Technical Report

Investigations and Monitoring Group

Waiau River Catchment: Tangata Whenua Values Report



Waiau River Catchment: Tangata Whenua Values Report

Report No. U04/72

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Prepared For: Environment Canterbury

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This Tangata Whenua Values Report is the intellectual property of Te Rūnanga o Kaikōura.

The Rūnanga is currently reviewing all natural resource and environmental management policies, as part of developing the Te Rūnanga o Kaikōura Natural Resource Management Plan. For this reason, this Tangata Whenua Values Report is to be considered a living document. The information contained in this report may be reviewed or amended at any time by Te Rūnanga o Kaikōura.

1 Introduction

Environment Canterbury is currently preparing a series of reports on the Waiau River. These reports will be used in the development of a Management Plan for the river, which will be integrated into the Natural Resources Regional Plan (NRRP), and support Environment Canterbury in its function to promote integrated and sustainable management of the natural and physical resources of the catchment. A management plan for the Waiau River will review and address issues such as competition for the use of water (surface and ground), and land use activities in the beds and margins of rivers and lakes.

As part of this process, Environment Canterbury has commissioned this Tangata *Whenua Values Report*, recognising the tangata whenua and kaitiaki status of Ngāti Kuri (Te Rūnanga o Kaikoura), and their relationship with the Waiau River. The purpose of this report is to describe tangata whenua values associated with the catchment, and perspectives as to the kinds of management tools and processes that recognise and provide for the maintenance (and enhancement) of those values.

1.1 Objectives

The objectives of this report, as stated in the project brief are:

- 1. To list and describe cultural values and traditional relationships with ancestral lands, water, sites, wāhi tapu and other taonga, that are associated with any river in the Waiau River catchment (including tributaries, wetlands, beds and margins of rivers and lakes in the catchment), or which relate to the flow, level, and, or, water quality in these rivers.
- 2. To identify what outcomes Tangata Whenua are seeking in terms of river flows and water quality, and what conditions or outcomes Tangata Whenua would not like to see.

This report complements an earlier report prepared by Te Rūnanga o Kaikōura for the Hurunui River (Report R02/23), and those done by other Canterbury Rūnanga for rivers such as the Waipara River (Report R04/01) and the Ashley/Rakahuri River Catchment (Report U03/54).

1.2 Manawhenua

The Treaty of Waitangi, Te Rūnanga o Ngāi Tahu Act 1996, Ngāi Tahu Claims Settlement Act 1998, and legislative responsibilities under the Resource Management Act 1991 outline Environment Canterbury's responsibility to consult with Te Rūnanga o Ngāi Tahu, as iwi authority, and the appropriate kaitiaki (Papatipu) Rūnanga.

The Waiau River catchment is located in the takiwā of Te Rūnanga o Kaikōura. The Rūnanga is the modern day representative of the hapū Ngāti Kuri. The takiwā of Te Rūnanga o Kaikōura centres on Takahanga marae and extends from Te Parinui o Whiti to the Hurunui River, and inland to the main divide.

Te Rūnanga o Kaikōura is one of eighteen kaitiaki (Papatipu) Rūnanga that constitute the membership of Te Rūnanga o Ngāi Tahu. Te Rūnanga o Ngāi Tahu is the tribal representative body of Ngāi Tahu Whānui. It is a body corporate established under section 16 of the Te Rūnanga o Ngāi Tahu Act 1996.

The Te Rūnanga o Ngāi Tahu Act 1996 and the Ngāi Tahu Claims Settlement Act 1998 give recognition to the status of Papatipu Rūnanga as kaitiaki and manawhenua of the natural resources within their takiwā boundaries.

1.3 Relationship to other iwi planning documents

Tangata whenua perspectives on freshwater management are the focus of several iwi planning documents.

The Te Rūnanga o Ngāi Tahu Freshwater Policy Statement (1999) outlines priorities, objectives, policies and strategies for freshwater management, centred on the maintenance and enhancement of four primary values – wāhi tapu, mauri, mahinga kai, and kaitiakitanga.

Te Rūnanga o Ngāi Tahu and Te Rūnanga o Kaikōura have contributed to many external planning processes relating to freshwater resources at both the district and regional level. This includes the preparation of reports such as *Information For Canterbury Regional Council on Ngāi Tahu Values and Desired Water Quality Standards for Rivers Within the Takiwā of Te Rūnanga O Ngati Kuri Kaikōura*, compiled by the Silent File Committee of Te Rūnanga o Kaikōura in 1997.

Te Rūnanga o Kaikōura is currently preparing a Natural Resource Management Plan for the takiwā. The protection and sustainable use of water is one of the primary management objectives in the draft plan. The plan, when completed, will further assist Environment Canterbury in recognising and providing for tangata whenua values and policies in freshwater management regimes.

1.4 Methods

The preparation of this report involved a review of existing information sources and a consultative process with Te Rūnanga o Kaikōura to identify Tangata Whenua values associated with the Waiau River catchment.

Review of existing information:

- Review of existing information on the Waiau River catchment to the extent that the information is relevant to the project brief, including a recent report on instream values and flow regime for the Waiau River by Mosley (2004).
- Review of existing iwi planning documents and tangata whenua values reports.

Consultative process

- Site visit to the mouth of the Waiau River, and to areas of the lower catchment, including Mata Kopae (St. Anne's lagoon).
- Discussions/interviews with tangata whenua from Te Rūnanga o Kaikōura, focused on the identification and explanation of issues and concerns associated with existing
 - (i) flow management/water allocation regimes;
 - (ii) water quality (where and why);
 - (iii) land uses within the catchment that affect water quality; and
 - (iv) activities in the beds or on the margins of rivers.
- Discussions/interviews with tangata whenua from Te Rūnanga o Kaikoura focused on the identification and discussion of the outcomes Tangata Whenua are seeking in terms of river flows and water quality, and what conditions or outcomes tangata whenua would not like to see.
- Distribution and review of draft report with Te Rūnanga o Kaikoura.

- Hui at Takahanga marae with tangata whenua from Te Rūnanga o Kaikoura to discuss and review draft report.
- Consultation with Kaupapa Taiao (Natural Resources Unit), Te Rūnanga o Ngāi Tahu.

Note: Mapping of information relating to tangata whenua values in the Waiau catchment was not included in this report. Te Rūnanga o Kaikoura, along with other Canterbury Rūnanga, are currently working with Environment Canterbury mapping sites and places of significance in the takiwā, including the Waiau River catchment. The Rūnanga would prefer to delay any other mapping of values until this project is complete.

2 Ngati Kuri values in the Waiau River Catchment

This section addresses objective one of the report: to list and describe Tangata Whenua values and traditional relationships with ancestral lands, water, sites, wāhi tapu and other taonga, that are associated with any waterbody in the Waiau River catchment, or which relate to the flow, level and, or, water quality in these waterbodies.

The values described here relate to the overall heath and well-being of waterways, and to the relationship of tangata whenua with them. How such values are linked to water flow and quality is discussed in section 3.

2.1 Ngā Wai

The spiritual and cultural connection to rivers, and to freshwater in general, is of primary importance when considering tangata whenua values associated with a river catchment. For Ngāi Tahu, water is a taonga left by the ancestors to provide and sustain life.¹ All waterways, and their associated tributaries, wetlands and springs, are considered significant resources of value to Te Rūnanga o Kaikōura. In the Waiau River catchment, the river mouth, tributaries such as the Caroline Stream, Lemmington Stream, Tuahuka (Leader River), Hope and Boyle Rivers, Middle Drain and Mata Kopae Iagoon are of particular significance, for values such as ara tawhito (trails), Tapuae Tïpuna, mahinga kai and wāhi tapu sites.

For Ngāti Kuri the Waiau-uha (the Waiau River) has a cosmological link with the Waiau-toa (Clarence River). The river in legend is the female spirit of the inland mountains, and the Waiautoa is the male. Moving from the Spenser Mountains and Miromiro (Jollies pass), where the Waiau meets the Waiau-toa, the waters become separated. As Waiau-uha laments the parting, her tears fall as warm rain to melt the alpine snows, swelling both rivers to massive proportions.

Source: Ngāti Kuri whakapapa

General values associated with rivers include:

- Maintaining natural flow variability and flow regime
- Ecology and character of river mouth areas
- Maunga
- Headwaters (source of mauri)
- Repo raupō (wetlands)
- Protection of base flows
- Native fisheries (mahinga kai)
- Healthy riparian areas
- Gorges
- Waipuna (freshwater springs)

- Relationship between water quantity and water quality
- Relationship between surface and ground water
- Continuity of flow, ki uta ki tai
- Indigenous flora and fauna
- Nohoanga
- Water quality
- Maintaining natural course
- Wāhi tapu / wāhi taonga
- Relationship between te whenua (the land) and te wai (the water)

Tangata whenua perspectives related to freshwater management are often expressed through the cultural value of mauri. Sustaining the mauri of a river will sustain healthy ecosystems, support a range of cultural uses (including mahinga kai), and reinforce the cultural identity of the people.² While terms like mauri may sometimes be seen as nebulous, they represent not the mythical, but rather the inter-relationship between fundamental values

¹ Te Rūnanga o Ngāi Tahu 1999

² Tipa, G. and Teirney, L. 2003, pp. 9

and practice.³ Mauri is the life supporting capacity of the water; protecting the life supporting capacity of water means using the river is a way that sustains it for future generations.

2.2 Rivers as part of the Ngāi Tahu landscape

Rivers are the lifeblood of Papatūānuku that supply nourishment to her, through her, and to all living things. They are connected through whakapapa to the landscape and to the people, and as such are a source of mana and identity.

The Waiau River catchment is a Ngāi Tahu cultural landscape. Tribal history is embedded in the river, and the lands that it flows through. Over the generations, the river, its tributaries, the vast areas of repo raupo (wetlands), waipuna (springs), and riparian areas, as well as the surrounding forests, valleys and maunga (mountains) provided tangata whenua with abundant natural resources, mahinga kai and cultural and spiritual associations.

The Waiau river catchment was included in the Kaikōura land purchases, an important time of Ngāi Tahu history. It was a time of land dispossession that changed the physical and cultural landscape of the region, and thus the economic base of Ngāi Tahu.

The Waiau River catchment and the 1859 Kaikoura Purchase

The Waiau River catchment was part of the Crown's 1859 Kaikōura Purchase, one of eight major land purchases that saw Ngāi Tahu land sold to the Crown between 1844 and 1864.⁴ The demand for land by European settlers led the government to send Mackay Jr to secure both the West Coast and the Kaikōura blocks from Ngāi Tahu. Mackay wrote to Kaikōura Whakatau at Mikonui, inviting him to discuss the purchase of the land.

Most of the land that Ngāti Kuri held customary title over (from Te Parinuiowhiti to the Hurunui) had already been sold or leased to settlers by the Nelson Land Office. For example, Ngāti Kuri had requested a large pastoral reserve between the rivers Kahutara and Tutaeputaputa (Conway), which was refused – because the land in question had already been leased to three run holders. This, coupled with threats of involving Ngāti Toa, left Kaikōura Whakatau and the others with little to negotiate with.

Early resistance by Ngāi Tahu to the sale of their lands was met with steady pressure until an agreement was finally signed between Ngāi Tahu and Commissioner McKay in 1859.

Source: Evison, H.C 1987, 1997

Despite the changes in land ownership, and the ability of Ngāi Tahu to express traditional relationships and exercise kaitiaki responsibilities over the last 160 years, Ngāi Tahu history and identity remains on the landscape. Wāhi ingoa (place names) and other culturally important landscape features are tangible reminders of the extent of Ngāi Tahu customary land use and occupancy, and to the degree to which tangata whenua understood and interacted with the landscape. The knowledge and stories held by tangata whenua, that have been passed on through generations, keep ancestral connections with the significant places such as the Waiau River strong. Nohoanga sites (under the NTCSA 1998), such as at the Waiau River mouth, reinforce the contemporary importance of the river in terms of kaitiakitanga, culture and identity.

2.3 Ara tawhito ki pounamu

The Waiau-uha River trail was a subsidiary trail in the network of routes and passes used by Māori to travel between Canterbury and Te Tai Poutini. On the east coast, the Waiau River trail connected to the Kaikōura Coastal trail. The inland Amuri Pass route, at the headwaters

³ Kawharu, M. 2002, pp. 13

The injustices surrounding the transfer of Ngāi Tahu lands to the Crown were confirmed and acknowledged in the Crown's formal apology as part of 1998 Ngāi Tahu Claims Settlement.

of the Doubtful River, went from the Waiau River to the Arahura River, then down the Mawhera and on to the Arahura pounamu areas. The Hope Pass route also linked the Waiau River trail and the western rivers of Te Tai Poutini. Alternatively, travellers could branch northwards from the Waiau River, to the Cannibal Gorge (Lewis Pass) trail (see Figure 1).

The Maruia and the route now known as the Lewis Saddle, thence to the Waiau-uha and so on into South Marlborough and North Canterbury made a convenient, if hazardous, highway for the swag-carrying parties of greenstone-getters and warriors in the long ago through a very wild territory, an eternal jumble of mountains and cliff and defile, with here and there a flat valley which comes as a welcome break in the vast wilderness of ups and downs.⁵

Figure 1: Ara tawhito ki pounamu: major routes and passes. Source: Brailsford 1996



⁵ Brailsford: 1996, pp. 95.

2.4 Kaitiakitanga

A further aspect of the relationship of Ngāti Kuri to the Waiau River is expressed through kaitiakitanga. Kaitiakitanga is about the rights and responsibilities associated with being manawhenua, or holding customary authority over an area.

As manawhenua, Te Rūnanga o Kaikōura has a responsibility for the sustainable use and management of the Waiau River and its wider catchment area *mo tatou, a, mo ka uri a muri ake hei* (for us and our children after us). This means ensuring that values associated with the river and catchment are protected, and in many cases, enhanced, for future generations.

2.5 Ki uta ki tai: From mountains to sea

The Waiau River flows *ki uta ki tai* – mountains to the sea – from its headwaters in Ka Tiritiri o te Moana (the Southern Alps), the ancestors of Ngāi Tahu and the gateway to the atua (gods), through the Amuri Ranges and Emu Plains, downstream through the Parnassus Gorge and lowland areas to the river mouth and coastal marine boundary. The river flows from a mountain and high country landscape of beech forest, tussock grasslands and valley flats to a lowland floodplain and coastal lagoon, where it flows into the sea.

The principle of *ki uta ki tai* is central to Ngati Kuri perspectives on the management of water resources. It captures the essence of the tangata whenua relationship with a river – valuing a river as a source of life (as opposed to a *resource that is a source of money*), from source to sea across multiple, diverse landscapes.

2.6 The river mouth

The Waiau River has high concentrations of wāhi tapu and wāhi taonga values (see section 2.7), many of which are concentrated in the coastal river mouth area. In addition to these values, the river mouth is also valued for its hydrological and ecological importance. The river mouth facilitates the natural mixing of salt and freshwaters. The water that flows into the sea at the Waiau river mouth is a crucial link in the water cycle. When the link is broken or lessened, the ecological balance of land and oceans, fresh water and seawater, also gets disrupted. Saline water may start intruding inwards, swallowing the beaches and eroding the coast. The protection of the exchange of freshwater and seawater at river mouths is seen as necessary to protecting the mauri of waterbodies.⁶

2.7 Wāhi taonga / Wāhi tapu

Wāhi taonga and wāhi tapu refer to places that hold the respect of the people in accordance with tikanga. Wāhi taonga is often used by Te Rūnanga o Kaikōura as a general term to identify sites or places of significance that are not defined as wāhi tapu. Wāhi tapu are sacred sites and places, most often urupā or places where ko iwi tangata (human bones) may be found.

⁶ Te Rūnanga o Ngāi Tahu 1999, pp. 17

Within the Waiau River catchment, there are numerous sites, places and resources that are considered wāhi taonga and wāhi tapu, as described in Table 1.

Table 1 : Significant sites and places in the Waiau River catchment

Significant sites (wāhi taonga, wāhi tapu) in the Waiau River catchment*

Pa site at river mouth Registered NZ archaeological sites

Waipuna along Lemmington Stream Mata Kopae Miromiro (Jollies pass) General river mouth area Karaka trees at river mouth Tauranga waka at river mouth Waitapu or Wai-ariki (hot springs at Hanmer) All tributaries and wetlands associated with the Waiau are considered wahi taonga Wāhi pakanga (battle site) at river mouth Middens, ovens, pits associated with coastal areas Caroline stream, Boyle River, and Hope River Ara tawhito (trails) High country lakes Areas of high indigenous biodiversity Known and unknown urupā Kainga nohoanga Maunga (e.g. Spenser Mountains)

*not a comprehensive list



Photo 1: Site visit to the Waiau River mouth, with pā site in background. There is also a known wāhi pakanga in this area. Karaka trees in this area mark urupā.

2.8 Biodiversity values and mahinga kai

The protection of indigenous biodiversity is an important value for Te Rūnanga o Kaikōura. The Rūnanga often refers to protecting indigenous biodiversity values (as including all mahinga kai species) as opposed to only using the term mahinga kai.

Areas of the Waiau River catchment that are largely unmodified or in a natural state are highly regarded by Te Rūnanga o Kaikōura as important areas of indigenous biodiversity. For example, limited access to the river mouth and good stewardship by local landowners has resulted in the conservation of ground cover natives such as mingi mingi and matagouri,

and of native bush remnants in coastal areas which provide habitat for native birds such as kereru and kingfisher.

The Waiau River catchment historically had an abundance of mahinga kai associations, such as nohoanga. The term nohoanga traditionally referred to the seasonal occupation sites that were an integral part of the seasonal mahinga kai cycles of Ngāi Tahu. Such sites would have been all along the Waiau River, often one day apart. The traditional concept has been given contemporary effect, in the Ngāi Tahu Claims Settlement Act 1998, through the provision of temporary campsites adjacent to lakes and rivers, to facilitate customary fishing and gathering of other natural resources. One such site is located at the mouth of the Waiau River.

During a site visit to the Waiau River, tangata whenua described how particular areas in the Waiau flats (lowlands) where used as mahinga kai to supply the pā site at the river mouth. Places such as Mata Kopae (St. Anne's Lagoon) supplied freshwater fish such as tuna (eel) and waterfowl, as well as weaving materials. Several waipuna (springs) along Lemmington stream were used as a freshwater source when the river flooded.



Photo 2: Mata Kopae. This wetland area was a well known mahinga kai area, supplying the nearby pā with fish, waterfowl and fibre materials.

2.9 Matae Kopae

Connected to the Waiau River through Caroline Stream, Mata Kopae is an extremely significant site to Te Rūnanga o Kaikōura. During site visits, tangata whenua expressed their connection to this place – as a place that is ancestral and a place that is Ngāi Tahu, despite a contemporary landscape that is largely European.

As described, Mata Kopae has strong mahinga kai associations. A place rich in tuna (eel), other native fish, and waterfowl, the lagoon was valued by Ngāi Tahu for breeding stock. Tangata whenua would remove breeding stock from the wetland area and transfer them to other places. The banks at the entrance of Mata Kopae were originally made by Ngāi Tahu ancestors, to protect breeding stocks (so that they remained in the lagoon).⁷

⁷ N. Kerei Keepa, Te Rūnanga o Kaikōura, personal communication, June 2004.

3 Relationship of values to flow regime and water quality

The values described in this report underpin tangata whenua perspectives and policy on water resources management. They are what can be termed *cultural thresholds* - desired states or levels of acceptability that are determined through the need to protect, maintain, and in some cases enhance, values at levels that are acceptable to tangata whenua.

The identification of cultural thresholds, and desired outcomes related to variables such as flow and water quality (objective 2) is thus a reflection of the relationship between values and such variables, and even the sensitivity of such values to change. Examples of these relationships are provided in Table 2.

Value	Relationship to flow and water quality
Nga wai / Mauri	Flow must ensure life supporting capacity is maintained Natural character and flow variability is part of the life essence of the river The river is more than a source of water flow for abstraction Maintaining water quality is part of respecting the river Point and non-point source discharges impact erode mauri values Excessive abstractions adversely impact mauri values Link between water quality and water quantity Mixing of waters adversely impacts mauri values
Wāhi ingoa / place names	Place names often describe the physical environment, such as specific characteristics or uses associated with a waterway. Such characteristics or use may be dependent on particular flow and water quality.
Ara tawhito / trails	Historically, flow may have determined safe river crossings. How the river flows, looks, behaves is all part of the environment experienced by travellers, and would have determined to some extent the location of nohoanga (camping and food gathering sites) and other cultural important sites along the river.
Repo raupo / wetlands	Reduced flows, land use and drainage have reduced the number of wetlands associated with river and tributaries. Adequate flows are needed to maintain any remnant wetlands. Wetlands are linked to water quality in their functions as filtering and cleansing water; they are the "kidneys" of the land.
Waipuna /springs	In many places, river flows are directly linked to waipuna. At the Waiau river mouth, flow of waipuna (or lack of) is used as an indicator for flow and river health. High water quality can sustain valued waipuna, or conversely, poor quality can degrade them.
Riparian areas	Healthy riparian areas, and the indigenous species associated with them, require good water quality and sufficient flow. Reduced flows can damage habitat for indigenous species, and result in encroachment of introduced plants (invasion) into a riverbed
Mahinga kai / biodiversity, indigenous species	Certain fish species will require certain levels of flow for migration and spawning. Temperature and water quality (and other ecological conditions) create distinctive habitats for species. Flood events as part of a natural hydrologic regime are necessary to maintain vegetation free gravel bars in river channel for nesting birds. When water demand is highest is often when fish need the water the most.
Wāhi tapu/wāhi taonga	Change in flow can either flood or expose wāhi tapu such as pā sites, middens, ovens or urupā, or water burial sites.

Table 2: Relationship between tangata whenua values, flow regime and water quality

	The whole of the Waiau and its tributaries are considered wahi taonga and thus sufficient flow and water quality must be maintained.
River mouth environment	Flow conditions are directly related to the nature and extent of river flows into the sea; and to maintaining the balance of freshwater saltwater mix (see Photo 3) Water quality is important to maintaining the nature of the estuary/lagoon environment
Kaitiakitanga	Ensuring that values associated with the river are protected is a key aspect of kaitiakitanga and the rights and responsibilities that characterise the relationship between tangata whenua and the Waiau River. Restoration of the ability of tangata whenua to effectively participated in freshwater resources management (in partnership with other agencies), is part of recognising and providing for kaitiakitanga.



Photo 3: Waiau River mouth, June 2004. The river is opening to the sea to the south of where it usually opens, indicating low flows in the river. This is one of several indicators used by tangata whenua to determine level of flow.

4 Issues associated with the Waiau River Catchment

If you see the kingfisher on the shore of the river, you know flows in the creeks are low – Norm Kerei Keepa, Te Rūnanga o Kaikōura

Freshwater management in the Waiau River catchment, as with other parts of Canterbury, is of concern to Te Rūnanga o Kaikōura. Concerns relate primarily to the cumulative impacts of water abstractions, the intensification of certain land use activities, depletion of underground aquifers to the north and south of the Waiau, and the need for a flow regime that preserves the ability of the river to maintain levels of biodiversity and ecological health. Table 3 describes tangata whenua concerns related to flow management, water quality, land use in the catchment, and activities in the beds and margins of waterways.

Table 3: Te Rūnanga o Kaikōura concerns related to flow management / water allocation, water quality, land use, activities in the bed and margins of rivers, and general river management

ISSUE	CONCERNS
Flow management/water allocation	High irrigation demands around Parnassus Large scale irrigation schemes and demand for water Depletion of aquifers to the north and south of the Waiau Damage to waipuna through low flows Lack of provision for connections between surface and groundwater Water allocations to support more intensive farming practices Inappropriate (low) minimum flows Low flows and increased sedimentation in rivers Low flows and changes to river mouth environment Lack of understanding of cumulative effects Lack of robust monitoring regimes in freshwater management Lack of understanding of instream values in many areas Need to maintain ecological / hydrological balance (e.g. sea water/freshwater) Potential loss of recreational values (e.g. over abstractions impact on habitat means less bird life to view) Need to see all waterways as taonga, to be treated with respect and protected Maintenance of habitat through appropriate level and flow Potential impact of low flows on wāhi tapu Impacts on natural flow variability and thus natural character of the river Minimum flows as sustainable flows Need to match land use with natural water constraints and capacity Flow monitoring sites that are upstream of majority of abstractions Duration of water abstraction consents Lack of emphasis on water efficiency for water users Damming and diversions
Water quality	Contamination of water quality as a result of point and non-point source discharges Contamination of water as a result of unsustainable land practices, such as spray irrigation of effluent, over stocking and inefficient fertiliser application Effluent disposal (pig, dairy) in Parnassus flats area High nitrogen levels (Amuri basin) Run off into the Pahau and Waiau from irrigation on the Amuri plains (irrigation bywash) Lack of recognition of dependence of water quality on water quantity Impacts on health, abundance and diversity of native fish Impacts on health, abundance and diversity of native waterfowl and other aquatic birdlife Drainage of wetlands and subsequent loss of natural cleansing function

	Unnatural mixing of surface and groundwater as a result of irrigation and low flows
Land uses within the catchment that affect water quality	Overdevelopment along both banks by farming Inappropriate land use that does not reflect landscape Dairy conversion Unsustainable management of forestry plantations (also wilding pines/macrocarpa) Degradation of natural or "unmodified' environments Lack of long term thinking in land use activities in many areas Need to support landowners who are doing good things Drainage / dewatering of wetland areas adjacent to the Waiau and its tributaries (and subsequent loss of natural cleansing function) Large scale irrigation projects Unnatural "wet" lands
Activities in the beds or on the margins of rivers	Loss of riparian areas through unsustainable land practices River protection works that "lop" willows to increase density Use of willows as river protection works Forestry plantations to edge of the Waiau River (lower reaches) Riparian damage and/or erosion Activities that impact on the river's natural course and ability to flood (the river is now so confined that it can only burst its banks in some areas) Stockpiling (e.g. stockpiling in the path of floods flows, that will then contaminate water) Lack of monitoring of gravel extractions, both existing activities and new applications

Irrigation is by far the highest abstractive demand on surface water in the Waiau catchment (see Table 4), and is in many cases related to the conversion of land to dairy farming. The Amuri plains region in particular, is considered to have significantly degraded land based and instream values, with little protection afforded to small tributaries, creeks and wetland areas. The Amuri Irrigation scheme abstracts water from the Waiau River at Mouse Point, and discharges the excess back into the Hurunui, Pahau and Waiau Rivers.⁸ This region is considered an example of where tangata whenua values clearly need to be restored and enhanced.

The effects of water abstraction for irrigation are two fold:

- Impacts of abstracting water from a river (on instream values)
- Impacts of putting that water on land (run-off)

Abstracting water for irrigation purposes means that water is not just leaving the river; water is also added to the river - in the form of run-off. This run-off often contains discharge such as nitrates. Summary results of future water demand scenarios show that irrigation will continue to be the major user of water.⁹

Table 4: Maximum allocated weekly rate of take (I/s) from the Waiau River (April 2001)

Resource Source USE zone			E		Total by resource zone		
		Irrigation	Stockwater	Municipal	Industrial		SW + GW
Waiau	SW	13 876	0	63	1	13 940	14 641
	GW	595	19	63	24	701	

Source: Canterbury Strategic water Study (2002).

⁸ Crengle, H. et al, 2002.

⁹ Canterbury Strategic water Study, 2002.

For Te Rūnanga o Kaikōura, levels of water abstractions are contributing to degradation in lower reaches and decline in ecological health of the Waiau River. For example, during a site visit in June 2004 tangata whenua observed that the river mouth showed signs of low flows in the Waiau River (see box for a list of indicators used). Low flows were described as a resulting from ground and surface water abstractions during earlier dry summer periods, coupled with the lack of rain and snow in mountain areas that replenish the river.

Indicators used to determine river flow on site visit to lower reaches of the Waiau River:

- Seeing rock faces exposed in riverbank areas
- Location of river opening in coastal area indicative of low flow (the river normally flows straight out into the sea; in low flows, it veers to the south)
- Shingle banked up in certain areas, because river has fallen away
- Waipuna (spring) on coastal hill slope not flowing; connected to river flows
- Lagoon at river mouth 2/3 ordinarily size

Discussions with local landowners in the area indicated that the low flows were observed for several weeks previous. However, as seen in Figure 2, flow rates from the Environment Canterbury website indicated flows were above minimum (as measured at Marble Point in cubic metres per second). Minimum flow for the Waiau River mainstem in June is set at 25 m³/s (Table 5). On June 2, flow was closer to 50 m³/s, and was near that value for at least the week previous.





Table 5: Existing minimum flows for the mainstem (m³/s):

	Jan	Feb	Mar	Apr	Мау	Jun e	July	Aug	Sept	Oct	Nov	Dec
Waiau River (at Marble Pt)	20	15	15	20	25	25	25	25	25	25	25	25

While tangata whenua recognise the role that coastal processes play in the river mouth environment, low flows observed during the site visit are seen as indicating that:

- Minimum flows are too low
- It is not adequate to measure flow only at Marble Pt, upstream from the majority of abstractions
- There is a need for measurements of stream flow at the mouth (and even Waiau River bridge) to determine what the differential is between the river mouth and Marble Pt.

In the report Waiau River: instream values and flow regime, Mosley (2004:92) suggests that:

Abstractions at present have limited impact on instream values, thanks to their size relative to the river's "normal" low and medium flows, the frequency of freshes and floods in the river, and the conditions placed on resource consents.

However, with continued demand for water to permit development of dairying and other high value land uses, Mosley also reports that:

The management of the incremental environmental effects of abstractions must be carefully considered.

Te Rūnanga o Kaikōura believes that abstractions *are* having an impact on the Waiau River, and the values that are associated with it. Current flow management regimes are considered inadequate for maintaining tangata whenua values. Concern is not just with volumes of water leaving the river, but also with the water that is returning to the river through run-off and irrigation bywash, and the cumulative impacts on water quality of low flows and contaminated run-off. Water management for the Waiau, as with other rivers, must seriously consider the sustainability of the kinds of land use that water resources are supporting, the long-term future of water, and the need to preserve the inherent values of the river.

5 Desired Outcomes – River flow and water quality

Natural systems distribute (e.g. rivers) and store (e.g. wetlands) water the way that Papatūānuku intended them to be. Human activities alter these natural systems.

Objective two of this report is to identify those outcomes that Te Rūnanga o Kaikōura are seeking in terms of river flows and water quality (and those outcomes to be avoided). This includes outcomes related to minimum flows, flow allocation (water abstractions regimes), and water quality standards.

Translating tangata whenua values into outcomes that can be incorporated into mainstream planning and management processes that are dominated by western science is a challenge for both Rūnanga and Environment Canterbury. The challenge is two fold: mainstream planning and management processes must be flexible and adaptable enough to recognise and provide for tangata whenua values that may be considered intangible or difficult to quantify; and second, tangata whenua must work to define, qualify and, where possible quantify, outcomes that will recognise and provide for values. One step in this process is the identification of *thresholds*, as described in this report, as desired states or levels of acceptability that are determined through the need to protect, maintain, and in some cases enhance, values at levels that are acceptable to tangata whenua.

This section considers outcomes related to four areas:

- 1. Flow management and water abstraction
- 2. Water quality
- 3. General management
- 4. Further issues

5.1 Outcomes: Flow management and water abstractions

Quantifying outcomes, that is - providing numbers to Environment Canterbury in terms of flow management (e.g. for minimum flow) is a difficult task for Rūnanga. Rūnanga do not have access to the technical expertise that is often required to quantify flow requirements. Other processes, such as advisory groups and technical panels, that provide a forum for communication and collaboration with technical experts and affected parties may be more effective in this aspect.

For the purposes of this report, Te Rūnanga o Kaikōura has provided a series of conditions or criteria that any flow and water allocation regime should meet. Such conditions and criteria should, together, define and explain cultural thresholds. The question asked is as follows:

What is ideal flow regime be for the Waiau River and its tributaries?

Te Rūnanga o Kaikōura supports flow sharing as an allocation regime for the Waiau River, provided that:

- The flow sharing distribution is at a *minimum* 60:40 (that is, only 40% of the flow above the minimum flow may be abstracted);¹⁰
- The flow sharing distribution is appropriate to maintain, and where needed, enhance, tangata whenua and other instream values;

¹⁰ Recognising that support for any flow sharing distribution is dependent on having appropriate minimum flows in place.

- The minimum flow is appropriate to maintain tangata whenua and other instream values;
- There are appropriate limits on abstractions;
- The hydraulic connections to groundwater are recognised and provided for;
- Flow monitoring sites are appropriate in number and location (currently, the main flow monitoring site is at Marble Point, which is upstream of the majority of water takes from the river – this is considered insufficient); and
- Flow sharing is relative to appropriate land use.

More specifically, this means the flow regime would:

- Prevent any further deterioration of the catchment;
- Restore flows presently subject to abstractions that are determined to be necessary to maintain the well-being of the river;
- Protect the natural seasonal variability of flow, including periodic flushing flows;
- Ensure that the river opens to the sea in its natural location;
- Ensure the protection and survival of mahinga kai and other culturally important species in their natural habitats and ecosystems;
- Reflect a diversity of values, including those identified by tangata whenua; and
- Remain not compromised by damming and diversion schemes that would reduce, change or alter existing flow in any part of the Waiau.

Flow Sharing:

This type of allocation regime allows a proportion of the flow above the river's minimum flow to be abstracted (a sharing ratio). For example, for each cumec above the minimum flow, half a cumec can be abstracted and the other half cumec must remain in the river. This type of regime protects the river's flow variability, but it also makes water management more difficult as it means a constantly changing allowable take as the river's flow changes.

The Waiau River currently has a flow sharing allocation regime of 60/40. That is only 40% of the flow above the minimum flow may be abstracted. Total abstraction from the Waiau River is limited to 18 cumecs.

Sources: Canterbury Strategic Water Study 2002; Environment Canterbury

a) Minimum flows:

A flow allocation regime must have appropriate minimum flows in place to manage water abstractions both for the mainstem and the tributaries. For Te Rūnanga o Kaikōura, minimum flows must:

- Be assessed as sustainable, sufficient flows, and not only as minimum flows. Minimum flows should not be set only to sustain current levels of abstractions;
- Be at a higher level in the Waiau River catchment;
- Exist for all tributaries. Abstractions from tributaries should only be permitted where appropriate minimum flows are in place.
- Include buffer cumecs to ensure river health is protected in the dry season. This
 allows flow regimes to respond to changing circumstances;
- Include flow monitoring for the mainstem that is measured at Marble point *and* at the Waiau River bridge on State Highway 1. Additional monitoring would be valuable to

have at a point 200 m or so inland from the river mouth. It is not sufficient to only measure flow upstream of abstractions, as it can result in downstream areas dropping below minimum flow. The bulk of abstractions occur between Marble Point and the Waiau River bridge at SH1.

- Be flexible. Minimum flows should not be considered final. Ongoing observations and study may conclude in the future that rates are inadequate, and may need to be altered; and
- Take into account the relationship between minimum flow and groundwater.

A sustainable flow regime also means minimising or avoiding activities that adversely impact on flow. In the Waiau River catchment, tangata whenua identified several activities in the beds and margins of the river and its tributaries that should be minimised or avoided, because of the adverse impacts on flow and water quality.

Such activities include:

- 'Lopping' of willows to increase density
- Planting of willows and other exotic species along river margins
- Degradation of riparian and wetland areas as a result of stock access
- · Forestry plantations immediately adjacent to the river
- Spread of wilding pines and macrocarpa

In addition, serious consideration must be given to the sustainability of land use practices that water resources are supporting. For example, tangata whenua believe that lowland areas of the Waiau River should be protected from dairy conversion. Low impact farming (pastoral), with appropriate stocking rates, may be the most suitable land use in these areas.

b) Managing water abstraction

The Rūnanga believes that sustainable water management extends beyond flow allocation. How abstractions are managed is important. The Rūnanga believes that it is important to ask: What kinds of land use is the water supporting? Is it efficiently used? How effective are conditions on resource consent applications? What kind of monitoring occurs?

Te Runanga o Kaikoura identified several key outcomes relating to managing water abstractions:

- The duration of water abstraction consents must reflect potential risk to waterway health. Te Rūnanga o Kaikōura does not support 35-year durations on resource consents related to water abstractions. All water consents that effect groundwater quantity should be issued for a maximum of no more than 10 years.
- Water allocation must be consistent with Te Rūnanga o Ngāi Tahu priorities for water allocations (see box).
- Land use should be matched with water availability (with availability meaning over and above what is required for river health), not the other way around. Water permits applications may need to justify water takes, or consider how sustainable a given land use activity is in a given area.
- Efficiency and using water effectively must be made a priority. Water storage and wise use (small scale, appropriate storage) should be encouraged.

- Water meters (and even restrictors) must be installed for all water abstraction consents, to accurately measure and report volumes of water being abstracted, and enable monitoring of water takes.
- All water abstraction activities are encouraged to use best practice and efficient use of water. Te Rūnanga o Kaikoura has issue with the waste of water as a result of some irrigation practices.
- No groundwater abstractions that will adversely impact on Mata Kopae.
- For all water abstraction consents, non-compliance must result in penalties, with subsequent offences resulting in withdrawal, revocation or suspension of resource consents. ¹¹

Ngāi Tahu views about sustainability	are reflected in the priorities	that iwi has established
regarding the use of water: ¹²		

Priority 1:	Sustain the mauri of the waterbodies within the catchment
Priority 2:	Meet the basic health and safety needs of humans (drinking water)
Priority 3:	Protect cultural values and uses
Priority 4:	Protect other instream values and uses (indigenous flora and fauna)
Priority 5:	Meet the health and safety needs of humans (sanitation)
Priority 6:	Provide water for stock
Priority 7:	Provide for economic activities including other abstractive uses
Priority 8:	Provide for other uses

c) Monitoring

Te Rūnanga o Kaikōura believes that monitoring must play a more prominent role in all aspects of freshwater management. Monitoring should be used to ensure compliance (i.e. for resource consent activities), and also to provide a continuous, reliable information source to enhance decision-making processes (e.g. State of the Environment / State of the Takiwā monitoring). Monitoring can allow agencies to assess whether or not established regimes meet management objectives, thus providing feedback on existing policy.

The Rūnanga believes monitoring is a good way to provide for effective participation by tangata whenua in management of water resources. Monitoring programs can incorporate both western scientific and tangata whenua knowledge to establish baseline data and monitor change.

- For all water permits, Te Rūnanga o Kaikoura supports comprehensive monitoring and effective, enforced penalties (and even revocation of consent) for non-compliance and over-abstractions (see above).
- There is a clear need for monitoring of the relationship between surface water takes, water levels, and aquifer quality and quantity.
- Te Rūnanga o Kaikōura supports investigating the use of a Cultural Health Index (CHI) as a tool to facilitate monitoring of stream health. The CHI links Western scientific methods and cultural knowledge about stream health.¹³
- More monitoring is required of actual total water abstraction, both surface and groundwater, in the Waiau River Catchment. Mosley (2003, pp. 56) notes that at present this information is indeterminate, as only the Amuri Irrigation Company abstractions are monitored.

¹¹ The Rūnanga believes that current non-compliance penalties are often ineffective.

¹² Te Rūnanga o Ngāi Tahu, 1999

¹³ For more information on the CHI see Tipa, G. and L. Teirney, 2003.

5.2 Outcomes: Water quality

Point source discharges, which Te Rūnanga o Kaikōura opposes, are one source of impact on water quality. However, as described in section 3, water quality is also a reflection of the way that flows and water abstractions are managed. Water abstractions primarily for the purpose of irrigation, as in the Waiau River, means that there will be significant amounts of water returned to the river, in the form of run-off. More often that not, this run-off will contain contaminants (fertiliser, sediment, effluent, nitrates).

Dilution to pollution is not the solution, and is unacceptable to tangata whenua. Rūnanga policy is consistent in advocating discharge to land, allowing Papatūānuku, through wetlands and riparian areas, the opportunity to filter and clean any impurities, to ensure that water is not contaminated. However, if discharge to land exceeds the carrying capacity of the land, then both the land and the water will be contaminated. Freshwater management must take into account the relationship between the types of land use in the catchment (i.e. what land use activities are water abstractions supporting?), and water quality.

For tangata whenua, good water quality is dependent on both water quantity and flow, regular monitoring, and on sustainable land use practices (of which monitoring is a component). The following outcomes relate to tangata whenua perspectives on water quality management.

- Prohibit the direct discharge of contaminants to water, and mitigate the impacts of any non-point source pollution;
- Conditions for buffer zones of at least 50 m adjacent to waterways, springs and wetlands, and monitoring for adverse impacts on surface and groundwater, should be included on all consents for discharge to land;
- Observed buffer zones around Mata Kopae restricting land use activities that may impact water quality;
- Regular monitoring of water quality in the Waiau River and tributaries must occur, particularly in areas where intensive farming and forestry activities are prevalent;
- Provide for the relationship between water quality and quantity in any flow and water allocation regime;
- Landowners who are applying fertilisers to land should be required to undertake regular soil and foliage testing, as part of farm management, to assess appropriate application levels and rates;
- Landowners should be required to monitor nitrogen levels to prevent overloading;
- Environment Canterbury should regularly monitor nitrogen levels in soils that are intensively farmed, in order to protect water quality.
- Protection for existing areas of naturalness, including native bush remnants, wetlands and riparian areas, for their natural function in maintaining ecological health.
- Riparian and wetland protection and restorations must be key components of managing water quality in the catchment.

In addition, some land use activities in the catchment, particularly in the beds and margins of waterways, can adversely impact water quality. Such activities should be avoided. They include:

Intensive stock access to waterways, wetlands and springs

- Discharge to land without buffer zones
- Degradation of riparian areas
- Drainage of wetland, removal of wetland vegetation
- Forestry plantations adjacent to waterways (e.g. lower Waiau river)

5.3 Outcomes: General management

The outcomes listed above describe an approach to managing freshwater that Te Rūnanga o Kaikōura believes can preserve and protect the river, while still allowing for sustainable human use of water resources. This management approach is described as:

Ki uta ki tai	From the mountain to the sea; freshwater management requires that a catchment be considered in its entirety - from its source to its end. This approach means for example, that land use activities in the upper catchment take into account downstream impacts.		
Catchment based	A catchment is the most appropriate scale for managing water resources, as it is based on natural boundaries, and the hydrological system within those boundaries.		
Effective partnership	Working together for common objectives. This includes recognition of the value of tangata whenua expertise and knowledge in understanding river systems and defining conservation and use priorities.		
Stewardship	Encouragement of local landowners/communities in sustainable land use practices and restoration. Support local landowners with long term interests (intergenerational farming), as opposed to those who are looking for short-term cash grabs ignoring the carrying capacity or sustainability of the land. They just want to make all the money they can out of the river without looking to the future.		
Sustainable use	Priorities for the use of water resources must be sustainable in the long term.		
Integrated management	An integrated approach to management looks at land, water and human activities in a catchment area as a whole. It is characterised by:		
	 Managing resources (e.g. water) as part of larger, complex ecosystems 		
	 Recognising the relationship and interdependence of resources such as groundwater and surface water 		
	 Co-operation, co-ordination and consistency between agencies in carrying out management responsibilities 		
	 Integration of economic, social, ecological and cultural factors that relate to use, development and protection of environmental resources 		
	 Consideration of long term and cumulative impacts of management decisions. 		

5.4 Further outcomes for the catchment

In addition to specific outcomes related to flow management, water abstractions and water quality, Te Rūnanga o Kaikōura identified another outcome for the Waiau River catchment; one involving Mata Kopae, or St. Anne's Lagoon.

The lagoon/wetland is connected to Waiau River hydraulically, but also culturally. As described in section 2, Mata Kopae was an important mahinga kai source, and still holds strong cultural and spiritual associations for Ngāti Kuri. Te Rūnanga o Kaikoura would like to work towards finding ways to restore and recognise Mata Kopae as part of the Ngāi Tahu landscape. This involves:

- As part of recognising the connection to, and importance of, Mata Kopae to the Waiau River catchment, Te Rūnanga o Kaikōura would like to see the name St. Anne's Lagoon changed to Mata Kopae and St. Anne's Lagoon, recognising the importance of the place to both Ngāi Tahu and Pakeha. Using the Ngāi Tahu name is part of respecting the history and traditions associated with the place.
- Exploring options of establishing a joint effort between tangata whenua and the wider community to manage Mata Kopae as a freshwater taiapure.

A taiapure identifies an area that has customarily been of special significance to an iwi or hapu as a source of food or for spiritual or cultural reasons. As an area management tool, taiapure makes provision for a management committee to be established, and can work to build and enhance community relationships.

6 **Conclusions**

Maori perspectives on land and water can be distinct from those of the Pakeha. They are of increasing influence on the way all New Zealanders view their environment. The spiritual significance of place and the interconnectedness of people and land are increasingly strong influences on our perception of place. The significance that Maori give to rivers, adds depth and meaning to the river landscape.¹⁴

This report provides a general overview of resources and values of importance to Ngāti Kuri in the Waiau River catchment, and of tangata whenua perspectives on flow management and water quality. The information is intended to assist Environment Canterbury in developing a management plan for the Waiau River.

Te Rūnanga o Kaikōura supports and encourages river catchment management plans. Each river has its own distinctive environment – with unique spiritual, historical, cultural, physical and ecological values. Land use patterns and thus water requirements vary between different river catchments, and thus management tools and processes will need to respond in different ways. For these reasons, Te Rūnanga o Kaikōura supports Environment Canterbury in developing individual river management plans.

Kaitiaki Rūnanga contributions to freshwater management are found in the intergenerational knowledge held by tangata whenua; knowledge of how the relationship between rivers and humans should be, the respect we should have for rivers, and the values that should be protected. Values and principles such a mauri, kaitiakitanga, *ki uta ki tai*, and *mo tatou*, *a*, *mo ka uri a muri ake hei* (for us and our children after us) can and are helping to facilitate a more holistic view of management rights and responsibilities.

The Waiau River is a taonga – a treasure of the people handed down by the ancestors for the generations that follow, to provide for and sustain life. As with those that came before, it is the responsibility of the present generation, the kaitiaki, to ensure that such resources are protected, so that they remain for future generations. The values, issues and outcomes described in this report reflect this responsibility; for Ngāti Kuri, and for all other land and river users today.

¹⁴ Flow Guidelines for instream values. Ministry for the Environment May 1998

7 Glossary

Ara tawhito	Trails
Ara tawhito ki pounamu	Pounamu (Greenstone) trails
Hapū	Sub-tribe
lwi	Tribe
lwi authority	The authority that represents an iwi
Kai awa	Food sourced from rivers
Kai moana	Seafood
Kai roto	Food sourced from lakes
Kaitiaki	lwi, hapu or whanau group with the responsibilities of kaitiakitanga
Kaitiakitanga	The exercise of guardianship
Ki uta ki tai	From mountains to the sea
Kō iwi tangata	Human bones
Mahinga kai	Food and other resources and the areas they are sourced from
Mana	Respect, dignity, influence
Manawhenua	Traditional status, rights and responsibilities of hapu in their traditional territories
Manu	Birds
Maunga	Mountain
Mauri	The essential life force of all things
Ngāi Tahu	An iwi of the South Island
Ngāi Tahu Whänui	The wider tribal membership base
Ngāti Kuri	Hapū of Ngāi Tahu
Ngā wai	Water
Nohoanga	Seasonal occupation sites
Pā	Fortified settlement site
Papatūānuku	Mother earth
Repo raupō	Wetlands
Repo wai	Coastal wetland
Takiwā	Area or region
Taiapure	Area management tool for managing areas that hold customary significance for an iwi or hapu in terms
Tangata whenua	The iwi or hapu that holds manawhenua over an area
Taonga	Treasured possessions, valued resources, both tangible and intangible
Tauranga waka	Canoe landing site in coastal areas
Te Tai Poutini	West coast
Tikanga	Customary values and practices

Urupā	Burial site
Wāhi ingoa / ingoa tawhito	Place names
Wāhi pakanga	Places where historical battles took place
Wāhi taonga	All things that are treasured and valued
Wāhi tapu	Places of sacredness and immense importance
Waipuna	Freshwater spring
Whakapapa	Genealogy, cultural identity

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