person. The committee has eight members representing each local port (Picton, Ward, Kaikōura and Motunau), thus keeping communication open to all fishers in these areas.

The rock lobster resource is managed by stock assessment. An assessment is called if there is a drop in CPUE and the CPUE gets close to what is called a 'decision rule'. The objective is not to trigger a decision rule by bringing in management strategies that are too punitive, and fishers may agree to voluntary shelve quota; accept a quota reduction; or establish a harvest management plan that would spread effort throughout the season. The CRA5 decision rule is set at a CPUE of 0.44 kg/pot. The current CPUE for CRA5 is 1.924; around 4.5 times the decision rule setting.

The commercial rock lobster fishery is heavily regulated. Compliance with the regulations is now a major part of operating a fishing business. Filling in forms correctly, caution with by-catch, and keeping gear in compliance all require attention. So do Fish Safe standards (devised by Occupational Safety and Health, the Seafood Industry Training Organisation and Maritime NZ) and provisions of the Resource Management Act.

There are large numbers of research reports available if or when required. Based on generic industry research, they cover many areas of the rock lobster fishery, including:

- puerulus monitoring
- settlement
- tagging and release
- growth rates
- ratios of male/female captured
- seasonal harvesting in winter/summer
- sexual maturity
- translocation or re-settlement
- pot interaction with the sea bed
- spatial impact from marine reserves, cable lanes, fuel lanes, shipping lanes and defence areas.

All this information is available to Te Korowai.

11.4 The pāua fishery

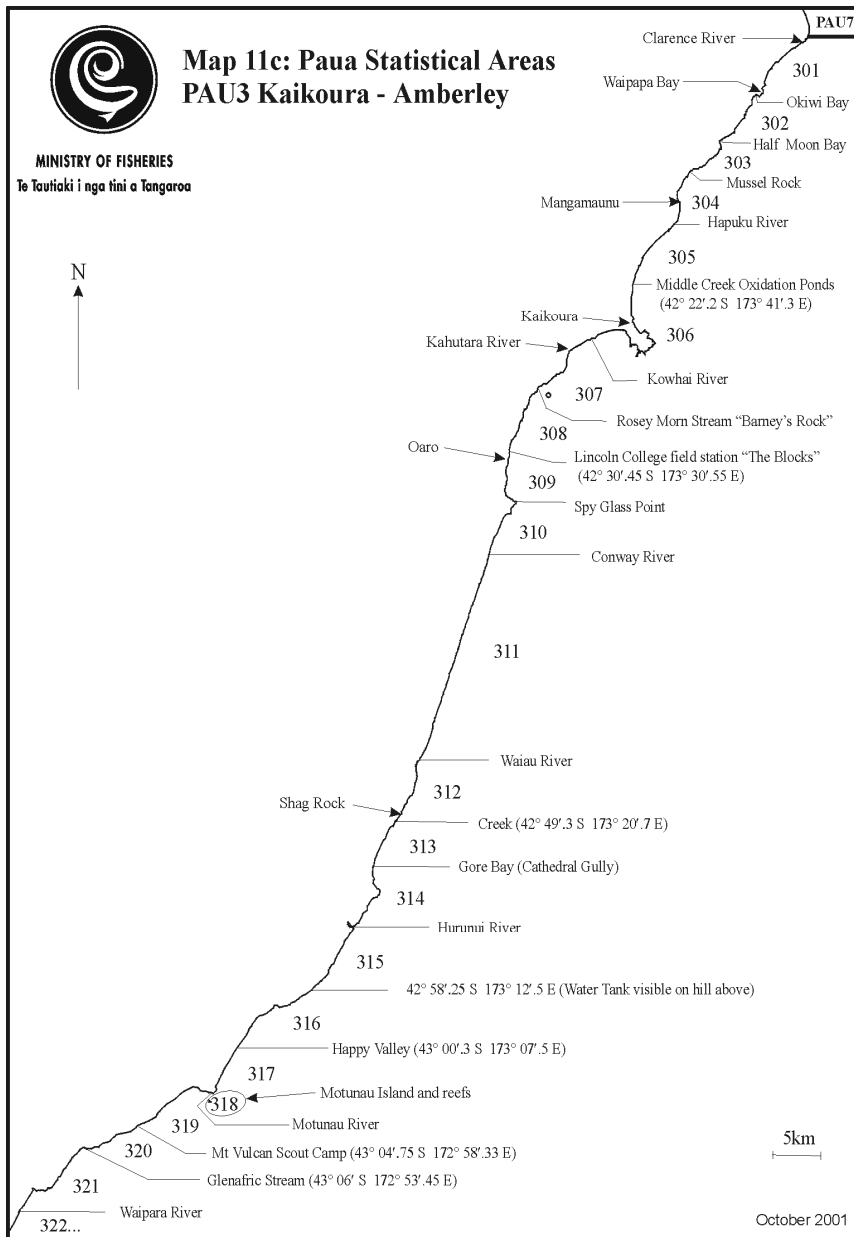
11.4.1 Development of the pāua fishery

From 1940 until the late 1950s, pāua was used extensively as crayfish bait. From the late 1950s, pāua shell became a commercial commodity and significant numbers of pāua were harvested for shells rather than meat. In the late 1960s the Hotu family established a pāua-processing factory at Oaro. They worked the coastline with their own team of divers. At the same time, a few locals acquired fishing permits and began harvesting pāua. From these beginnings the fishery developed, with fishing companies purchasing pāua and local divers making a living. The operation involved a total package – from harvesting to shucking in a factory. This type of operation slowly gained momentum. At that time owning a wet suit was a novelty, but as they became increasingly available, more people joined in. Although catch data was collected by the Ministry of Agriculture and Fisheries, it is difficult to access for this early period.

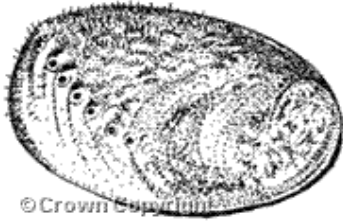
11.4.2 Introduction to the Quota Management System

In 1987 the QMS was introduced, bringing in quota for the pāua fishery. The PAU3 area extends from the Clarence River in the north to the Waitaki River in the south. Detailed harvest information from the Clarence River to Conway River is available from small statistical reporting areas 301–310 (Figure 11).

Figure 11: Management and statistical reporting areas for the Kaikōura coastal marine pāua fishery



Quota for the whole of PAU3 has remained unchanged at 91.6 tonnes, with pāua being harvested primarily from the Kaikōura coast, some from Motunau, and a very small amount from Banks Peninsula. That has changed over the past four years because of concerns about the pāua resource. The population in these areas is growing, and increasing numbers of recreational fishers are harvesting pāua. This species' sedentary nature makes them vulnerable to over-harvesting, and there are no reliable indicators to signal their decline. Of greatest concern is the illegal take, particularly of juvenile fish, as it disrupts breeding continuity – this led to a reseeding trial five years ago. Pāua need to be reseeded in the area they come from. Two years ago, 15-millimetre pāua were reseeded and now measure 68 millimetres. A further reseeding of 13,000 and then 7,000 pāua took place around Haumuri Bluffs (Statistical Areas 309 and 310) in August 2006.



11.4.3 Subdivision of PAU3

Owners of pāua quota have voluntarily subdivided PAU3 into four areas: the Clarence River to Hapuka; Hapuka to the Conway River; Conway River to Amberly Beach; and Amberly Beach to the Waitaki River. Divers have harvested no more than 50 tonnes in the Kaikōura area (Clarence River to the Conway River), compared with 90 tonnes earlier as a response to the illegal take of undersized pāua. The reduction equates to 150,000 spawning pāua each year along the coast, and divers report stocks are looking healthy where they have been observed.

Pāua must be managed in much smaller areas than other commercial fisheries. Catches are recorded at 50 places along the PAU3 coastline. Data loggers give GPS positions virtually all along the coast, which makes reporting into the smaller areas possible. Although the pāua-harvesting sector has serious concerns about the validity of current stock assessment, participants are confident that the methods they are adopting will capture more reliable data.

The pāua fishery does not rely on sophisticated technology. Warmer wetsuits are about all that has changed, and divers still have to hold their breath. Accreditation is being introduced to ensure good diving and harvesting practices. This fishery has no by-catch and is relatively friendly to the environment. There will be many changes over the next few years as knowledge about pāua grows. For instance, all weight-associated management measures have been brought into doubt since Dr Norman Ragg published a paper about pāua's ability to lose 10% of body weight in 12 minutes by expelling blood.

11.4.4 The total harvest

The pāua fishery is subject to harvesting by any member of the community. Commercial and customary take is known, but it is not certain how much is taken by other harvesters.

The value of pāua has increased, but because of the way it is handled and processed, it is not considered to match top world abalone standards. The demand for canned pāua has decreased, while dried and fresh pāua have become more popular. Marketing pāua is ever-changing, and requires technology to match. Processing technology has begun to improve.

It is legal to take large quantities of pāua out of the country, and a lot of dried pāua is being exported. The Ministry of Fisheries is investigating how much black-market pāua is being transported out of New Zealand.

12 Ecotourism

Kaikōura has a premier ecotourism industry, based largely around marine-mammal and bird watching. It is likely to stay that way, given:

- its geographic location on a main tourist route
- the Kaikōura Canyon is a significant food source for marine mammals and birds
- the variety of marine mammals and seabirds found along the coast
- marine-mammal watching is a year-round activity
- the high probability of successful encounters with marine mammals and seabirds.

The industry developed from the late 1980s, with the focus on whales, dolphins, seabirds and seals. Activities are land-, sea- and air-based, with the most clients having travelled from overseas.

The rise in business opportunity has led Kaikōura to achieve the highest employment and growth, highest gross domestic product, and second-highest business unit growth in New Zealand (Ganesh Nana and Jason Leung-Wai, BERL Forecasts 2005).

12.1 Whale watching

The evolution of whale watching in Kaikōura transformed the small town, which had been suffering high rates of unemployment and poverty.

Whale watching on a commercial scale was instigated by the local rūnanga. Its ūpoko, Bill Solomon, was concerned with the health, education and high unemployment of local people, and was the driving force along with other marae supporters in establishing the marae-based whale-watching operation in 1988.

A trust was formed in the mid-1980s, and all trustees offered their homes as collateral to buy the first inflatable boat and keep the business going. They worked long hours to support the whale-watch initiative. In the mid-1990s Kaikōura's railway station, the operational headquarters, was given a considerable facelift, to become the Whaleway Station on Whaleway Road.

From these beginnings an iconic, world-renowned attraction has developed. Whale-watching boats have changed from small, 10–12-seater inflatables to a fleet of modern, custom-built vessels that can carry 48 passengers comfortably. Whale Watch Kaikōura is now the only company (having bought out the other whale-watching permit holder in 1990) permitted to take passengers to view whales off the Kaikōura coast. It operates throughout the year, with up to four vessels on the water at a time, and up to four 3-hour trips per day per boat, depending on demand, time of year, and sea conditions. The area of operation extends from the Clarence River to the Waiau River.

Interest in viewing whales and other marine mammals by aircraft grew following the early successes of the boat-based ventures. Four permits (two for fixed-wing aircraft and two for helicopters) have been issued, currently operated by Kaikōura Helicopters (the two helicopter permits), the Kaikōura Aeroclub and Wings over Whales. Each permit allows only one aircraft to be flying at a time, although there is no limit on the total number of trips in a day.

The marine mammals most commonly encountered are sperm whales, dusky and Hector's dolphins, and New Zealand fur seals. Others include bottlenose and common dolphins, pilot whales, orca, and various baleen whales (e.g. blue, humpback, fin, southern right and minke whales).

As with most marine mammals in the Kaikōura region, whales have seasonal variations in location, due to food availability and social interactions between migrating pods.

There is currently a moratorium on new whale-watch permits at Kaikōura.

12.2 Dolphin swimming and watching

Tours to swim with or watch dusky dolphins in Kaikōura began in the summer of 1989/90. The idea came from two local fishermen, Rik Buurman and Ian Bradshaw (of Dolphin Mary Charters), who recognised a new and exciting activity for the growing number of visitors coming to Kaikōura.

Dolphin Mary Charters were the first to apply for a permit to specifically swim with dolphins in New Zealand. Subsequently, two more permits were issued to other operators. In 2007, all three permits were owned and operated by Dolphin Encounter (formerly Dolphin Mary Charters).

Like the whale-watching industry, the dolphin tours grew from small beginnings. Dolphin Encounter began with a staff of four (including the owners) and now has over 50 employees in summer. Initially tours operated only from October to April, but when it was discovered that dusky dolphins are present all year, the business became year round, from about 1995.

Dolphin Encounter has three vessels ranging from 8–13 metres in size, and makes up to eight trips per day (two vessels each with three trips per day, and one vessel with eight trips per week). They cover the area from the Clarence River to the Waiiau River. Along with dusky dolphins, other animals viewed include orca, pilot whales, Hector's dolphins and New Zealand fur seals.

As with whale-watching permits, a moratorium restricts dolphin permits to their current numbers.

12.3 Seal swimming

Seal swimming in Kaikōura began in 1987, when Graeme Chambers set up Graeme's Seal Swimming Tours. These were initially snorkelling tours targeting pāua, butterfish and crayfish, ending with a barbecue on the beach. Dedicated seal-swimming tours were a natural progression, and once again this activity was a first for New Zealand.

Graeme's Seal Swimming Tours (now Seal Swim Kaikōura) was initially issued a relatively unrestricted permit for seal swimming at Kaikōura Peninsula, but subsequent permits were restricted to a certain number of tours per day with a maximum number of swimmers on each.

Over the years a number of seal-swimming and viewing operators have been set up in Kaikōura, providing another attraction for visitors to Kaikōura.

In 2007 there were 14 permits at Kaikōura dedicated to seal viewing/swimming, either shore or vessel based. For some of these, seal viewing is 'part-time' or incidental to other activities such as kayaking, fishing and bird watching. Three permits allow for shore-based activities; the remaining 11 are principally boat based (including one kayak operator). Five permits provide for seal swimming; the remainder allow for viewing only. The number and duration of trips vary across the permits, with most allowing two to four trips per day and trips of around two hours. Activity is mostly concentrated around Kaikōura Peninsula.

There is currently a moratorium on new seal-swimming permits along the Kaikōura coast. This has been important in controlling the amount of interaction with the seals and managing congestion problems, particularly in the popular Kaikōura Peninsula area. In consultation with the Department of Conservation, the seal-swimming industry has developed a Code of Practice, which is reviewed annually. Although still in its infancy, the code will help manage the effects of tours on seal communities, and provide for the continued improvement of seal-swimming operations.

12.4 Seabird viewing

Kaikōura is a significant bird-watching destination for those with an interest in pelagic (open-ocean) birds. The Kaikōura Canyon is a rich food source for a variety of seabirds, including various species of albatross.

In 1998 Dolphin Encounter introduced a new tour that focused on introducing visitors to the pelagic birds off the Kaikōura coast. Ocean Wings (now Albatross Encounter) was the first boat-based tour dedicated to bird watching for international and national visitors.

Although the growth of this activity has not been on the scale of marine-mammal watching, it nevertheless satisfies a niche market and provides a unique opportunity to closely observe albatross.

12.5 Scuba diving

Kaikōura has historically been a focus for recreational sea-based activities such as snorkelling and scuba diving. Commercial dive operations in Kaikōura began before the marine-mammal tourism industry developed, with a number of Christchurch-based operators providing dive tours to Kaikōura. The Canterbury Underwater Club has a long-established base in Kaikōura.

New Zealand Sea Adventures was one of the first to bring divers from Christchurch, and subsequently set up a commercial scuba-diving base in the West End. This business was sold in 2002 to Dive Kaikōura. Dive Kaikōura employs four to seven people over summer, and its core activities are to train divers and give guided scuba-diving tours.

The main area of operation is Kaikōura Peninsula, with approximately 13 key sites from Race Course Reef in South Bay to Davidson Rocks and Ruby Shoal on the north side. Barney's Rock and the Sisters are used as advanced dive sites, and Bushett's Shoals is visited about four to five times a season.

12.6 Management of marine-mammal watching

12.6.1 Legislative and administrative context

All marine mammals around New Zealand are protected under the Marine Mammals Protection Act 1978 and the Marine Mammals Protection Regulations 1992. The Regulations specifically control and manage marine-mammal watching. Their purpose in particular is to:

- regulate human contact or behaviour with marine mammals ... in order to prevent adverse effects on and interference with marine mammals
- prescribe appropriate behaviour by commercial operators and other persons seeking to come into contact with marine mammals.

However, the Regulations do not generally apply to any commercial fishing vessel while it is engaged in fishing. Nor do they address other issues relating to marine-mammal watching, notably the promotion of tourism, tourism quality control, person and vessel/aircraft safety, and commercial matters. While there are a number of controls that indirectly have a bearing on people's safety (e.g. requirements for guides and controls on swimmer numbers, vessel speeds, and numbers of craft around marine mammals), these are for managing the impact of tourism on marine mammals.

The Marine Mammals Protection Regulations 1992 provide two principal mechanisms for managing the level and type of activity around marine mammals. First, they establish a permit regime for commercial marine-mammal watching. Secondly, they stipulate operating conditions for commercial operators, or anyone else, when in the vicinity of marine mammals.

12.6.2 Permits

Anyone who takes people to view marine mammals on a commercial basis needs to have a permit issued under the Marine Mammals Protection Regulations 1992. The permit system controls commercial effort by restricting the number of operations and the amount and type of activity undertaken by each. The Director-General of the Department of Conservation may also impose (and extend) a moratorium on new commercial permits of a specified type in a specified area.

Under the regulations a commercial operation, individually or cumulatively, should not have any significant adverse effect on the normal behavioural patterns of marine mammals. Conditions of consent can cover a range of matters, including:

- species observed and area of operation
- temporal and spatial closures
- vessel/aircraft type and numbers of vessels/aircraft/swimmers
- operating restrictions over and above those generally required under the regulations (e.g. approach distances or restrictions on swimming operations).

Permits may be suspended, revoked, restricted or amended (e.g. for compliance reasons or if new information comes to hand that supports different conditions being imposed).

12.6.3 Operating conditions

The Regulations list operating conditions for commercial operators, or anyone else, when in the vicinity of marine mammals. Many of these relate to matters such as approach speeds and distances, orientation of approach, and numbers of craft.

Vessels must approach a whale from a direction that is parallel to and slightly to the rear of the whale (Figure 12a). No more than three vessels are allowed within 300 metres of a whale, and vessels are required to travel at a slow, 'no-wake' speed inside this distance, with no sudden or repeated changes in speed or direction. A minimum approach distance of 50 metres has also been set (200 metres for whales with calves), and vessels must keep out of the path of any whale. Swimming with whales is not permitted.

Similar rules apply to dolphins, the main difference being that there is no minimum approach distance for dolphins, and vessels can depart at greater speeds to allow the dolphins to be out-distanced (Figure 12b). Vessels are restricted from cutting through and dispersing pods of dolphins.

Aircraft are not permitted to fly over marine mammals (except when higher than 600 metres (2,000 feet)), but are required to maintain a minimum horizontal approach distance of 150 metres (Figure 12c). A minimum altitude of 150 metres (500 feet) also applies for commercial operators. These aircraft approach distances have been designed to keep aircraft well beyond the distance that sound would theoretically enter the water around a marine mammal.

The Regulations prohibit swimming with juvenile dolphins. However, in practise this restriction has generally proven to be unworkable because 'juvenile dolphin' is not defined, and it can be difficult to know whether or not juveniles are present. Commercial operators at Kaikōura have adopted a voluntary code of conduct to avoid dusky dolphin nursery pods (which are distinguishable by their behaviour in spring and early summer).

12.6.4 Reviews of commercial marine mammal watching at Kaikōura

In response to a heavy demand for new marine-mammal watching permits, the Department of Conservation did three separate reviews of dolphin, whale and seal watching at Kaikōura, in 1999, 2002 and 2003 respectively. As part of each review, independent research and advice was commissioned on the effects of existing tourism on dusky dolphins,²² sperm whales^{23 24 25} and seals.²⁶ Each research programme highlighted a number of issues about the level and type of activity being carried out (e.g. interaction times, behavioural affects and changes to respiration), best described as 'flags of concern' rather than 'warning bells'. A number of recommendations about the future management of commercial marine-mammal watching were made.

As a result of the research findings on dusky dolphins, commercial boat operators agreed to a voluntary two-hour time-off period for dolphin viewing between 11:30 am and 1:30 pm each day over the peak summer period (1 December – 31 March). This time-off period coincides with the main time of rest for the dolphins, and is when they seem more prone to disturbance.

²² Barr and Sooten (1999).

²³ MacGibbon (1991).

²⁴ Gordon et al (1992).

²⁵ Richter et al (2003).

²⁶ Boren et al (2002).

The Director-General of the Department of Conservation concluded that for dusky dolphins and sperm whales no additional commercial watching should be allowed along the Kaikōura coast, and declared a 10-year moratorium on new permits for each of these species. The moratoria on new dolphin and whale-watch permits at Kaikōura are due to expire in November 2009 and May 2012 respectively.

A significant issue that emerged in the review was that as whales became habituated to whale-watching vessels, they may be increasingly likely to be hit ('ship strike'). The available data indicated that most dead sperm whales in the 1987–2002 period were probably non-residents (i.e. transient whales or dead whales drifting to Kaikōura from southern waters) that could not have become habituated. It was concluded that while whale watching might increase vulnerability to ship strike, there was no obvious pattern from the available strandings data to support this hypothesis.

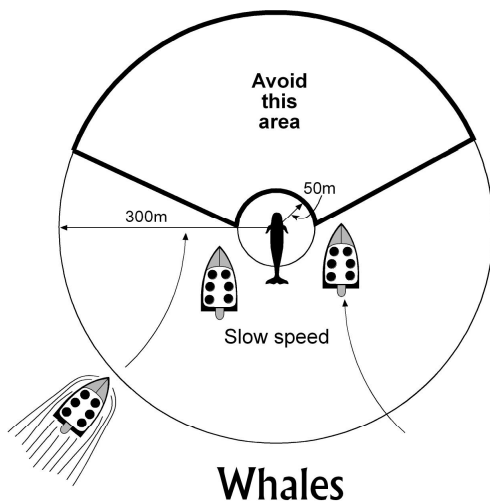
The seal-watching review had four main outcomes:

- a 10-year moratorium on new seal-swimming permits, due to expire in September 2013
- a ban on all commercial seal-watching at Ōhau Point
- changes to minimum approach distances for commercial operators (20 metres for vessels and people on shore)
- seal viewing remaining open for new permit applications.

In addition and as discussed earlier, seal-swimming operators at Kaikōura have implemented their own code of practice governing their activities around seals in the water and on rocks. Adherence to this code is now a condition of their permits.

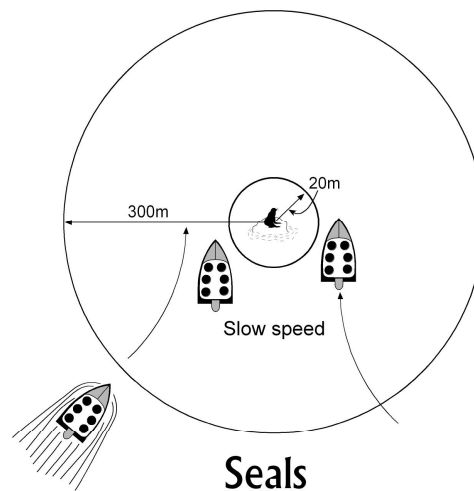
Figure 12: Approach regulations for boats around whales (a), seals (b), dolphins (c), and for aircraft (d)

Figure 12a



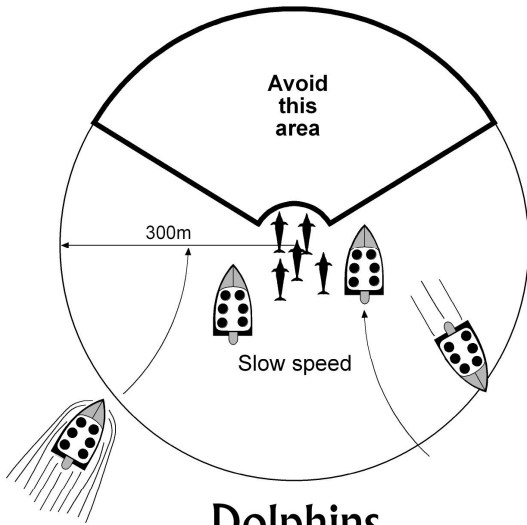
- Approach no closer than 50m.
- Maximum three boats within 300m.
- Swimming with whales is not permitted.

Figure 12b



- Approach no closer than 20m.
- Maximum three boats within 300m.
- Swimming with seals is permitted.

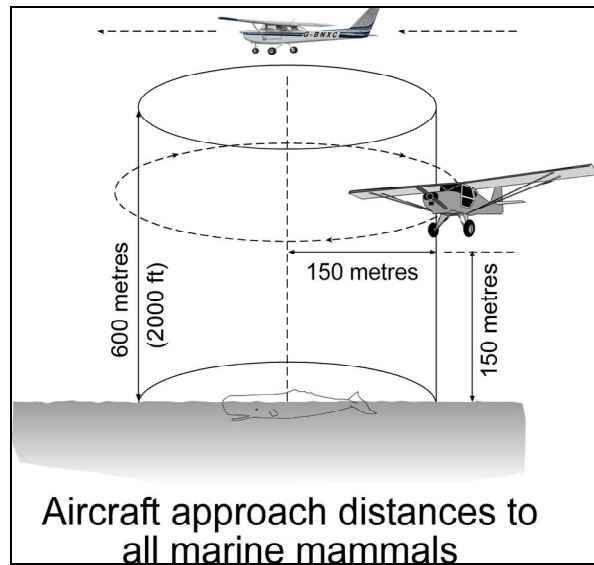
Figure 12d



Dolphins

- Departure speed may be gradually increased to out-distance dolphins.
- Maximum three boats within 300m.
- Swimming with dolphins permitted.

Figure 12c



13 The Coastal Strip: The Interface Between Land and Sea

13.1 Description

The coastal strip forms the interface between the Kaikōura land catchment and the coastal marine area.

The Kaikōura coastal strip is a diverse, complex and attractive coastline featuring rocky reefs and small offshore islets, expansive grey shingle beaches, river mouths, lagoons, abrupt cliffs, and steep bush-covered hills rising sharply from the shoreline.

The coastal strip is of significant value – in Kaikōura it is highly accessible and widely used compared with some of New Zealand's other coastal strips. It is vulnerable to being damaged by activities in the area, and by events such as natural hazards or inland pollution, even if these occur some distance away. Much of the coastal strip has been identified in the Proposed Kaikōura District Plan as having outstanding landscape value. It is required under the Resource Management Act that this landscape classification is recognised and provided for as a matter of national importance. The protection of the natural character of the coastline is also provided for under the Act.

The coastal strip in the Te Korowai management area extends from the Clarence River to the Conway River, and from Mean High-Water Springs (MHWS) to points inland that vary according to topography or the influence of the coast. For the purposes of this report, the inland boundary is undefined and may be the road, the start of steeply rising country, or a point where there is some disassociation with the coastline visually or ecologically. The inland boundary is relatively easy to define on steep, rocky sections of the coastline, as the skyline provides a natural cue. It is less easy to define in areas of flatter topography, but for the purposes of this report probably would not exceed 500 metres from MHWS in most instances.

Offshore areas in the immediate vicinity of the land, such as a wildlife refuge on the coastal platform (Point Kean) and a nature reserve (Riley's Lookout), contribute to the aggregate value of people's experience of the coastal strip.

There are important sites along the strip that connect people to their history, both recent and ancient. In some cases these have archaeological value, containing material that helps explain how the area was used by people in the past, even when detailed information has been lost from oral and written records. Such places of value may be more apparent to the general public at specific locations, for example, at the Nga Niho pā site, where signs interpret its value to Ngāti Kuri and Ngāi Tahu. However, these values apply to virtually the entire coastal strip. They are therefore not identified or discussed in this section of the report, but this does not mean their importance is not recognised.

Historically, human influence has modified the coastal strip for centuries, with impact accelerating in recent times. Human activities have included burning, pollution, modification of the land for farming, building roads, rail and other structures, and weed invasion, littering and pollution with human waste. There are records of vegetation-burning over several hundred years, to the present day. The coastal strip has been a convenient dumping ground, and today household rubbish is sometimes dumped and litter is thrown from road traffic.

Sand dunes and lagoons have been significantly modified or removed, resulting in loss of habitat for some species. Continuing threats, if not adequately controlled, will affect the ecological, natural and scenic values and future uses of the coastal strip. Threats may include inadequately managed tourism, freedom camping, uncontrolled 4WD activities, uncontrolled rubbish dumping and littering from vehicles, weed invasion, fires, and urban development affects how the landscape looks.

13.2 Natural values of the coastal strip and implications of easy access

13.2.1 Natural values

The coastal strip provides habitat for plants, marine mammals and birds. Coastal vegetation is variable depending on whether the land is steep and rocky, a sweeping beach, or has been changed or built on by people. Increasing numbers of seals use the rocky reefs as haul-out locations. Some seabirds and shorebirds use the strip, as do a range of other animals, including invertebrates. Less common species such as katipō spiders can be found in dunes along parts of the coastline. This landscape is a spectacular part of New Zealand, especially where the bold, high ranges of the seaward Kaikōura ranges form a dramatic backdrop to the coastal scenery – truly where mountains meet the sea.

13.2.2 Access

A range of activities along the strip and in the sea are made possible by roads, rail, tracks (vehicle and walking), beaches, boat ramps, wharves, and a marina (Table 7). The coastal strip facilitates commercial and recreational boat-launching, and gives vehicle access to beaches. Most of the district's recreational and tourist activity happens there. State Highway 1 and the main trunk railway line follow the coast for a considerable distance, providing an outstanding scenic experience for travellers. The highway makes the coastline easily accessible for most of its length between the Conway and Clarence rivers. As a result, walking, picnicking, camping, marine-mammal and bird watching, diving and fishing are all popular.

13.2.3 Implications of accessibility

Because the coastal strip is accessible, popular with visitors, and a prime location for development, activity there is increasing. Some of these activities directly or indirectly harm the marine environment. Tourism, camping where there are no toilet or rubbish facilities, inappropriate vehicle use on the beach, road works, human waste, rubbish dumping, weed invasion and fires have a short-term, long-term or cumulative impact.

In the past, the coastal strip has not always been valued. For example, rubbish dumps were sometimes created on the shore or on river beds, resulting in leachates entering the ocean. Industrial activities caused pollutants to enter the sea. Utilities such as power and phone lines have an impact on the coast's aesthetic value.

Even today, the area along the coast is subject to extensive littering and dumping, despite rubbish facilities at many locations.

The following summary of coastal infrastructure in 2007 was collated by the Kaikōura District Council (Table 7). There are 21 slipways (private and commercial) along the Kaikōura coast. Official records of current infrastructure may be available from harbour masters or from Marlborough Harbour Board archives, although some records may be difficult to find.

Table 7: Infrastructure along Kaikōura coast, June 2007

Location	Owner/managing authority	Description
South Kaikōura		
Oaro	J Solomon	Slipway
Boat harbour	Rewi Pacey	Slipway opposite Oceanview restaurant
Boat harbour	G McDougal	Slipway opposite Oceanview motels
Boat Harbour Camping Grounds	Boat Harbour Boating Club, President (Trevor Smith)	
Kie Kie	Brian Muir, Oaro	Slipway with boat shed
Kie Kie	Concrete slab	Grant Debenham
Rosy Morn		Opposite Barney's Rock, no structure
South Bay		
South Bay marina	Coastguard Kaikōura	Boat shed slipway
South Bay marina		Small slipway near coastguard building
Moa Point	Commercial/public slipway	
South Bay marina	Kaikōura District Council	
Moa Point	Paul Turner/Hanga and Kaikōura Boating Club, private	
Moa Rd stormwater outlets	Kaikōura District Council	
South Bay sewerage pumping station	Kaikōura District Council	
North Kaikōura		
Jimmy Armer's Beach		Unofficial slipway from beach
Old wharf	Kaikōura District Council	Fisherman's Slipways and winch shed
Old wharf	Kaikōura District Council	Concrete slipway beside wharf
New wharf	Kaikōura District Council	Opposite Pacifica fisheries
Between fisheries and Pier Hotel	Kaikōura Boating Club	
Jimmy Armer's toilet	Kaikōura District Council	
Esplanade sewerage pumping station	Kaikōura District Council	
Esplanade, swimming pool	Kaikōura District Council	
Gooche's Beach toilet	Kaikōura District Council	
Esplanade stormwater infrastructure	Kaikōura District Council	
North Coast		
Oxidation ponds, infiltration beds	Kaikōura District Council	Old Beach Road
Paparoa Point	Ray Middleton, Rakautara (Kay's Crays)	
Waipapa Bay	Opposite camping ground	
Waipapa Bay	Johnny Reader (JR)	Dozers move boats across shingle

13.3 Management and tenure of the coastal strip

The coastal strip comprises Crown-owned, leasehold and freehold land. It is administered by a number of agencies, including the Kaikōura District Council, Ngāi Tahu, Environment Canterbury, Land Information NZ, the Department of Conservation, Transit NZ, and OnTrack (railway). Land administration between the agencies is often complex, sometimes resulting in a lack of clarity regarding management responsibility for some areas.

Roading, railway, inputs to and removals from fresh water, camping and structures are all managed independently. Issues around land tenure can be complicated, and often areas perceived as ‘no-man’s land’ are left unmanaged. Under the Local Government Amendment Act 1992, responsibility for managing Kaikōura Harbour was given to the Canterbury Regional Council (Environment Canterbury). Land and assets formally controlled by the Marlborough Harbour Board were vested in the Kaikōura District Council.

For the purposes of this document, the coastal strip has been divided into six sections:

1. Conway River to Oaro
2. Oaro to Peketa
3. Peketa to South Bay
4. Kaikōura Peninsula (South Bay to Lyell Creek)
5. Lyell Creek to Mangamaunu
6. Mangamaunu to the Clarence River

13.3.1 Conway River to Oaro

This section of the coast comprises modified lowland farms, high-energy gravel beaches, impressive bluffs and headlands, a rocky coastline and offshore islets. The Conway lagoon is a significant wetland, providing habitat for birds such as black-fronted terns, dotterels, and black-backed gulls. The coastal strip is accessible between the Conway River and Haumuri Bluffs by 4WD vehicles, which can use the road to Claverley or drive through private farmland. The railway line goes right through this part of the coastal strip. Proposed subdivision on the flats near Claverley will increase use and development in this area.

The Haumuri Bluffs are a regionally significant landscape feature, with spectacular cliffs and a natural rock arch. They are accessible to most people only by walking from Oaro, or by boat (freehold farmland extends in places right to the coastline). The bluffs are an important habitat and haul-out area for New Zealand fur seals, and small numbers of yellow-eyed penguins roost in one area.

From Haumuri Bluffs to Oaro, the coastal strip is narrow and backed by steep, modified cliffs. There are zones of sulphurous mudstone, and a significant marine fossil area, which has belemnites, extinct marine mammals and sharks’ teeth. Farmland comprises grass and crops. Seals are regularly seen, and increasing numbers of people walk or drive 4WDs along this section of the coastline. There is a settlement at Oaro, and its residents make significant use of the coast. A small wetland area at Oaro is being considered for restoration by the local community. Most of the land between the Conway River and Oaro is freehold farmland, and the Oaro settlement is leasehold land administered by Māori trustees. There is an area of conservation land beside the Conway River.

13.3.2 Oaro to Peketa

This section is predominantly rocky coastline, and is one of the most scenic parts of the Kaikōura coast. It comprises a narrow corridor shaped by steep vegetated hills or coastal cliffs, and the rocky shoreline. The corridor is traversed by State Highway 1 and the railway line. Considerable sections of the coastal strip on the inland side of the road are scenic reserve managed by the Department of Conservation. There are settlements at Goose Bay and Boat Harbour (Ocean View), where there is a shop/restaurant.

Motor camps are situated at Boat Harbour, Goose Bay, Paia Point and Ōmihi. These are on recreation reserves administered by Te Rūnanga o Ngāi Tahu and are extremely popular, especially in summer. There are some issues regarding septic tank discharges from some of the camping grounds close to the coastline.

A Department of Conservation track through scenic reserve leads to a visitor lookout above Otumatu Rocks, and several other tracks or roadside stopping areas provide access to the shore. There is a wildlife refuge at Otumatu Rocks with a small but significant gull and tern colony.

Recreational use, passing traffic and uncontrolled independent camping results in considerable litter along the roadside. Rubbish is dumped at stopping points and occasionally over cliff edges to the shore. Some of this rubbish finds its way into the ocean – a significant problem which affects the environment, amenity value and visual quality of the coastal strip.

Considering the close proximity of the road and railway line to the coast in places, pollution from roading runoff is a potential threat to the marine zone. The dumping of roading materials has been an issue in the past. The road is confined and narrow, leading to a risk of car crashes. Accidents involving freight vehicles carrying chemicals and dangerous goods are a significant threat to the coastal marine area, while fuel spills from any vehicle accident also a concern. In one instance in 2000, a truck overturned and spilled rat poison into the sea.

Seals wander onto the road at times, particularly where the road is close to the coastline between Otumatu Rocks and Parititahi Tunnel.

The Kahutara River mouth is a very popular area for recreational activities including whitebaiting and surfing.

13.3.3 Peketa to South Bay

This section of the coastal strip has high-energy gravel beaches adjoining relatively flat land that is a mix of recreation reserve (vested and administered by Ngāi Tahu) and farmland.

A pine plantation occupies predominantly council-administered recreation reserve north of the Kōwhai River. The plantation, an investment for the community, has a timed, 20-year harvest plan. The coastal management strategy will ensure biodiversity is protected and enhance recreational and visual amenities. In doing so it will need to address the issue of weed control.

Peketa has an extremely busy motor camp and a designated airstrip.

An area of recreation reserve administered by Te Rūnanga o Ngāi Tahu between the airstrip and Stoney Creek is the site of a former Rabbit Board storage facility. Poisons including 1080 containers and arsenic have been reported by Les Battersby, previously of the Agricultural Pest Destruction Board, to have been buried in the area.

Land at Stoney Creek is set aside for the dumping and storing of clean road-fill by Transit NZ. Household and road material were illegally dumped there until a locked gate was installed.

Recreation reserve and Land Information NZ-administered land at Kōwhai River is a popular day site and overnight camping area. It has recycling and refuse-collection facilities which are frequently abused by illegal dumping of household waste. Gravel is extracted from the Kōwhai River mouth to South Bay, and all removals are permitted and monitored by Environment Canterbury.

There is a designated nohoanga near the go-kart track on the true right bank of the Kōwhai River. Tracks between the river and South Bay Road turn-off are popular with walkers, horse trekkers, 4WD and four-wheeler/trail-bike drivers. A roadside stopping point at the racecourse corner is used during the day, and at night by people camping in vehicles, although it is not permitted. Near South Bay at Racecourse Corner is a former rubbish dump.

13.3.4 Kaikōura Peninsula (Racecourse corner South Bay to Lyell Creek)

The land tenure in this section of the coastal strip includes conservation land, recreation reserve administered by Kaikōura District Council, land administered by Te Rūnanga o Ngāi Tahu, and privately owned residential, commercial, and rural land.

Kaikōura Peninsula has important seal and bird colonies, and is popular for recreational activities. The Department of Conservation estimates that at least 110,000 visitors use the car park each year, as at 30 June 2004.

The peninsula has been identified as having outstanding landscape value. It has the largest red-billed gull colony in the South Island, and a third Hutton's shearwater colony is being established on land owned by Whale Watch.

This section of the coast combines built-up residential areas, farmland, and the peninsula's spectacular cliffs and coastal platforms. The gravel beach from the racecourse to near the coastguard building is recreation reserve administered by the Kaikōura District Council. Local residents have expressed concern about use of the reserve by four-wheelers and trail-bikes, and associated noise and safety issues. The council is seeking involvement from NZ Police, Environment Canterbury and the Department of Conservation to develop a management strategy for this area.

Commercial, tourist and recreational fishing boats are parked at the Kaikōura District Council boat park (recreation reserve), between the coastguard building and the marina. As with any working marina, there is the potential for pollution from diesel or oil spills. A sea wall is proposed to protect this area from erosion by the sea.

Tracks are being upgraded to improve access, and signs help visitors interpret the natural, cultural and historical values of the peninsula. There are new toilets at South Bay, and more are planned for Point Kean. A new walkway bridge provides improved access, including wheelchair access. Disturbance to wildlife can be an issue in this section of the coast.

Point Kean is one of the most-visited sites in New Zealand, popular for seal and bird watching, and its striking scenery. Part of the area is recreation reserve managed by the Kaikōura District Council and the remainder is scenic reserve administered by the Department of Conservation.

The effects of high visitor numbers at Point Kean require ongoing management. Signs point out that overnight camping is not permitted, recycling and litter bins are provided, and toilet facilities are located nearby at Jimmy Armer's Beach; nevertheless, damage continues.

From Point Kean to Lyell Creek, the coast is alongside farm and urban settlements. The Kaikōura District Council is developing a defined walking route from the town centre to Point Kean.

The slipway and old wharf are still operational. The slipway grid is used by commercial fishing boats and poses a potential risk to the environment – boat cleaning and painting could result in solvents and paint chips finding their way into the sea. Interpretation boards have been placed to outline Kaikōura's shipping and whaling history.

The old wharf site near Fyffe House needs restoring and upgrading to ensure its continued commercial, recreational and visitor use. This site is part of the Fyffe House Historic Precinct. The concrete walls are considered to have historic significance, but are in need of repair. The Department of Conservation and the Kaikōura District Council are working to jointly manage this site.

The new wharf at Whakatū Quay is to be replaced with a concrete wharf, for use by commercial fishers and cruise-ship passengers disembarking from tender boats. There is some commercial interest in leasing the former fish-processing factory for tourist activities. The old and new wharves continue to be popular for recreational fishing. The Kaikōura Boating Club plans to upgrade the launch ramp at Whakatū Quay in 2007/08.

The Kaikōura Marine Laboratory (University of Canterbury) on Avoca Street carries out important research relating to the Kaikōura marine coastal area.

There are toilets and a children's playground at Gooche's Beach along the Esplanade, and the Kaikōura District Council maintains public recycling and rubbish bins there. This area is popular for walking, cycling, and as a resting spot. There is a skateboard facility on the Esplanade, and the Garden of Memories reserve is on the Esplanade near Lyell Creek.

Camping in vehicles between Point Kean and the West End contributes to litter and human-waste problems at times.

Land tenure through this section varies, with a mix of conservation land, recreation reserve administered by the council, land administered by Te Rūnanga o Kaikōura, and private residential, commercial and rural land.

13.3.5 Lyell Creek to Mangamaunu

The coast from Lyell Creek to Mangamaunu is predominantly high-energy gravel beach with remnant dunes in places. The coastal strip comprises modified dunes, sections of broom-infested rural land, sections of railway land, legal roads and conservation land. It also contains the Hāpuku River mouth and the small settlement of Hāpuku.

On the coastal strip just north of Kaikōura is the town's sewage treatment plant, comprising an oxidation pond and sand infiltration beds. An outfall pipe for disposing of waste water from the Kaikōura dairy factory is no longer used, as consent has recently been given to a new method of discharging waste onto farmland. Contaminants associated with the sawdust pit near the beach at Harnett's Creek may pose some environmental risk, and at times there is dumping at this site.

Gravel extraction, permitted by Environment Canterbury, occurs in the Hāpuku River upstream from the coastal strip. There are litter and human waste issues along the coast at Mangamaunu, a popular surfing location increasingly used by independent campers. The Kaikōura District Council is in the process of building a public toilet in the area. Recycling and rubbish bins are maintained by the Kaikōura District Council, but are often used for the illegal dumping of household waste.

13.3.6 Mangamaunu to the Clarence River

Mangamaunu to the Clarence River is predominantly rocky coastline, except for a section of boulder beach and gravels between Mangamaunu and Blue Duck Valley Road, and a stretch of gravel beach from Waipapa Bay to the Clarence River. On the inland side of the road (mostly scenic reserve or conservation land) are steep bush-clad hills. There are sections of freehold land in places, some of which are subdivisions, lifestyle blocks and farmland. There is a small area of Māori land at Ōhau Stream.

Much of the narrow coastal strip as far as Waipapa Bay is road or railway reserve, and has similar issues regarding roading as the coast between Oaro and Peketa. There is reserve administered by Te Rūnanga o Ngāi Tahu between Moririmu Stream and Waipapa Bay. Rakautara is a small settlement where crayfish is sold from roadside caravans.

Between Mangamaunu and Waipapa Bay littering and human faecal contamination at roadside stopping points is an issue often associated with independent overnight campers. Management solutions are being investigated locally between landowners such as Transit NZ, the Kaikōura District Council, OnTrack and DOC.

A seal-breeding area is a feature at Ōhau Point, and a popular visitor attraction. Increasing numbers of seals are coming onto the road, at times creating a hazard for motorists.

There is formal camping at the Waipapa Bay campground. Some commercial fishing takes place from the beach at Waipapa Bay and from licensed launching ramps near Papatōia Point.

Dune systems between Waipapa Point and the Clarence River have been heavily modified by grazing, burning, and pine plantations. Katipō spiders have been identified in the foredunes. The Clarence River is a focal point of the area. The coast near the river has been altered by grazing, burning, invasive weeds and vehicle tracks. Approved gravel extraction occurs from the river bed further inland.



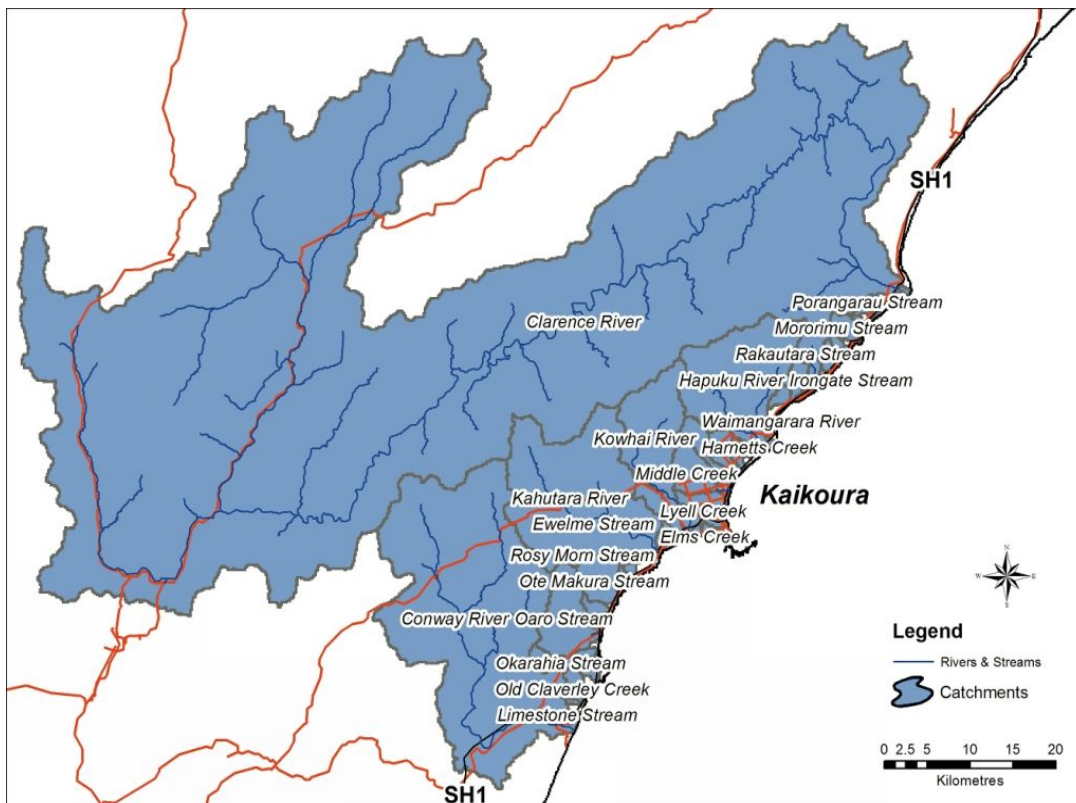
14 Interactions Between the Wider Catchment and the Coastal Marine Environment

14.1 The Kaikōura coastal marine catchment

The Kaikōura catchment covers 4,507 square kilometres and is inextricably tied to the entire coastal marine area – a holistic concept expressed by Māori as ‘ki uta ki tai’ (from the mountains to the sea). To appreciate potential land-based influences on the coast, information is needed about the catchments that make up the Kaikōura hinterland, and the rivers and streams that flow from them to the coast (Figure 13).

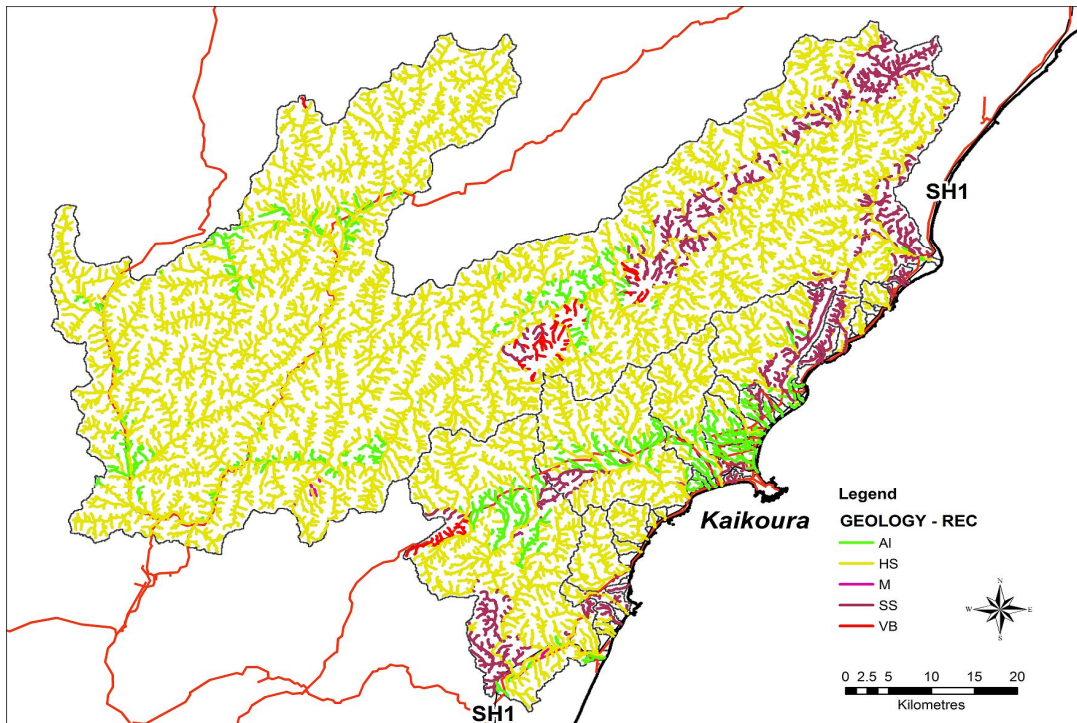
The Clarence River flows from an extensive inland catchment that represents 73% of the Kaikōura coastal marine catchment area. Together, the Clarence, Conway, Kahutara, Hāpuku and Kōwhai rivers make up almost 95% of the catchment area. The remaining streams and creeks come from smaller coastal catchments. The size of a catchment does not necessarily correspond to the impact it will have on the coast. Geology and land cover contribute significantly to what is delivered from the land into the sea.

Figure 13: River and stream catchments of the Kaikōura coastal marine area



14.2 Geology of the Kaikōura catchment

Figure 14: Geology of the Kaikōura coastal marine area catchment



Legend: AI = alluvium; HS = hard sedimentary (greywacke, schist); SS = soft sedimentary (mudstone, limestone); VB = volcanic base.

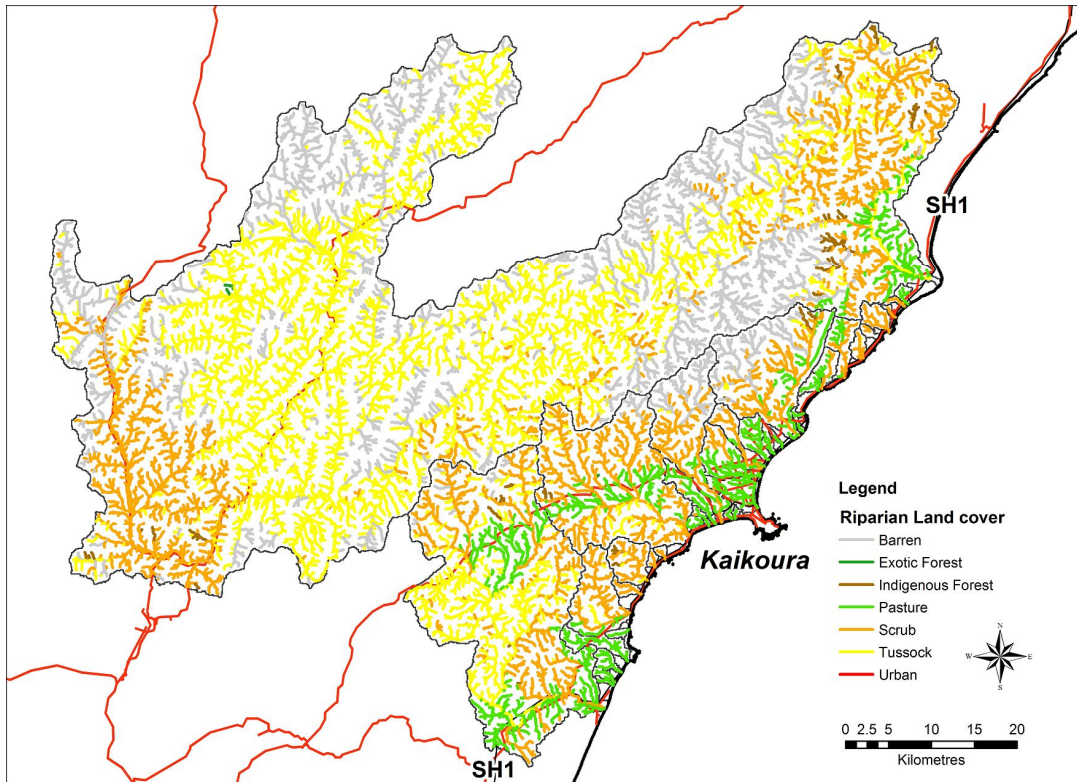
Note: the source for Figures 13, 14, and 15 comes from the Rivers Environment Classification (REC) provided by Chris Arbutckle. Hard sedimentary rock dominates the geology of the area, particularly the Clarence River catchment. The infiltration of rain into this rock is variable. Where the rock is fractured, infiltration is high, resulting in a sustained base flow and infrequent floods. Features of this type of geology are low natural nutrient levels, small amounts of suspended sediment, and relatively coarse substrates.

Soft sedimentary rock is found in the lower half of the Clarence River valley and the northern- and southernmost coastal streams. In contrast to hard sedimentary rock, mudstone and limestone have a low infiltration rate, resulting in a low base flow and more frequent floods. High levels of natural phosphorus, high concentrations of suspended sediment, and fine substrates are features of this geology type.

The other major geology type, alluvium, is found on the valley floor of the headwaters and middle reaches of the Clarence River, and in the middle reaches of the southern coastal streams. High infiltration rates tend to reduce flood frequency. Surface water and groundwater interact to possibly affect base flows downstream.

14.3 Land cover of the Kaikōura catchment

Figure 15: Land cover of the Kaikōura coastal and marine catchment area, based on river and stream margins



When assessing the material that may be washed from rivers and streams into the sea, it is important to consider the type of land cover along the margins of these waterways. The banks and sometimes extensive areas back from them are crossing points between the wider catchment and the waterway. They contribute to what is delivered into the water and carried downstream. Managing these margins helps reduce material from the land reaching the coast.

Land cover in the Kaikōura coastal marine catchment is dominated by tussock, scrub, bare ground and pasture (Figure 15). Indigenous and exotic forest are relatively minor land cover.

Land cover along the Clarence River is 49% tussock, 27% bare ground and 21% scrub, reflecting the alpine nature of much of the catchment. The location, geology and land cover of the Clarence catchment indicate that little else but sediment is likely to be delivered to the coast. Catchments similar to the Clarence are associated with the Hāpuku and Kowhai rivers, where bare ground and scrub dominate.

In contrast, the land cover of many of the smaller stream catchments is predominantly or entirely pasture. Pasture catchments characteristically have higher flood peaks which recede faster. Flows are relatively low flows, and nutrient concentrations are higher. Erosion rates tend to be high, resulting in low-water clarity and finer (silt and mud) substrates compared with catchments that have natural land cover. Some of these features may be exhibited by coastal streams and creeks such as Porangarau Stream, Harnett's Creek, Ōkarahia Stream, Old Claverley Stream, Limestone Stream, Elms Creek and Lyell Creek.

These smaller, farmed catchments are likely to contribute more nutrients and sediment to the coast than catchments with tussock and scrub land cover. Lyell Creek has been studied and remedial work carried out. This was a collaborative effort on the part of Environment Canterbury (co-ordinated by Rob Gerard), Te Rūnanga o Kaikōura, and concerned members of the community. What follows is an account of the experience.

14.4 Impact of intensive agriculture on Lyell Creek

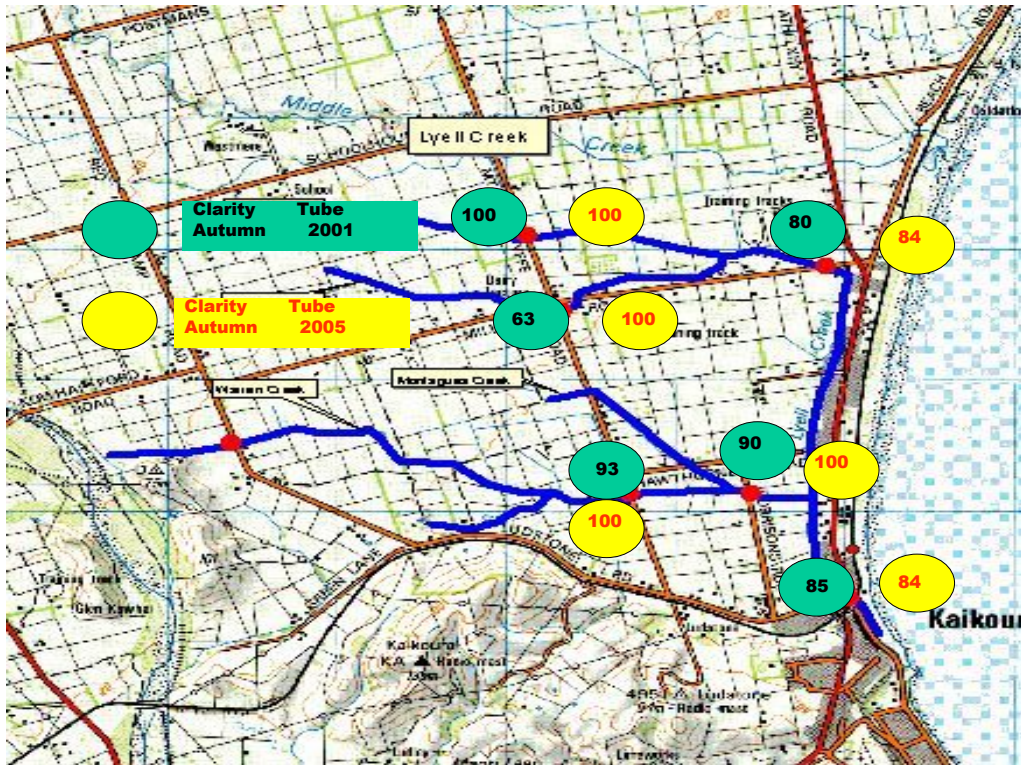
Lyell Creek came to Environment Canterbury's attention after complaints that the stream, where it flowed through Kaikōura township, was permanently discoloured and unattractive. When sea conditions blocked the creek mouth, the water backed up; when the mouth re-opened, the water level dropped suddenly and resulted in deposits of black sediment on the banks that were unsightly and foul-smelling. Lyell Creek was not enhancing Kaikōura's image as a tourist town, and remedial action was needed.

Figure 16: Sampling sites along Lyell Creek and tributaries



Water sampling showed high levels of bacteria and poor water clarity. It was demonstrated that these were caused by dairy stock in the water and on the banks. When dairy farmers voluntarily built fences and installed bridges and culverts, water quality improved, although not as much as had been anticipated. The continued contamination was shown to come mainly from small farms and lifestyle blocks – where those involved have not responded as well as the dairy farmers.

Figure 17: Water clarity in Lyell Creek before and after riparian management



Note: The lower the reading the worse the clarity; a reading of 100 is clear.

In summary, the study demonstrated that:

- intensive agriculture caused water contamination
- fencing substantially improves water quality and stream habitat
- small farm activities significantly affect water quality.

The most noticeable result of the study is that water in the lower reaches of Lyell Creek has excellent clarity most of the time, and the reduction of fine sediment means there are no putrid black deposits on the stream banks when the creek mouth is opened. Lyell Creek is now a worthy centrepiece for a tourist town. Another consequence, which was not measured, is that there will be less contamination of the coastal marine environment near the Lyell Creek mouth.

However, there remains considerable potential for further improvement.

Glossary

Ascidians are primitive animals with backbones that look like invertebrates and include sea squirts, common under rocks at low tide.

Amphipods are crustaceans that include the common sandhopper.

Biodiversity is the natural diversity of all life, including diversity in genes, species, populations and ecosystems.

Biological communities are groups of organisms found together in a common environment.

Biophysical refers to the physical and biological aspects of the natural environment.

Biota is all living organisms at a particular locality.

Bylaws are legally binding rules made under the provisions of an Act of Parliament.

Bryozoans are tiny colonial animals that generally build stony skeletons of calcium carbonate, superficially similar to coral. They are also known as moss animals (which is the literal Greek translation) or sea mats.

Calcareous rocks are those such as limestone that have a high calcium-carbonate content.

Cartilaginous fish are those such as sharks and rays that lack a bony skeleton.

Coastal marine environment is defined in the Resource Management Act 1991 as the foreshore, sea bed, and coastal water, and the air above the water:

- (a) of which the seaward boundary is the outer limits of the territorial sea
- (b) of which the landward boundary is the line of mean high-water springs, except that where that line crosses a river, the landward boundary at that point shall be whichever is the lesser of –
 - (i) one kilometre upstream from the mouth of the river; or
 - (ii) the point upstream that is calculated by multiplying the width of the river mouth by 5.

Conservation is defined in the Conservation Act 1987 (in respect of conservation areas) as the preservation and protection of natural and historic resources for the purpose of maintaining their intrinsic values, providing for their appreciation and recreational enjoyment by the public, and safeguarding the options of future generations.

Crustose or encrusting algae grow as thin sheets, usually on a rock substrate.

Crustaceans are primarily aquatic arthropod invertebrates, and include shrimps, crabs, crayfish and the planktonic copepods.

Diatoms are free-living plant plankton which have a crystalline shell of silica.

DOC is the Department of Conservation, the government agency charged with protecting and preserving native species, managing wild animals, caring for public conservation lands, and administering the Crown's interest in the sea bed and foreshore.

ECan is Environment Canterbury, the regional council with regulatory responsibilities for the coastal and marine area, and environmental responsibilities for the region as a whole.

Echinoderms are the 'spiny skins, a group of invertebrates that includes sea urchins, star fish, brittle stars, and sea cucumbers.

Ecological health is a characteristic of an ecosystem that is stable and sustainable, and can maintain its organisation and autonomy over time and its resilience to stress. Ecosystem health can be assessed by measuring resilience, vigour and organisation.

Ecological sustainability occurs when human use and activity provides for the functioning, form and future of ecological systems.

Ecosystem is a dynamic complex of plant, animal, and micro-organism communities interacting with their non-living environment as a functional unit.

EEZ is the Exclusive Economic Zone of New Zealand, defined as the area of sea within 200 nautical miles of the baseline of the territorial sea of New Zealand (see also Territorial Sea).

Endemic organisms are native plants and animals found nowhere else.

Estuarine coastal waters are where fresh and salt waters mix in partially enclosed areas of the sea.

Exotic species are those which have evolved elsewhere and have been brought by people to New Zealand.

GPS refers to the satellite-based geographic positioning system.

Habitat is the environment in which a species or community of organisms lives.

Hapū are sub-tribal groups made up of related or extended families.

Hīkoi is an expedition or journey made for a purpose.

Hui are formal meetings held in a Māori cultural context.

Hydroids are tiny feathery invertebrates related to sea anemones.

Hydrology is the study of the movement, distribution and quality of water.

Indigenous species are the native plants and animals of a place.

Intertidal refers to the intertidal zone (also known as the littoral zone) in marine aquatic environments – the area of the foreshore and sea bed that is exposed at low tide and submerged at high tide (i.e. the area between tide marks).

Invertebrate fauna refers to animals without backbones.

Isopods are invertebrates that include sea lice and sand slaters. They are dorso-ventrally flattened crustaceans.

Iwi means tribe.

Kai manu refers to birds traditionally taken for eating.

Kaimoana is seafood.

Kaitiāngata is the practice of eating those defeated in battle.

Kaitiaki are guardians of the mauri (life force) of treasured resources and places.

Kaitiakitanga is an inherited responsibility of tāngata whenua to look after the mauri (life force) of nga taonga tuku iho (treasured resources). It includes protecting biodiversity and maintaining resources for present and future generations.

Kaikōura District Council is the territorial local authority.

Kete is a basket.

Kina are also known as sea urchins or sea eggs, and are technically echinoderms (spiny skins).

Koha means a gift.

Littoral refers to the coast of an ocean or sea, or to the banks of a river, lake or estuary.

Macro-algae are the large seaweeds.

Mahinga kai or **mahinga mātaimai** are customary food-gathering places.

Marae are the traditional meeting places for iwi and hapu.

Mātaimai reserve is a place of importance for customary food gathering and is managed by tāngata whenua (South Island Customary Fishing Regulations 1998).

Mauri is the life force of places and natural things.

Mean High Water Springs (MHWS) is the average limit of high spring tides up the shore.

Mesopelagic, also known as the middle pelagic or twilight zone, is the zone from 200–1,000 metres below sea level.

MfE is the Ministry for the Environment, the government agency with policy responsibility for all aspects of the environment.

MFish is the Ministry of Fisheries, the government agency responsible for all aspects of fisheries management.

Moana is the sea or the marine ecosystem.

Mokopuna are grandchildren or descendants.

Molluscs are shellfish, although the shell may no longer be obvious – as in squid or sea slugs.

Motile refers to plants and animals that can move around, as opposed to those which are sessile or fixed in one place.

Nature reserve is a category of reserved land under the Reserves Act 1977 that gives a high status of protection and may limit public access.

Nautical mile: 1 nautical mile = 1,852 metres.

Nohoanga are traditional places of settlement near lakes and rivers. Ngāi Tahu tribal members have temporary but exclusive rights to occupy an area as a result of the settlement of the Ngāi Tahu claim.

Nursery pods are groups of whales or dolphins that include mothers with newborn calves.

Pā were fortified settlements.

Pelagic is the part of the open sea or ocean that is not near the coast or sea floor.

Peracarid is a large group of crustaceans that includes amphipods, isopods and mysid shrimps.

Protection in relation to a resource means its maintenance, so far as is practical, in its current state, and includes its restoration to some former state and its augmentation, enhancement, or expansion.

Quota Management Area (QMA) refers to an area defined for the management of fish stocks in the Quota Management System.

Quota Management System (QMS) is overseen by New Zealand Fisheries, and is the allocation of rights to sustainably harvest fish stocks.

Rāhui are temporary limits on activities such as fishing in particular areas.

Rangatira means chief.

Rangatiratanga means chiefly authority.

Rūnanga is an organisational group of iwi.

Salinity is the degree of saltiness of sea water.

Sea wrack, also known as flapjack, is a large brown algae.

Sessile plants and animals are attached to the substrate.

Southland current is a northward flow of water along the south and east coast of New Zealand.

Species are groups of genetically closely related organisms that naturally interbreed.

Spp. is the scientific abbreviation for a group of species belonging to the same genus.

Sublittoral fringe refers to the edge of the coast exposed only at the lowest tides.

Subtidal refers to the sea bed below the lowest reach of the tides.

Subtropical convergence is the region of the southern oceans at about 42°S latitude where the surface temperature of the sea drops sharply from about 18°C to 10°C.

Sustainable means the use, development and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economical and cultural wellbeing and for their health and safety while –

- a. sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations, and
- b. safeguarding the life-supporting capacity of air, water, soil and ecosystems, and
- c. avoiding, remedying or mitigating any adverse effects of activities on the environment.

Total Allowable Catch (TAC) is the total amount of fish allowed to be caught each year, and includes customary, recreational, illegal and commercial harvests. Customary, recreational and illegal harvests are estimated before the commercial harvest.

Total Allowable Commercial Catch (TACC) is the total amount of fish allowed to be caught commercially each year.

Taiāpure are areas given special status to recognise rangatiratanga. Management arrangements can be established (under the Fisheries Act 1996) for taiāpure that recognise the customary special significance of the area to iwi or hapū as a food source or for spiritual or cultural reasons.

Takiwā is an area of tribal authority.

Tāngata tiaki/kaitiaki are people entrusted with the care of treasured resources and places.

Tāngata whenua, literally the people of the land, means the original people of a place, the local people or hosts.

Tangi literally meaning 'to cry'; a tangi is also a traditional funeral.

Tauranga ika are offshore fishing grounds.

Territorial sea of New Zealand is the area of sea within 12 nautical miles of the baseline, where the baseline is mean low-water mark except where it takes a straight line across the mouth of bays less than 24 nautical miles across.

Tino rangatiratanga refers to the exercise of chieftainship in the highest degree.

Tohunga means priest.

Tons refers to an imperial measure of weight equal to 2,240 lb or 1,016 kg.

TRONT stands for Te Rūnanga o Ngāi Tahu.

Tūpuna are ancestors.

Ūpoko means the head.

Upwelling refers to the action of currents bringing deep, cold, nutrient-laden water to the surface of the sea.

Urupā are burial places.

Wāhi tapu/wāhi taonga are sacred and treasured places.

Waiwhakaheketupapaku are burial sites on the coast.

Wairua means spirit.

Waka means canoe.

Waka hunua means double-hulled canoe.

Whakapapa refers to genealogy or the ancestry of a person or group of people.

Whānau is an extended family group smaller than a hapū.

Wildlife refuge is a protective status given to an area under the Wildlife Act 1953. The area may be publicly or privately owned.

Zooplankton refers to tiny animals that live freely in the sea.

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Opening Speech

Hon Jim Anderton Minister of Fisheries

To the Te Korowai Public Forum

16 February 2008



Kaikoura's unique marine environment

Launch of Te Korowai o Te Tai o Marokura's characterisation report on the Kaikoura marine environment 'Kaikoura Coastal Marine Values and Uses', Takahanga Marae, Kaikoura.

It is not hard to understand why Kaikoura is a national and international tourism destination. There is a marvellous array of marine animals, birds and fish that rely on the unique qualities of the environment that exist off Kaikoura's coastline.

For example, the Kaikoura Canyon, where the continental shelf comes almost to the shore, is one of the most special underwater features in New Zealand.

The Canyon is nutrient rich, which is the reason sperm whales are attracted here. And, because of the depth of the canyon, fish travelling along the coast are pushed close inshore.

Kaikoura has so many special features that I can understand your desire to manage these taonga wisely. I commend you for undertaking the task of developing an integrated marine management strategy for Kaikoura.

For those of you who don't know, Te Korowai was formally established in August 2005.

It is a community group made up of representatives of local marine users and stakeholder groups, including tangata whenua, recreational fishers, commercial fishers, the Forest and Bird Protection Society and the tourist industry.

The group is also supported by representatives from DoC, MFish, MfE, ECAN, Te Runanga o Ngai Tahu and Kaikoura District Council. All have made available information, resources and staff time.

The members of Te Korowai have been meeting every six weeks for the last two years to compile the information for the characterisation. This has been a significant commitment and achievement.

The characterisation report represents, within one document, all the relevant information on the marine environment from the Clarence River in the North, to the Conway River in the South. All Te Korowai participants have contributed to the information gathering process, bringing what knowledge and resources they have to making the document.

The impetus for Te Korowai taking on this significantly time-consuming task was what the various groups recognised as a lack of progress with marine protection and management in Kaikoura, and the special relationship of Ngati Kuri with the Kaikoura marine environment.

Travelling south from the top of the South Island, the first encounter with the coastline is effectively the beginning of the Ngai Tahu rohe and, therefore, the 'gateway to Ngai Tahu'. Ngati Kuri care for this gateway and have been significant supporters of this initiative.

Ngati Kuri, as a first step, has set up a rāhui area (closed to all fishing) on the Kaikoura Peninsula. I understand this is well supported by the community. The rāhui, established under 186B of the Fisheries Act, is a temporary measure and will cease in August 2008. This transition will need to be actively managed to ensure the gains made from the rāhui are not lost. I understand that an application for a mātaitai reserve has been mooted for the area.

Completing the characterisation report is reason enough for a public celebration at its launch. But Te Korowai also wanted to make sure that the information in the report was publicly shared with you, the wider community.

This is an opportunity to ensure that those who know Kaikoura best have a say. The characterisation is the raw material from which a strategy to manage the Kaikoura marine environment can be formed.

At this stage I feel I need to say that forming a strategy will be a challenging task. You will be tackling many of the sustainability and marine management issues that confront all New Zealanders, as we go about using and enjoying our marine environment.

These include how we share our fisheries, how we protect our marine mammals and seabirds, how we look after marine habitats and how we avoid the damaging effects of pollution.

The challenge doesn't stop at forming a strategy. Once you decide what needs to be done, you must continue doing your part to make sure it happens – to decide how your strategy can be implemented. This will require working closely with government agencies and making use of initiatives already underway to manage the marine environment over larger spatial scales, such as Marine Protected Areas and Fisheries Plans. Clearly, solutions that don't require regulation or changing the law will be the easiest of all to put in place.

While this is a potentially daunting task, remember it has been achieved before by the Guardians of Fiordland, so we know it is not impossible. I understand that two members of Fiordland's Guardians are present today to share their knowledge and experience with you.

I recognise the actual process of compiling a characterisation report has been important for Te Korowai, as it was for the Guardians of Fiordland. Sharing knowledge on Kaikoura and gaining

agreement on the accuracy of the information ensures that the information on which the strategy will be based is sound and available to everyone, including the wider community.

Equal access to agreed information lays the foundation for identification of issues and opportunities. It also enables the “gifts and gains” process, so successfully employed by the Guardians of Fiordland, to be negotiated.

Under this process all sectors make concessions for the common good and subsequently benefit themselves. This is a consensus process that allows the whole community to get involved.

It is most encouraging to see that Te Korowai have already successfully engaged in the gifts and gains process by compiling a unified submission to the Hector’s Dolphin Threat Management Discussion Document. While – no doubt – this involved considerable effort and debate, the submission and information supplied by members of Te Korowai has proved helpful in the development of options for the protection of Hector’s Dolphins. I will be giving the submission careful consideration when the time comes to make these decisions, which I anticipate will be towards the end of March.

Members of Te Korowai are to be congratulated on the publication of their useful and excellent report, which will not only be useful for the purpose it was published, but can also be used by anybody that needs information on Kaikoura’s marine environment.

Therefore, I can easily recommend that you all avail yourselves of this excellent report and take the opportunity to participate in the development of a strategy for the Kaikoura marine environment. Take the opportunity to contribute to decisions on how we use and enjoy Kaikoura’s wonderful marine taonga.

I congratulate you on your commitment and all the hard work to date and I am very pleased to launch this, the Kaikoura Coastal Marine Values and Uses characterisation report – it is truly a significant step forward in achieving your community’s aspirations.

I wish you all the very best for the next phase.