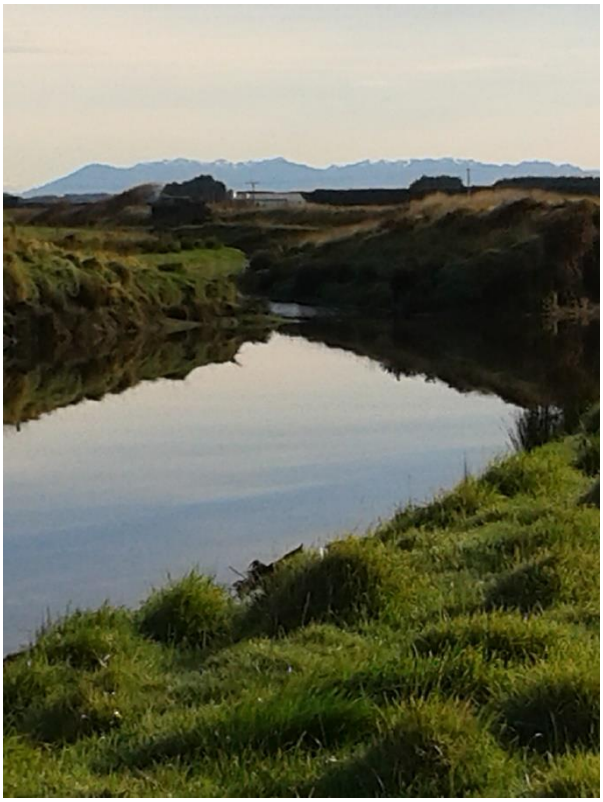
July 2014

MAKAREWA RIVER CULTURAL VALUES REPORT

For the Alliance Group Limited (AGL) Lorneville 2015 Reconsenting Project Plan



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Executive Summary

Alliance Group Limited (AGL) are undertaking a significant project in order to renew and secure the resource consents required for the operation of their Lorneville processing plant. As part of the information gathering for this reconsenting project AGL have asked Te Ao Marama Incorporated to produce a Cultural Values Report to help assess Ngāi Tahu ki Murihiku values within the Makarewa and lower Oreti catchment, with particular regard to AGL's wastewater discharge to the Makarewa River. This report is to aid consultation with the three kaitiaki rūnanga on the potential preferred reconsenting upgrade options.

This report has identified the following values of importance that need to be considered as part of the AGL Lorneville 2015 Reconsenting Project:

1. Ki Uta Ki Tai: The need to consider the effects of the project from ki uta ki tai (from the mountains to the sea), and that activities at the lower part of the catchment can impact on the cultural values of those further up the catchment.
2. Mahinga kai is central to Ngāi Tahu wellbeing and identity.
3. The rich cultural landscape of the Makarewa and Lower Oreti catchment. These include some of the oldest settlements in New Zealand (adjacent to the NRE estuary), the cultural stories of the travels of Tamatea and his waka Takitimu, the number and significance of wāhi tapu and archaeological sites; the large amount of Māori Land, and the mahinga kai resources of this area.
4. The kaitiaki responsibility of tangata whenua to continue to protect cultural associations and values. These values are also protected via numerous legal mechanisms.

The following particular points need to be considered for the AGL's Lorneville human waste water management:

- The need to separate human waste from food gathering areas.
- Food gathering occurs in the area downstream and upstream of the area (mahinga kai can move in and through the discharge area). Whitebaiting is significant in this area.
- The adverse effects of human waste discharge on wāhi tapu/archaeological sites near and downstream of this area.
- The expectation set up in the Iwi Management Plan that waste water disposal practice will improve over time and with improved technology.

The following particular points need to be considered for the management of the level of ammonia in the plant's waste water discharge:

- Waikakahi (freshwater mussels) are a taonga mahinga kai species.
- Waikakahi were numerous within the Makarewa Catchment.
- Waikakahi are sensitive to ammonia poisoning, with juveniles (in particular the larvae/glochida) especially vulnerable.
- The likely impact of AGL's discharge on Waikakahi.
- The migration and movement pathways of larval and juvenile waikakahi (potentially through discharge area).
- The potential effects of ammonia on other taonga fisheries (eg paraki/smelt and kōkopu).
- The expectation of restoration of mahinga kai outlined in the Iwi Management Plan.
- Waikakahi are declining and protection is important.
- Potential research/study to survey Waikakahi in the Makarewa and Lower Oreti River, and looking at restoration opportunities of mahinga kai.

Figure 1: Makarewa River, by Burton Brothers, Dunedin, maker unknown. Te Papa (C.024987)

Introduction

Alliance Group Limited (AGL) are undertaking a significant project in order to renew and secure the resource consents required for the operation of its Lorneville processing. As part of this reconsenting project AGL have asked Te Ao Marama Incorporated to prepare a cultural values report to help assess Ngai Tahu ki Murihiku values within the Makarewa and lower Oreti Rivers that are affected or potentially affected by the plant activities, with particular regard to their wastewater discharge to the Makarewa River. This report will assist in the subsequent consultation with kaitiaki rūnanga on potential preferred reconsenting upgrade options.

Alliance Group Limited Lorneville 2015 Reconsenting Project

The Alliance Group Limited (Alliance) operates a meat processing and export plant at Lorneville about 7 km north of Invercargill (Figure 4). The Lorneville plant accounts for about half of Alliance's total meat processing and is New Zealand's largest sheepmeat processing plant in New Zealand.[1] Almost 2,000 people are employed at Lorneville during peak production.

At Lorneville a new $25 million rendering plant produces meat meal for petfood manufacturers and for animal feeds, as well as tallow for use in a range of products from cosmetics to biofuels. In the rendering of these product Lornveville processes raw material from Alliance's Lorneville, Mataura and Makarewa processing plants,and in doing so Alliance has reduced its costs and improved production and energy efficiency. [2]

The Lorneville plant holds thirteen existing resource consents, including the key wastewater discharge and air discharge consents which are due to expire on 7 August 2016.

An application for consent renewal needs to be lodged with Environment Southland (ES) and Invercargill City Council (ICC) by 7 February 2016 in order for Alliance to continue to operate under its existing consents while the applications are processed. Alliance has decided that they wish to have their renewal applications ready to lodge by 30 November 2015.

The permits requiring renewal are:

- discharge treated wastewater to Makarewa River (ES)
- discharge contaminants to air (ES)
- discharge treated wastewater to land (ES)

The current ICC land use consent for irrigation does not have an expiry date. However if the activity changes, then a renewed consent will be required.

Two additional consents are associated with the discharge of treated wastewater:

- discharge treated wastewater to land – short term storage (ES)
- operate a dam for temporary storage of wastewater (ICC).

As Alliance progresses their application for consent renewal a decision will be made as to whether to renew or surrender these consents.

Alliance also holds three permits associated with water abstraction from the Oreti and Makarewa Rivers. These permits are:

[1] http://meatexportnz.co.nz/tag/lorneville/ accessed online 30/06/2014

[2] http://www.newstalkzb.co.nz/auckland/news/nbnat/877970400-second-stage-of-alliance-s-lorneville-plant-complete accessed online 30/06/2014

- to take surface water from the Oreti River (ES)
- to undertake general maintenance on an intake channel in the Oreti River (ES)
- to take surface water from the Makarewa River (ES)

These consents do not expire until 2027. However to ensure consistency with its consents and ensure the long term security for the Plant, Alliance intends to seek renewal of its permits to take water from the Oreti River and to maintain the intake channel. A decision will be made later as to whether to renew or surrender the permit to take water from the Makarewa.

A comprehensive technical assessment, consultation programme and consideration of proposed mitigation options are being undertaken for the application process.

Figure 2: Waste water anaerobic pond (first part of the waste water treatment)

Figure 3: Aerated pond

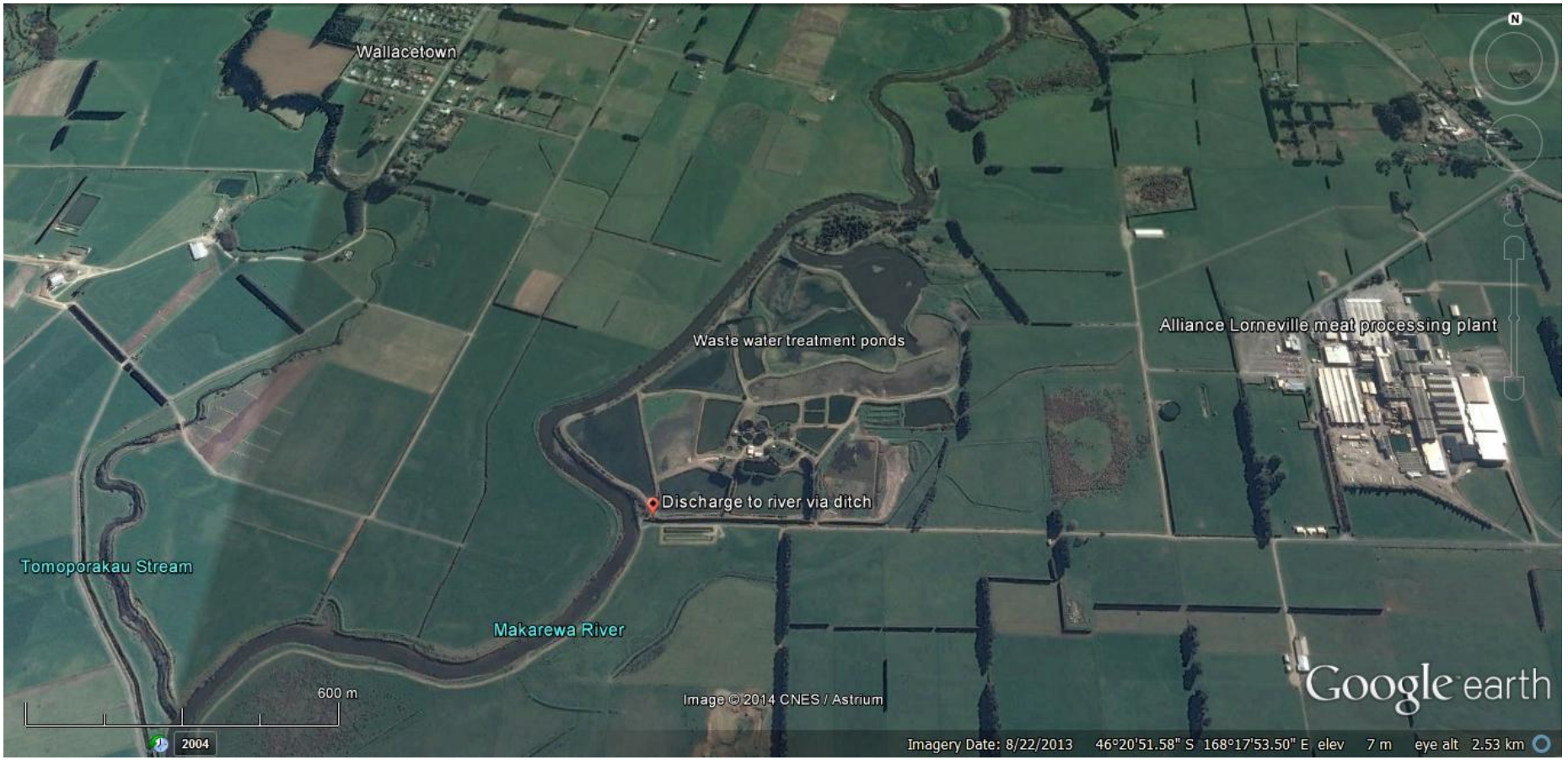

Figure 4: Alliance Group Limited Lorneville Plant and waste water treatment ponds.

Makarewa and Lower Oreti Catchments

The Makarewa River begins in the Hokonui Hills and flows for approximately 60km from before joining the Oreti River just north Invercargill. Its upper catchment consists of native forest and tussock pastures. As it flows from the Hokonui Hills it is joined by the Lora Stream, Butlers Creek Otapiri, Hedgehope, Titipua and Tomoporakau Streams, with the Makarewa joining the Oreti River just over 16 km upstream from the New River Estuary.[3]The middle and lower end of catchment are dominated by pastoral farming (Figure 5) and water quality frequently falls below relevant standards. As a consequence, there can be prolific filamentous algae and cyanobacteria growth at times in the lower river.[4]

The middle to Lower catchments are highly modified. Extensive dredging and river shortening to improve drainage for adjoining farmland occurred between 1965- 1968 and shortened the river by 50 Miles (approx. 80.5 km). [5] In pre-human history the catchment used to be dominated by extensive wetlands (Figure 6).

New River Estuary is Southland's largest estuary and is considered to be in poor condition[6] with increasing eutrophication.[7] Recent reports indicate the nuisance macroalgal blooms have increased from <1% in 2001 to >13% in 2013 for the estuary as a whole.[8] In Daffodil Bay, the area of nuisance macroalgal cover (>50% cover) has increased 470% from 9 ha in 2001 to 43 ha in 2012. Seagrass (a highly valuable habitat) has declined dramatically in the estuary, 85% since 2001 within the Waihopai Arm, with a further 50% reduction between 2012 and 2013. [9]

[3] River lengths estimated on Google Earth.
[4] Heath, Wood, & Olsen 2010; http://www.lawa.org.nz/explore-data/southland-region/oreti-river/makarewa-river-at-wallacetown/
[5] MacIntosh 1979
[6] Environment Southland & Te Ao Marama Incorporated 2011
[7] Robertson & Stevens 2013; Stevens & Robertson 2013
[8] Stevens & Robertson 2013
[9] Stevens & Robertson 2013

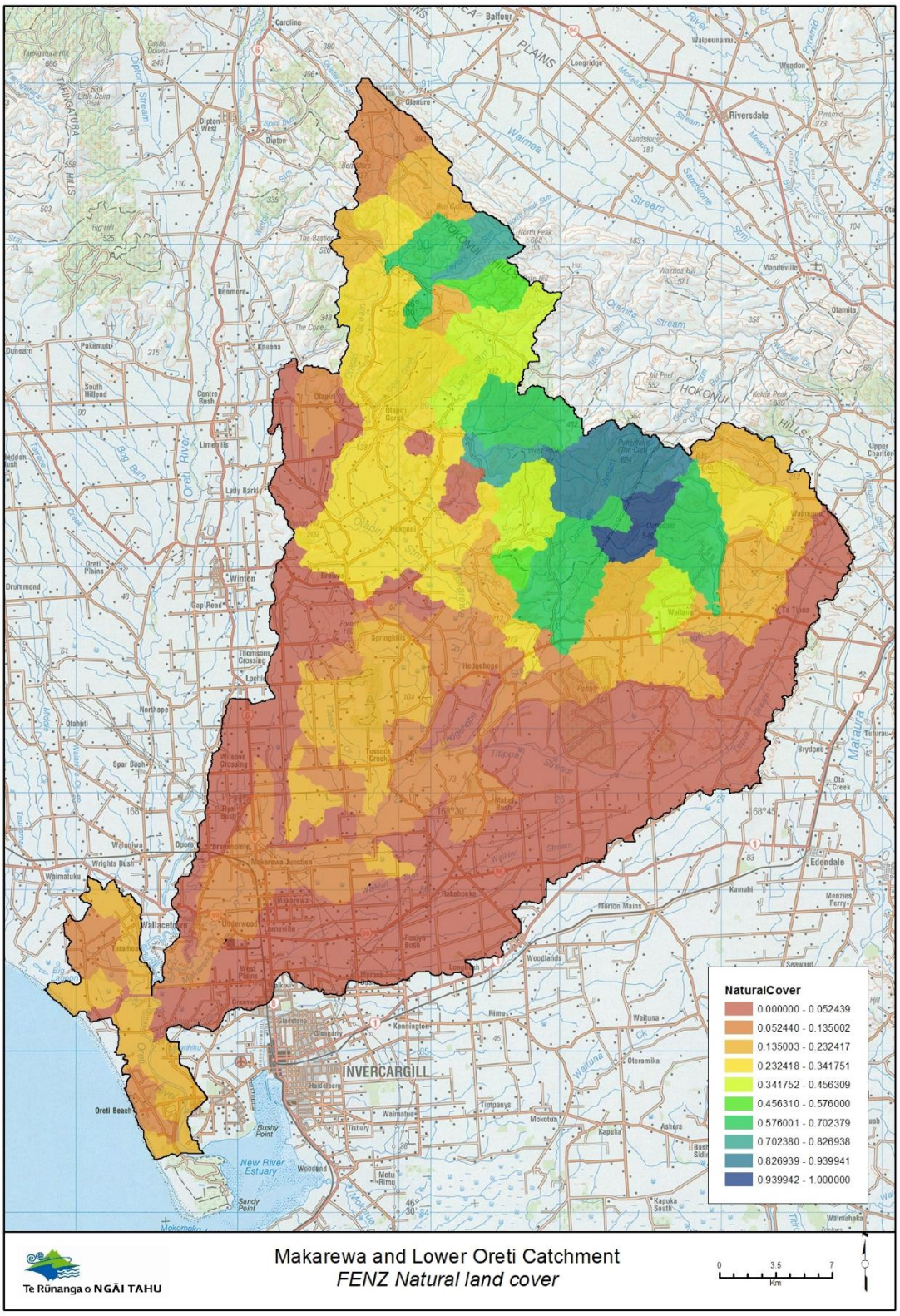

Figure 5: The proportional cover of native vegetation in the Makarewa and Lower Oreti Catchments (Source FENZ)

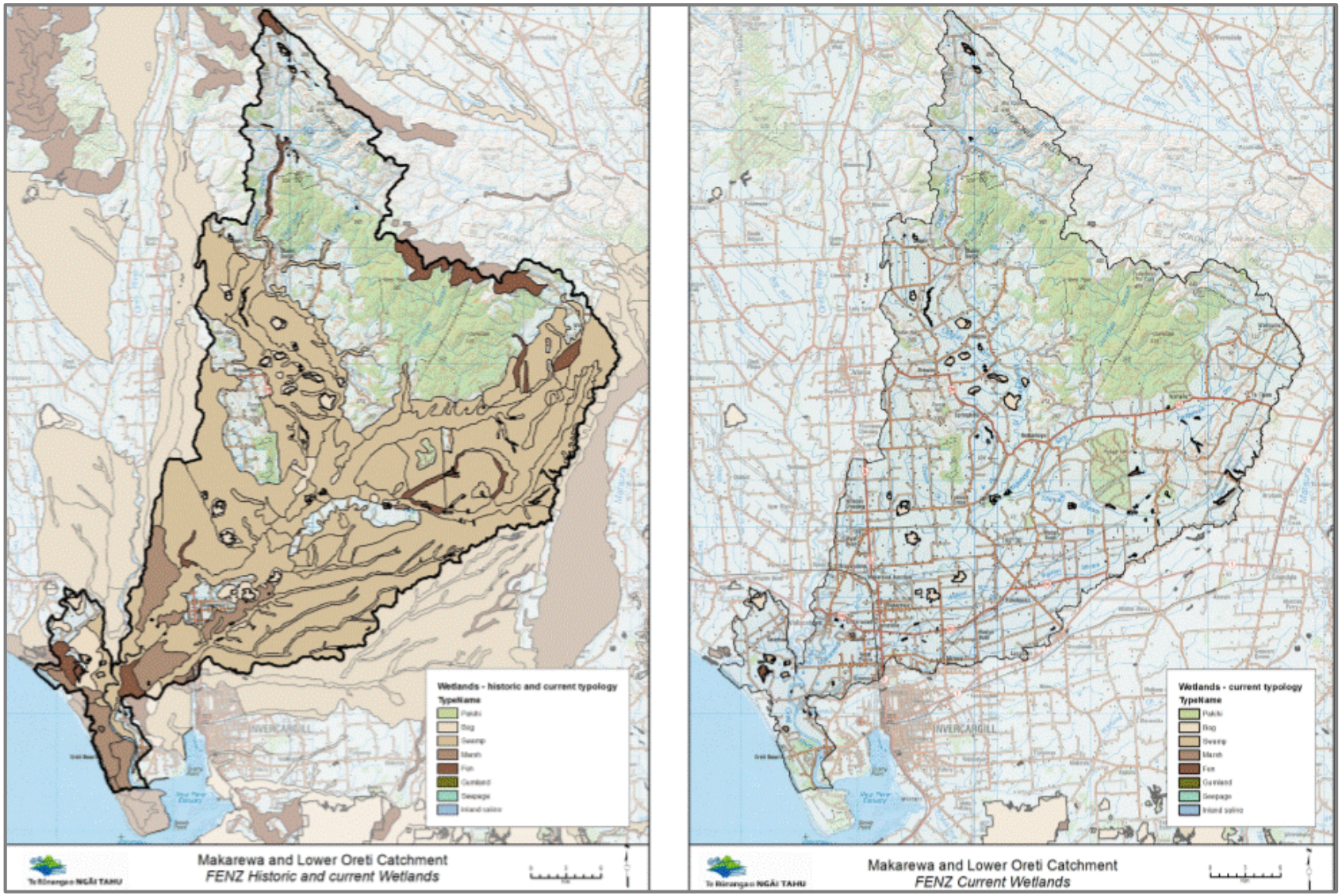

Figure 6: Pre-human wetland extend compared to current wetland extend (Source: FENZ)

Manawhenua

Te Rūnanga o Ngāi Tahu is the tribal representative body of Ngāi Tahu whānui, established under the Te Rūnanga o Ngāi Tahu Act 1996. There are 18 Rūnanga Papatipu that constitute the membership of Te Rūnanga o Ngāi Tahu. The Te Rūnanga o Ngāi Tahu Act and the Ngāi Tahu Claims Settlement Act 1998 give recognition of the status of Rūnanga Papatipu as the repositories of the kaitiaki and manawhenua status of Ngāi Tahu Whānui over the natural resources within their takiwā boundaries.

In Murihiku there are four Papatipu Rūnanga whose members hold manawhenua status within the region. Te Rūnanga o Ngāi Tahu Act 1996 describes the takiwa of these four as follows:

- Te Rūnaka o Waihōpai - centres on Waihōpai and extends northwards to Te Mata-au sharing an interest in the lakes and mountains to the western coast with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Awarua - centres on Awarua and extends to the coasts and estuaries adjoining Waihopai sharing an interest in the lakes and mountains between Whakatipu-Waitai and Tawhititarere with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Oraka Aparima - centres on Oraka and extends from Waimatuku to Tawhititarere sharing an interest in the lakes and mountains from Whakatipu-Waitai to Tawhititarere with other Murihiku Rūnanga and those located from Waihemo southwards.
- Te Rūnanga o Hokonui - centres on the Hokonui region and includes a shared interest in the lakes and mountains between Whakatipu-Waitai and Tawhitarere with other Murihiku Rūnanga and those located from Waihemo southwards.

The takiwā of three rūnanga (Hokonui, Waihōpai and Awarua) extend across the area encompassed by the Makarewa, Lower Oreti rivers and New River Estuary.

Ki Uta Ki Tai (From the mountains to the sea)

Ki Uta ki Tai is the Ngāi Tahu concept used to describe the overall approach to natural resource management. Ngāi Tahu understandings of the natural world are that all things are connected. Ki Uta ki Tai is about how the interlinkages and relationships of the natural environment, its processes, people and how it can be managed appropriately. It also emphasises the central importance of mahinga kai[10] and the role this plays in the traditional understanding and management of natural resources.[11] Within this framework or worldview, the overall health of a river can be affected by the deterioration at one point of its length i.e. what happens at one point of the Makarewa River can affect all parts of the catchment.

Ki uta ki tai is such a fundamental concept to Ngāi Tahu understandings of the world that it is also depicted in the logo of the tribal entity: Te Rūnanga o Ngāi Tahu (Figure 7).

Ki Uta ki Tai, with its foundations based on traditional values and understandings, has also evolved into a modern management framework that involves a number of tools, such as State of the Takiwā and cultural monitoring, natural resource plans, resource inventories, management and restoration of sites and mahinga kai practice and wananga (research and education).[12]

Figure 7: The logo of Te Rūnanga o Ngāi Tahu depicting Ki Uta ki Tai.

[10] Mahinga kai encompasses the resource harvested, the ability to access the resource, the site where gathering occurs, the act of gathering and using the resource, and the good health of the resource (Tipa 2011).
[11] Pauling 2003
[12] Pauling 2003

Report Scope:

This report documents Ngai Tahu ki Murihiku cultural values associated with the Makarewa catchment from its source to the sea. In doing so it will provide background information to help Alliance and their Project Technical Working Group better understand the Ngāi Tahu ki Murihiku values of the river and catchment. This report could contribute to a Cultural Impact Assessment (CIA) which is a mechanism to assess the potential impacts of proposed activities on cultural values.

Alliance Group Limited (AGL) Lorneville 2015 Reconsenting Project Team also asked for comment on the following issues that the project will need to consider:

1) Human waste management from the plant (discharge of human faecal matter to water).
2) The need to manage ammonia for Waikakahi (freshwater mussels) and other taonga species.

This report provides some context and information and aids the Kaitiaki Rūnanga Papatipu (via Te Ao Marama Inc) on these issues and may assist their further discussions on the AGL reconsenting project plan. However, this report simply provides background information and cannot be considered to represent any decisions by the Kaitiaki Rūnanga Papatipu (via Te Ao Marama Inc).

The Legal & Policy Context

As this report addresses cultural values, rather than the impact of the Alliance's current or future of activities, it is helpful to understand the broad legal and policy context for Ngāi Tahu ki Murihiku natural resource management. A cultural impact assessment would analyse the potential impact of an activity against legislation and national and local policy.

Various legislation, policies and agreements helps guide TAMI's policy development for resource management in Murihiku. These include responsibilities under the Local Government Act 2002, Resource Management Act 1991, Ngāi Tahu Claims Settlement Act 1998, Historic Places Act 1993, and RMA national directives such as the National Policy Statement for Freshwater Management, The Regional plans (including Water and Coastal) (See Figure 8). For the wider whānui/rūnanga additional documents also apply to the wider freshwater management context. These include the Biosecurity Act 1993, Conservation Act 1996, Conservation Management Strategies, Fisheries (South Island Customary Fishing) Regulations 1999, Fisheries Act 1996**,** Foreshore and Seabed Act 2004, Fiordland (Te Moana o Atawhenua) Marine Management Act 2005, Hazardous Substances and New Organisms Act 1996, Ngai Tahu (Pounamu Vesting) Act 1997, Māori Commercial Aquaculture Claims Settlement Act 2004, Reserves Act 1977, Te Ture Whenua Māori Act 1993, Whitebait Fishing Regulations 1994, and Wildlife Act 1953.

The Ngāi Tahu Claims Settlement Act 1998 is described further in this section because it assists the understanding of the cultural values within the Makarewa and lower Oreti catchments.

Ngāi Tahu Claims Settlement Act 1998

After years of negotiations, legislation was passed in 1998 that put into effect the terms and redress package agreed to by Ngāi Tahu and the Crown to mitigate and remedy breaches of the Treaty of Waitangi made by the Crown. The Ngāi Tahu Claims Settlement Act 1998 includes several mechanisms specifically designed to be used in implementing other legislation such as the Resource Management Act 1991 and Conservation Act 1987.
In summary the key elements of the Ngāi Tahu Settlement are:

- **Apology**: The Crown apologsies unreservely for the suffering and hardship caused to Ngāi Tahu;
- **Aoraki/Mount Cook**: gifting of Aoraki, co-management and renaming;
- **Cultural redress**: restoring effective kaitiakitanga;
- **Non-tribal redress:** providing a commitment to resolve claims by indiviuduls that were heard by the Waitangi tribunal. These private claims are completely separate from the collective Ngāi Tahu Claim, Te Kerēme.
- **Economic redress:** to provide finance and mechanisms to give Ngai Tahu the capacity to build tribal assests to generate funds for social and cultural development.

A significant component of the Ngāi Tahu Settlement is elements of cultural redress, which seek to restore the ability of Ngāi Tahu to give effect to its kaitiaki responsibilities. These include:

- Ownership and control: pounamu, high country stations, four specific sites incl Rarotoka/Centre Island, former Crown Tītī Islands and Wāhi Taonga;
- Mana recognition: Statutory Acknowledgements, Deeds of Recognition, Tōpuni, dual place names; Mahinga kai: Nohoanga, customary fisheries management, taonga species management, coastal space;

- Management Input: Statutory Advisor, dedicated memberships, Department of Conservation protocols, Resource Management Act implementation, and heritage protection review.

Nohoanga are seasonal or temporary campsites, established adjacent to lakes and rivers to facilitate customary fishing and the gathering of other natural resources. The nohoanga site on the Oreti River is at the confluence of the Irthing Stream. This site reinforces the contemporary importance of the river in terms of kaitiakitanga, culture and identity. Traditionally the Makarewa River would have had nohoanga this is evidenced by the number of archaeological sites and ovens found along its length (Figure 11).

Many of the waterways of Southland/Murihiku have specific cultural associations. Statutory Acknowledgement areas under the NTCS Act provide for the special association and mana recognition of Ngāi Tahu with these water ways (Rivers, Lakes and Coastal waters). The relevant Statutory Acknowledgements for the scope of this report are for the Oreti River (Schedule 50), and Rakiura/Te Ara a Kiwa (Rakiura/Foveaux Strait Coastal Marine Area (Schedule 104). (Appendix 1 and 2).

Under the Settlement Act, the Crown acknowledges the cultural, spiritual, historic, and traditional association of Ngāi Tahu with the taonga species (Appendix 3).

The customary fishery section of the Act lists 'Non-commercially harvested species'. These species are:

a) Kākahi/Koaru (Freshwater mussels – *Unio menziesi*)
b) Kanakana/Ute (Southern lamprey – *Geotria australis*)
c) Karengo (Karengo/Nori – *Porphyra columbina*)
d) Karengo (Sea lettuce – *Ulva* spp.)
e) Rimurapa (Bull kelp – *Durvillee* spp.)
f) Toheroa/Tuphokura (Toheroa – *Paphies ventricosum*)
g) Waikōura[13] (Freshwater crayfish – *Paranephrops* spp.)

[13] Also known as Kēwai

Regulatory and Iwi Context for Te Ao Marama

This diagram outlines the hierarchy of agreements, acts, policies, plans and values that help inform Te Ao Marama's policy development, views and expectations for resource management in Murihiku.

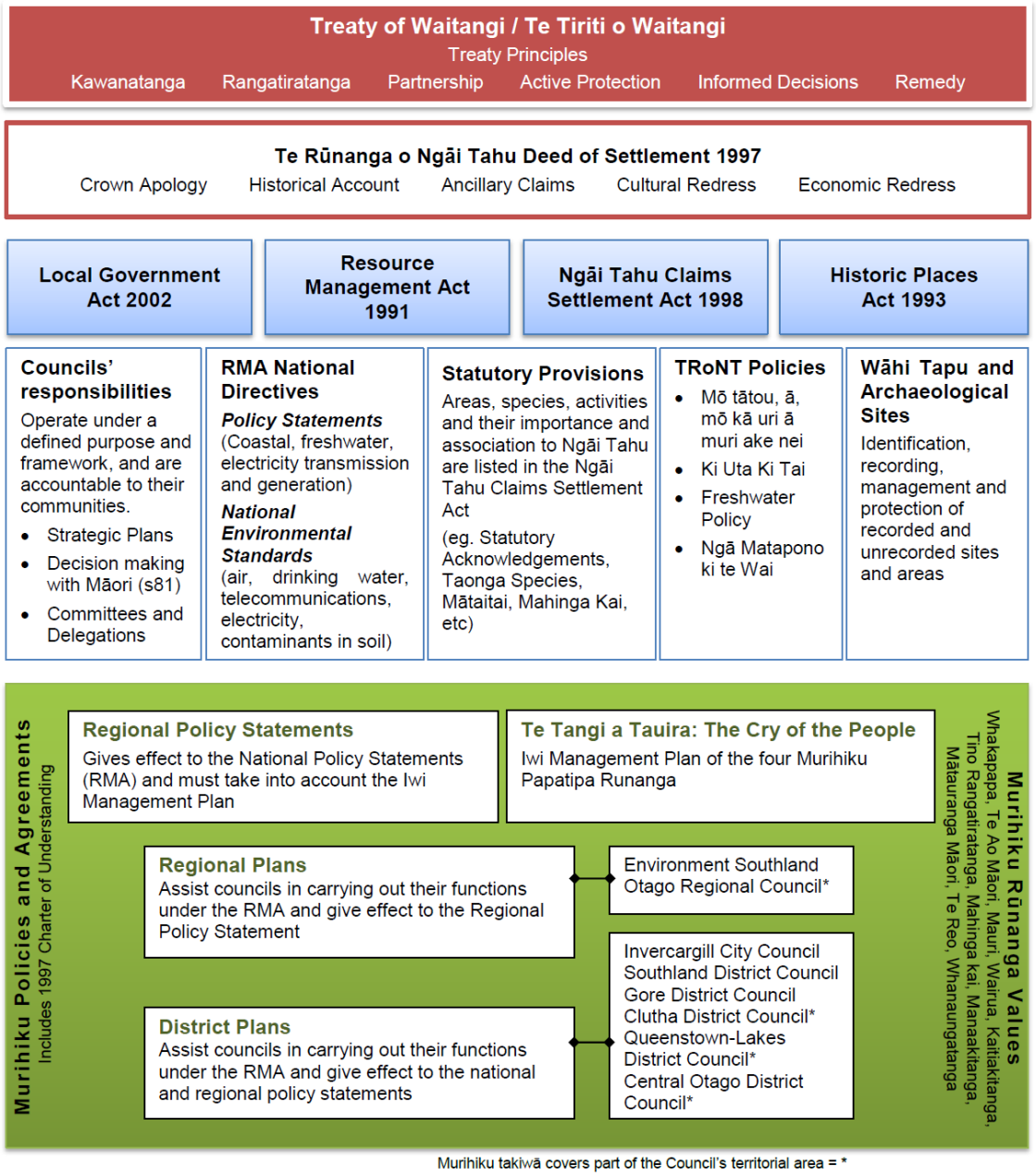

Figure 8: The regulatory framework that helps inform Te Ao Marama Incorporated policy development (incl Freshwater) in Murihiku. Note that there is other legislation outside of Te Ao Marama Incorporated's mandate, of RMA and LGA matters, that relates to freshwater management for Rūnanga/Ngāi Tahu whānui, including the relationship with the Department of Conservation and Ministry of Primary Industries.

Cultural values and uses of freshwater

In the traditional Māori worldview water is viewed as a taonga or treasure. It sustains life and is central to Māori life and wellbeing.[14]

Cultural use is often defined as the collection of plants, fish and other natural resources for cultural purposes. This also includes the activities relating to visiting or interacting with a place or landscape, such as campsites or settlements. However this definition is too narrow to express the numerous and diverse elements of cultural use and values associated with Murihiku waterways.

Both tangible and intangible aspects of water and waterways feature in all aspects of Ngāi Tahu culture. For example, waterways provide links between the spiritual world of tūpuna/ancestors and tangata whenua. They feature in stories, place names and waiata which consistently reflect symbolic and important messages. Each whānau has its own traditions associated with areas, the characteristics of which can vary greatly. Specific waterways can be valued and protected for particular cultural reasons eg Wāhi Tapu. Waterways provide a range of resources including food and cultural materials that sustain cultural functions. In some cases, specific resources (e.g. tuna/eels) serve as cultural symbols valued through a region, while others can be significant to specific groups (e.g. kanakana/lamprey at Te Ao Nui/Mataura Falls to the Hokonui rūnanga).

There are a number of Ngai Tahu whānui values and uses relating to the freshwater environment. Some core values are explained in Table 1.

Ngāi Tahu also share the use and values for a range of uses in common with other members and groups in our community, including:

- Domestic supply – for home and marae
- Stock water
- Fishing
- Swimming, boating and other recreational activities
- Agriculture and other economic developments.

Therefore Ngāi Tahu whanau values include both ‘out-of-stream’ and ‘in-stream’ values.

A key Ngāi Tahu resource management principle is the maintenance and enhancement of mauri or life force/life principle.[15] Promoting 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.[16] While there are many intangible elements associated with the mauri of a waterbody, there are elements of physical ecosystem health which Ngāi Tahu use to reflect the state of mauri. These include aesthetic qualities, e.g. natural character, indigenous flora and fauna; life supporting capacity and ecosystem robustness; the continuity of flow of water (of high quality) from the mountain source of a river to the sea; fitness for cultural usage; and productive capacity.

[14] Ngai Tahu ki Murihiku 2008; Te Rūnanga o Ngāi Tahu 1999
[15] Ngai Tahu ki Murihiku 2008; Te Rūnanga o Ngai Tahu 1999
[16] Tipa & Teirney 2003; Tipa 2010

Table 1: Core Ngāi Tahu whanui values and uses relating to the freshwater environment (from Environment Southland and Te Ao Marama Incorporated 2011 adapted from Tipa 2011)

Core Value	Description	Relationship to Cultural Use of freshwater environment
Whakapapa	Whakapapa (genealogy) is about the relationships of all life forms to each other as well as the atua (gods). Whakapapa describes bonds, relationships, and connections. All things are linked by whakapapa.	Water has its own whakapapa and Māori link to this whakapapa. Whakapapa is also central to passing on kai gathering knowledge through the generations.
Te Ao Māori	The environment is viewed as a whole – not as divided parts.	This holistic view of the freshwater environment requires consideration of the whole catchment. A catchment constitutes soils, water, flora, fauna and the relationships between them.
Mauri	Mauri is a central component of the Māori perspective on the environment. It can be defined as the life principle, life supporting capacity, or life force present in all things.	Protecting the mauri of a resource is the fundamental management principle for Māori. Māori treasure the mauri of freshwater and may experience cultural offence and distress when the mauri is degraded.
Wairua	Spiritual connection/wellbeing.	Ngāi Tahu, like other Māori, use different ways to feel spiritually connected with their takiwā. This spiritual connection can occur by gathering kai with whānau at a traditional fishing place that they know have been named by their tūpuna, and utilised by successive generations of their whānau; being able to contribute the kai that their takiwā is renowned for, to ceremonies. Being denied these opportunities can impact on spiritual wellbeing.
Kaitiakitanga	The exercise of guardianship by manawhenua of an area and resources in accordance to tikanga Māori (customs and rules).	Kaitiakitanga governs the way humans interact with the environment. The notions of sharing and maintaining balance with nature underpin cultural uses and practices. Balance requires respect to be shown when interacting with the environment; and use of the resource (within limits) afforded by healthy ecosystems. Māori continue to have a duty to protect the natural world.
Tino Rangatiratanga	Tino Rangatiratanga is the right to make decisions for your own people concerning the resources within your takiwā.	This means determining what, from a cultural perspective, represents satisfactory aquatic conditions and appropriate use.
Mahinga kai	Mahinga kai encompasses the resource harvested, the ability to access the resource, the site where gathering occurs, the act of gathering and using the resource, and the good health of the resource.	Mahinga kai is considered to be the principle 'environmental indicator' in natural systems. If mahinga kai is not present, or is unsafe to harvest, then, that natural system is under stress and requires remedial action. The state of freshwater is important as a medium for sustaining and accessing mahinga kai. Ideally streams will sustain healthy and diverse koiora/life.
Manaakitanga	The support, caring and hospitality shown to guests.	The ability to manaaki visitors by supplying kai sourced locally means that the activities of fishing,

Core Value	Description	Relationship to Cultural Use of freshwater environment
		eeling and gathering foods creates and maintains whānau and hapū ties and reinforces identity. Conversely the inability to manaaki guests and sustain whāungatanga can lead to cultural loss.
Mātauranga Māori	Māori knowledge.	Interacting with waterways serves the functions of passing on traditional knowledge from one generation to the next. Mātauranga Māori is developed and transmitted through the use of natural resources, such as the practices of food management, harvesting and preparation. E.g. if populations of fish decline, knowledge of the techniques of gathering these foods along with the associated ecological and cultural knowledge will likely also begin to disappear.
Te Reo	Language. Te Reo contains knowledge and is another expression of culture and identity.	Stories, waiata and Te Reo that pertain to particular uses, and these uses sustain the culture. When a valued species disappears from a local ecosystem or the activities associated with a species decrease, the associated Te Reo drops away.
Whānaungatanga	The interrelationship of Māori with their ancestors, their whānau, hapū and iwi as well as the natural resources within their tribal boundaries. This genealogical relationship is one of the foundations upon which the Māori culture is based.	Sustainable management seeks to sustain the health, wealth and well-being of the natural environment while sustaining communities dependent upon it. In a catchment it is water that makes and maintains connections between different waterbodies and entities within a catchment.

The Cultural Landscape of the Makarewa Catchment and Lower Oreti Catchment

> *Our tūpuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, and ways in which to use the resources of the rivers, estuaries, coastal wetlands, lakes, coasts and lands of Murihiku. While the last 170 years have resulted in significant changes to our waterways and wider natural and cultural landscapes their importance to us has not diminished.*
>
> *Michael Skerrett, Evidence for the Proposed Plan Change 13 (New dairy farming) for the Regional Water Plan for Southland 2010*

Cultural landscapes represent the "combined works of nature and of man" and the term embraces a diversity of manifestations of the interaction between humankind and the natural environment. Cultural landscapes often reflect specific techniques of sustainable land-use, considering the characteristics and limits of the natural environment they are established in, and a specific spiritual relation to nature.[17]
The following section illustrates some of the Ngāi Tahu ki Murihiku cultural landscape of the Makarewa Catchment – ki uta ki tai.

Wāhi Ingoa: Place names

As Ngāi Tahu moved throughout Te Wai Pounamu their presence was preserved in the naming of places. Names within the Makarewa Catchment reinforce our connections to Ngāi Tahu creation traditions, tūpuna, incidents, and mahinga kai resources.

The New Zealand Geographic Board attributes the meaning of **Makarewa** to raised/flooded stream. [18]

Note that names in bold are shown in Figure 9.

Maunga/Puke: Mountains/Hills

Whaka-omo**[19]** (Ships Cone/ Ōtaupiri).

Taiparapara**[20]** **or Taipupuru**[21] (Dunsdale Hill)

Pukemaire[22] (West Peak). This was translated by Roberts (1913) as the “hill where the Maire tree grows”. Beattie (1994) described the hardwood Maire as being used for the manufacture of weaponry, combs and digging implements by Māori.

Orokoroko[23] (Heale Ridge): This name is part of the story of the Takitimu waka. Orokoroko is the name of one of the waves that was transformed into a ridge.[24]

[17] World Heritage Centre 2013
[18] New Zealand Geographic Board 1995
[19] Roberts 1913; Symon & Harris, 2002
[20] Roberts 1913
[21] Beattie 1931 referred to this as Dunsdale Hill
[22] Beattie 1931; Roberts 1913
[23] Beattie 1931
[24] Beattie 1931

Te Ihupuni[25] (Forest Hill), or O-te-Wao**,** which is named after one of the waves from the Takitimu tradition[26]. Beattie also refers to Forest Hill as Makakaiwaho[27] and being named after a chief that was buried up there.

Turaka rākau or Opani (Sharks Tooth).

Rakiahua[28]: Hedgehope Hill

Awa

Tataramoatahi (Dunsdale Stream)[29] refers to Tataramoa or bush lawyer.

Tatakura (Hedgehope Stream) Beattie's informant described this as the ancient name for a kind of bird from the duck family.[30]

Ti Tipua: the name may refer to a shining flower which grew near the stream[31] or to cabbage trees that grew in the swamps of the valley.[32] However the creek also could have been wrongly spelt, and could potentially be Te Tipua (as in the nearby locality) with the meaning relating to a taniwha.[33]

Other placenames

Te Nohoaka-o-paroparo-te-whenua (Waimumu Gorge) Translated by Beattie as "the camp of chief Paroparo-te-whenua" (a Waitaha /Kati Mamoe chief).[34]

Landscape linkages to the Takitimu waka

This cultural landscape also has linkages with the ancestral Takitimu waka (canoe) and the great explorer Tamatea.[35] Tamatea explored throughout New Zealand from the far north to Southland, and there are names all along the full length of the country that document his travels.[36]

There are several versions of the story relating to the sinking of this waka, one of which relates to the Makarewa area. The Takitimu was wrecked in Te Waewae Bay by three waves, Orokoroko, O-te-Wao and Okaka[37]. The first two waves can give their names to ridges in the Makarewa catchment (Heale Ridge and Forest Hill, respectively).

In different accounts of this story the Hokonui Hills are thought to represent the jetsam and flotsam of the Takitimu wreck or some place them as the bailers.[38] The Waimea Plain was called Ka-ra-o-Takitimu (the sails of Takitimu).[39]

The Takitimu Mountains are named after this waka, and by some traditions are thought to be the waka itself turned to stone.

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[25] Beattie Maps 1700-1840 MapColl-834.6ee/[pre-1840]/Acc.1976-81
[26] Beattie 2004
[27] Beattie 2004
[28] Beattie 1931
[29] Symon & Harris 2002 citing Beattie 1954
[30] Symon & Harris 2002
[31] Roberts 1913
[32] Buckingham 1983
[33] D. Whaanga pers comm
[34] Symon & Harris 2002
[35] Tamatea-Ure-Haea (also known as Tamatea Pōkai Whenua, the explorer of land and Tamatea Pōkai Moana the explorer of oceans) (Garven et al. 1997; New Zealand Geographic Board, 1990)
[36] New Zealand Geographic Board, 1990
[37] Hump Ridge.
[38] Herries Beattie 2004; New Zealand Geographic Board 1990
[39] Beattie 1931; Beattie, 2004

Tamatea camped near where Mandeville and the nearby stream was named after him O-tamatea (now Otamita Stream).

Figure 9: Some selected place names relevant to the Makarewa and Lower Oreti Catchment

Archaeological and Wāhi Tapu

There are a number of archaeological sites in the Makarewa and lower Oreti catchments (Figure 11).

Within the Otaupiri and Butlers Creeks area, there are ovens, which suggest a fowling and eeling mahinga kai culture. There are also several burial sites.

There are a number of taonga found in the Makarewa catchment that are stored at the Southland Museum and Art Gallery (See Appendix 4). The artefacts that exist in the Southland Museum are probably only a small fraction of what has been discovered in this area, with many potentially in personal collections or in other museums.[40]

There was a pā at Otaupiri. This was the pā of Tutemakohu, a Kati Mamoe chief.[41] This Pa was at a strategic vantage point, with views of the Waimea Plains, Dipton flats, upper reaches and flats of the Otapiri stream.[42] Unfortunately this view didn't get Tutemakohu and his people much advance notice of a Kai Tahu raiding party from Kaiapo. Tutemakohu and his people fled north, and were caught up and a battle ensued at Oswald Stream/Waitaramea.[43]Many of his people were killed, but it is said that Tutemakohu himself escaped.[44]

Omaui/Oue and Mokomoko, adjacent to the New River Estuary, are considered some of the oldest sites of Māori settlement in New Zealand, and date back to 800AD.[45]

Sacred stones & signal fires

Waimumu Gorge was a place of worship, with large sacred stones, where tohunga went. Sacred fires were lit (ahi-tapu) on the way to the area. [46]

Signal fires from Otaupiri Pa would likely have been used to communicate with the settlements in Tuturau, Oraka, Bluff, and Fortrose.[47]

Figure 10: Waimumu karakia kohatu/ sacred stones (Source Hocken library, Jessie Beattie c/n E3909/34)

[40] D. Whaanga pers. comm.
[41] Cormack & Orwin 1997; Milligan 1977
[42] Milligan 1977
[43] Cormack & Orwin 1997
[44] Milligan 1977
[45] Ngai Tahu ki Murihiku 2008
[46] Herries Beattie 1931; Herries Beattie 2004
[47] D. Whaanga pers. comm.

Figure 11: Known Māori archaeological sites (Source NZAA)

Māori Lands

Within the Makarewa and Lower Oreti catchments there is a number of Māori Land Blocks, including the Waimumu Hundred, Forest Hill Hundred, Lindhurst Hundred, Hokonui Survey District, Cambelltown Hundred and the Omaui Block (Figure 12). The amount of land within this one small area is considerable when compared to the rest of Southland (Figure 12).

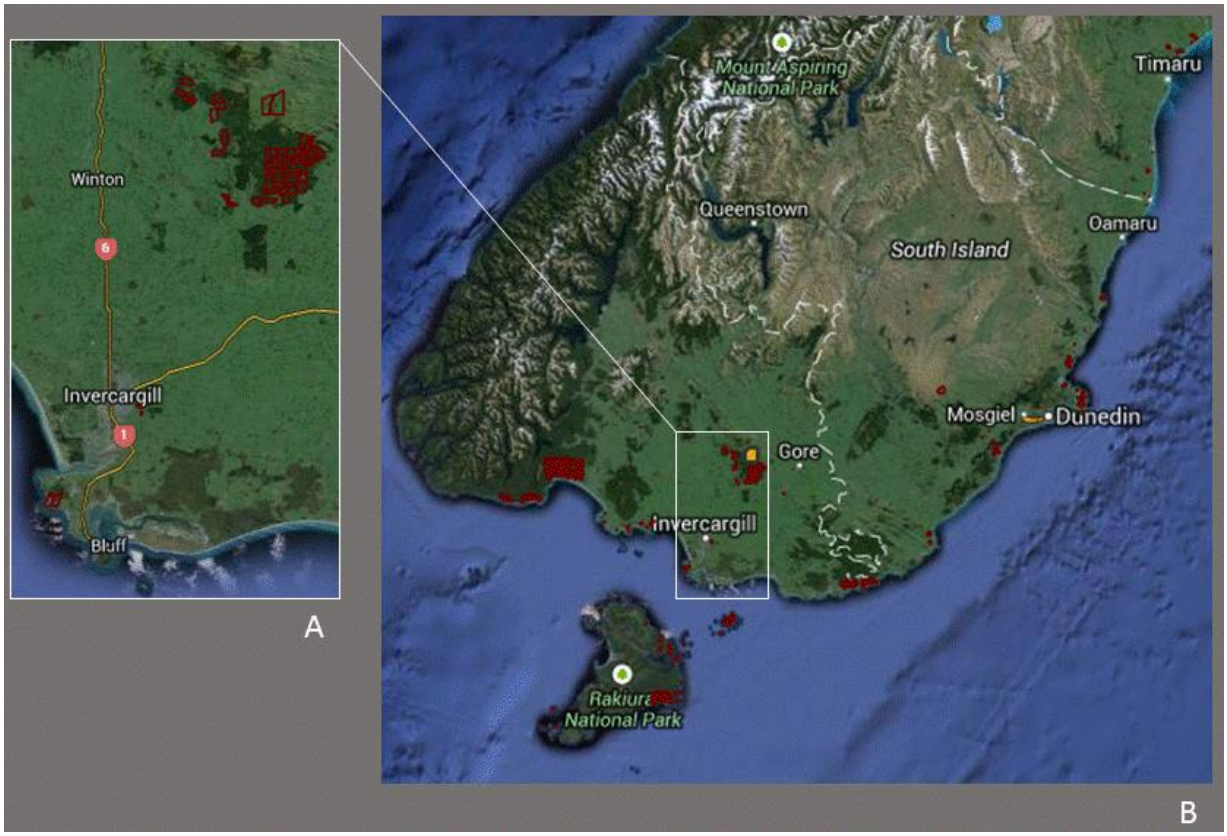

Figure 12: Māori land (in red) in the Makarewa and lower Oreti Catchment (A) and in the Southern South Island. (Source: Landcare Research Māori Land Visualisation Tool[48])

[48] http://www.landcareresearch.co.nz/resources/maps-satellites/maori-land-visualisation-tool

Mahinga kai

Mahinga kai encompasses the resource harvested, the ability to access the resource, the site where gathering occurs, the act of gathering and using the resource, and the good health of the resource.

Mahinga kai is central to the Ngāi Tahu way of life and cultural wellbeing.[49] Mahinga kai binds whānau, hapū and community together, providing a sense of identity that also serves as the vehicle for the transmission of values and knowledge.

Mahinga kai, its importance and its loss, was a major component of the Ngāi Tahu claim negotiations with the Crown (one of the 'Nine Tall Trees of Ngāi Tahu'). It has been described as one of the most emotionally charged elements of the grievance; as a crucial component to the tribal economy and social fabric of tribal and intertribal life. [50]

There were rich and varied mahinga kai resources within the Makarewa and lower Oreti Catchment. These resources included:

- Manu/birds: such as weka and ducks. Moa bones have been found around Dipton. [51]

"In the centre of the Hokanuis is a celebrated woodhen resort called Mikioe…" Beattie (1931)

- Rakau/wood, harakeke and rongoa (medicine plants)
- Freshwater mahinga kai includes a wide variety of species, for example: Tuna (eel), Kōkopu, Koaro, Waikoura, Paraki/Smelt, Waikakahi (freshwater mussels), Inanga, Kanakana (lamprey), and watercress. Estuarine mahinga kai would include tuaki (cockles) and Pātiki (flounders).

Fisheries known to be in the Makarewa Catchment are: longfin and shortfin eels, brown trout, bullies (including common bully), inanga,[52] koaro, koura, kanakana/lamprey[53] and waikakahi.[54] Whitebaiting for the juveniles of the galaxiid species is very common on the Makarewa and lower Oreti during the whitebaiting season (15 August to 30 November).

[49] Ngai Tahu ki Murihiku 2008; Tipa 2011;
[50] O'Regan 1989
[51] Milligan 1977
[52] NZFFDB, Kitson pers. obs.
[53] Kitson unpublished data and pers. comm.; Ledington 2008; NZFFDB
[54] Peter & Mark Sutton pers. comm.

AGL reconsenting Issue 1: Considerations for the plant's human waste water management.

"Because of the sacred nature and pragmatic importance of water, specific practices and restrictions are enforced. For example, it is unacceptable to discharge sewerage into waterways where food is collected" (Garven, Nepia, & Ashwell, 1997)

AGL currently discharges waste water (including human effluenct from the plant and Wallacetown) to the Makarewa, and has asked for tangata whenua considerations on such discharges for the reconsenting process. This section compiles information from relevant Ngāi Tahu whānui reports and documents.

The disposal of waste and the treatment and disposal of human effluent and waste water to water is of major concern to Ngāi Tahu.[55] Particular issues relate to the resultant physical and spiritual contaminantion of the water way, including the need to protect mahinga kai and wāhi tapu[56] and other cultural and physical contaminantion.[57]

> *Our bottom line is to avoid discharge of wastewater (e.g. sewage and stormwater) to water, as such activities have adverse effects on cultural values such as mauri, wairua, mahinga kai and wāhi tapu. Our preference is for wastewater to be treated to remove contaminants, and then discharged to land via wetlands and riparian areas, to allow Papatūānuku to provide a natural filter for waste. Where this is not practical or feasible, and discharge to water is proposed, then adverse effects must be mitigated through treatment to a very high standard and robust monitoring programs. Ngāi Tahu ki Murihiku will always look for the most culturally, environmentally, socially and economically appropriate option for a particular site.* (Ngāi Tahu ki Murihiku, 2008)

There is a strong need for Ngāi Tahu whānui to maintain a separation between the human food chain and human waste streams.[58] There is a strong preference for effluent to be treated by a land-based solution, to filter and cleanse contaminants. Even if a discharge to water is treated, it can still be culturally unacceptable.[59] Pauling & Ataria (2010) in their study of Ngāi Tahu values and issues regarding waste, report a high degree of disapproval of the disposal of treated effluent into freshwater by survey respondents (87%).

There are policies on Waste Water Disposal within Te Tangi a Tauira: Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan. These can be found in Appendix 5. It is important to note that these policies are pragmatic in their approach, with assessment criteria provided and the need for proposed effluent discharges to be assessed on a case by case basis by

[55] Pauling & Ataria 2010
[56] Garven, Nepia, & Ashwell 1997; Ngai Tahu ki Murihiku 2008; Pauling & Ataria 2010; Environment Southland & Te Ao Marama Inc 2010
[57] Ngai Tahu ki Murihiku 2008
[58] Pauling & Ataria 2010
[59] Ngai Tahu ki Murihiku 2008

kaitiaki rūnanga. These policies also identify the expectation that practice will be improved if technology exists.

Key points that AGL may need to consider:

- The need to separate human waste from food gathering areas.
- Food gathering occurs in the area downstream and upstream of the area (mahinga kai can move in and through the discharge area). Whitebaiting is significant in this area.
- The adverse effects of human waste discharge on wāhi tapu/archaeological sites near and downstream of this area.
- The expectation outlined in the Iwi Management Plan that waste water disposal practice will improve over time and with improved technology.

AGL reconsenting Issue 2: Considerations for level of ammonia discharges to water and the need to manage for Waikakahi and other taonga species.

"All Ngāi Tahu Whānui, current and future generations, must have the capacity to access, use and protect native fisheries, and the history and traditions that are part of customary use of such fisheries, as guaranteed by the Treaty of Waitangi."(Ngāi Tahu ki Murihiku, 2008, p. 168)

Waikakahi[60] (freshwater mussels) are an important mahinga kai species.[61] As filter feeders they also have potential to enhance water quality.[62]

Freshwater mussels are one of the most threatened taxa in the world.[63] In the latest threat classifications the most abundant of the NZ freshwater mussel species *Echyridella menziesii*[64] has been classed as at risk and declining.[65]

Freshwater mussels have a complicated and poorly understood life cycle, that involves a parasitic larval stage which is reliant on a host fish. Mussels have separate sexes, with the eggs of the females laid into the space above her gills which are fertilised by sperm released into the open water by the male and then drawn into the female. Spawning is thought to occur in summer[66], though an unpublished study in Lake Taupo in 1993/94 documented spawning to commence in late winter (August) and continued until late summer (February). Larvae are brooded in the mantle cavity of the female and released in spring[67]. The larvae attach themselves to the pectoral fins, head and mouth of various fish, including Koaro, Giant Bully, Common Bully, and Longfin and Shortfin eels.[68] The larvae drop off later to develop further. It is possible that juvenile mussels have different habitat requirements and migrate to adult habitats as they develop.[69] There is little information on the larval and juvenile stages of freshwater mussels (Figure 13).

Adults are long-lived (>50 years) therefore apparently 'healthy' adult populations may not indicate self-sustaining populations. A number of studies have found it difficult to find juvenile mussels[70] and have expressed concerns over recruitment and the long term viabilty of mussel populations.[71] Survey

[60] Another name that has been used for kakahi in Southland is Rakatu (Cormack & Orwin 1997)
[61] Environment Southland 2010; Habib 1989, and evidence to the Ngai Tahu Claim summarised within this report; Ngai Tahu ki Murihiku 2008; Ngai Tahu Claims Settlement Act 1998
[62] Phillips 2007
[63] Lydeard et al., 2004
[64] formerly known as *Hyridella menziesi*
[65] Grainger et al. 2014
[66] Phillips 2007
[67] Clearwater unpubl. data; Phillips 2007
[68] Clearwater unpubl. data; Hine 1978, Percival 1931 cited in Phillips 2007
[69] Grimmond 1968
[70] Grimmond 1968; McEwan 2012; Rainforth 2008;
[71] McEwan 2012; Rainforth 2008

methods are specialised for waikakahi, and presence of indivduals can be missed by those not skilled in the approprate sampling methodology.[72]

Pressures on waikakahi include: sedimentation; habitat loss – through river modification, dewatering, channelisation and drain clearance of rivers; the availability of suitable fish hosts; eutrophication and water quality deterioration; land clearance with associated removal of shade and increases in water temperatures.[73]

Waikakahi are sensitive to ammonia poisoning, with juveniles (in particular the larvae/glochida) especially vulnerable. They are considered unlikely to be protected by the current ANZECC water quality guidleines for total ammonia nitrogen[74] Ammonia is one of the main contanimants discharged in meat works waste water discharges. Other taonga species can also be sensitive to ammonia, including Paraki/Common Smelt and Banded Kōkopu.[75]

Waikakahi can be found in lowland rivers as far down as the tidal reaches, marginally above the saltwater wedge.[76] In the Oreti River the salt wedge has been confirmed to be below the Makarewa confluence, and is likely to extend from Dunns Road to Ferry Road depending on magnitude of the tides and river flows.[77]

Waikakahi were once widespread in the Makarewa River. As a child Mark and Peter Sutton helped their father conduct fish surveys (Roger Sutton; past manager of Acclimitisation Society) on this river. Mark Sutton remembers 'massive' beds of freshwater mussels in the Makarewa River oxbows that remained after the river was shortened and straightened.[78] Mark specifically recalls freshwater mussels from within the tidal influence (just upstream from the current oxidation plant ponds, which were formed in an an old oxbow of the river) and noted that they occured to right up into the head waters of the catchment. Mark remembered the mussels being old and hard and quite large (~110mm). Although these recollections may be nearly 50 years old, they provide credible anecdotal evidence that indicates how close waikakahi were to the discharge site and their high abundance at that time.

[72] Rainforth pers comm.
[73] Rainforth 2008
[74] Clearwater, Thompson, & Hickey 2014
[75] (Hickey, 2000)
[76] Hannah Rainforth pers. comm. 2014; Rainforth 2008
[77] Hicks, Leigh, & Dare 2013
[78] mid 1960s to 1968 (MacIntosh 1979)

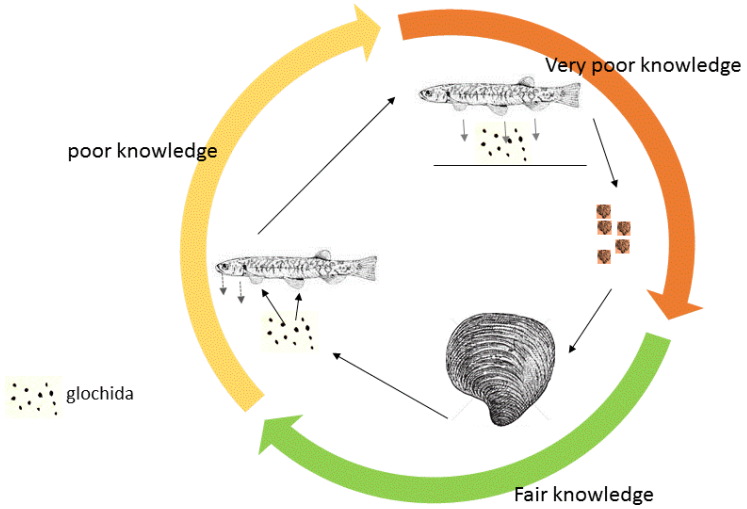

Figure 13: Current knowledge status of the lifecycle of freshwater mussel (adapted from Phillips 2007)

Policies within the Te Tangi a Tauira: Ngāi Tahu ki Murihiku Natural Resource and Environmental Iwi Management Plan, that relate to mahinga kai and freshwater fisheries, identify the expectation and aspiration that water ways meet their respective cultural values (including mahinga kai) through maintenance, protection or restoration.

"Advocate for the protection, restoration and enhancement of waterways, riparian margins, and wetlands as a means of protecting and enhancing freshwater fishery values." (Ngāi Tahu ki Murihiku, 2008, p. 168)

Water is central to Ngāi Tahu life. It is a taonga and it is the kaitiaki responsibility to ensure that the taonga is available for future generations in as good as, if not, better quality.[79]

<u>Key points that AGL may need to consider</u>:

- Waikakahi (freshwater mussels) are a taonga mahinga kai species.
- Mahinga Kai is a central pillar to Ngāi Tahu wellbeing and identity.
- Waikakahi were numerous within the Makarewa Catchment.
- Waikakahi are sensitive to ammonia poisoning, with juveniles (in particular the larvae/glochida) especially vulnerable.
- The likely impact of AGL's discharge on Waikakahi.
- The migration and movement pathways of larval and juvenile waikakahi (potentially through discharge area).
- The potential effects of ammonia on other taonga fisheries (eg paraki/smelt and kōkopu).
- The expectation of restoration of mahinga kai outlined in the Iwi Management Plan.
- Waikakahi are declining and protection is important.
- Potential research/study to survey Waikakahi in the Makarewa and Lower Oreti River, and looking at restoration opportunities of mahinga kai.

[79] Te Rūnanga o Ngāi Tahu 1999; Ngāi Tahu ki Murihiku 2008

Conclusions

This cultural values report has identified the following values of importance that need to be considered as part of the AGL Lorneville 2015 Reconsenting Project:

- Ki Uta Ki Tai: The need to consider the effects of the project from ki uta ki tai (from the mountains to the sea), and that activities at the lower part of the catchment can impact on the cultural values of those in the upper catchment.
- Mahinga kai is central to Ngāi Tahu wellbeing and identity.
- The rich cultural landscape of the Makarewa and Lower Oreti catchment. These include some of the oldest settlements in New Zealand (adjacent to the NRE estuary), the cultural stories of the travels of Tamatea and his waka Takitimu, the number and significance of wāhi tapu and archaeological sites; the large amount of Māori Land in this area, and the mahinga kai resources of this area.
- The kaitiaki responsibility of tangata whenua to continue to protect cultural associations and values. These values are also protected via numerous legal mechanisms.

The following particular points need to be considered for the AGL's Lorneville human waste water management:

- The need to separate human waste from food gathering areas.
- Food gathering occurs in the area downstream and upstream of the area (mahinga kai can move in and through the discharge area). Whitebaiting is significant in this area.
- The adverse effects of human waste discharge on wāhi tapu/archaeological sites near and downstream of this area.
- The expectation set up in the Iwi Management Plan that waste water disposal practice will improve over time and with improved technology.

The following particular points need to be considered for the management of the level of ammonia in the plant's waste water discharge:

- Waikakahi (freshwater mussels) are a taonga mahinga kai species.
- Waikakahi were numerous within the Makarewa Catchment.
- Waikakahi are sensitive to ammonia poisoning, with juveniles (in particular the larvae/glochida) especially vulnerable.
- The likely impact of AGL's discharge on Waikakahi.
- The migration and movement pathways of larval and juvenile waikakahi (potentially through discharge area).
- The potential effects of ammonia on other taonga fisheries (eg paraki/smelt and kōkopu).
- The expectation of restoration of mahinga kai outlined in the Iwi Management Plan.
- Waikakahi are declining and protection is important.
- Potential research/study to survey Waikakahi in the Makarewa and Lower Oreti River, and looking at restoration opportunities of mahinga kai.

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Appendices

Alliance Group Limited (AGL) Lorneville 2015 Reconsenting Project Plan

Alliance Group Limited

Lorneville 2015 Reconsenting

Project Plan

Background

Alliance Group Limited ("Alliance") operates a meat processing and export plant at Lorneville about 7 km north of Invercargill. The Lorneville plant accounts for about half of Alliance's total meat processing. The Lorneville plant holds thirteen existing resource consents, including the key wastewater discharge and air discharge consents which are due to expire on 7 August 2016. The attached consent register lists all existing consents.

An application for renewal of these expiring consents needs to be lodged with Environment Southland (ES) and Invercargill City Council (ICC) by 7 February 2016 so that Alliance enjoys the protection of the RMA in continuing to operate under its existing consents while the applications are processed. Alliance has decided that the renewal applications should be ready to lodge by 30 November 2015. The permits requiring renewal are:

- discharge treated wastewater to Makarewa River (ES)
- discharge contaminants to air (ES)
- discharge treated wastewater to land (ES)

The current ICC land use consent for irrigation does not have an expiry date. However if the activity changes, then a renewed consent will be required.

Two additional consents are associated with the discharge of treated wastewater:

- discharge treated wastewater to land – short term storage (ES)
- operate a dam for temporary storage of wastewater (ICC).

As Alliance progresses their application for consent renewal a decision will be made whether to renew or surrender these consents.

Alliance also holds three permits associated with water abstraction from the Oreti and Makarewa Rivers. These permits are:

- to take surface water from the Oreti River (ES)
- to undertake general maintenance on an intake channel in the Oreti River (ES)
- to take surface water from the Makarewa River (ES)

These consents do not expire until 2027. However to ensure consistency with its consents and long term security for the Plant, Alliance intends to seek renewal of its permits to take water from the Oreti River and to maintain the intake channel. A decision will be made later whether to renew or surrender the permit to take water from the Makarewa.

Comprehensive technical assessment, consultation programme and proposed mitigation are required to ensure a robust and successful application for long term replacement consents.

Alliance Lorneville meat processing and export plant with wastewater treatment ponds in the background.

Resource Consent Application Requirements

For a large industrial operation with potentially significant water abstraction, wastewater discharges and air discharges, such as Alliance Lorneville, a substantial resource consent application is required. The application will include:

- description of existing and future meat processing operations;
- identification and quantification of key wastewater and air discharges contaminants;
- assessment of the actual and potential effects of each discharged contaminant;
- assessment of the actual and potential effects of surface water abstraction;
- assessment of existing wastewater treatment and air emission control systems and proposed treatment/control system upgrades;
- review of wastewater, air emission and environmental monitoring;
- description of consultation and outcomes;
- assessment of compliance with relevant statutory and non-statutory district, regional, national and global standards and guidelines.

Technical Assessments

Technical assessments addressing all significant potential or actual environmental effects of water abstraction, wastewater discharges and air emissions are required to support the application. The primary assessments to be undertaken follow.

1. Planning
    - identify existing and proposed district, regional, national and global regulations that apply to water abstraction, wastewater discharges to Makarewa River/New River Estuary, wastewater discharges to land and discharges to air.

Ideally all issues and concerns will be addressed by the time the application is lodged. This should reduce the number of submitters in opposition, simplify processing of the consent application and confirm a positive relationship between Alliance and its neighbouring community. The consultation programme, in this case, should build on longstanding consultation with Lorneville neighbours and Te Ao Marama, Public Health South, Southland Fish & Game, Department of Conservation and ES, ICC and SDC.

Consultation is likely to include:

- consultation with ES, ICC and SDC over Lorneville 2015 re-consenting project plan;
- formation of Alliance Lorneville Wastewater Technical Working Party including Te Ao Marama, Department of Conservation, Southland Fish & Game, Public Health South, ES and ICC;
- meetings with Lorneville neighbours on air discharges and wastewater discharges;
- wider community consultation on wastewater discharges and air discharges through community meetings or information day;
- follow up consultation with specific parties.

Alliance Environmental Policy

The Alliance environmental policy provides guidance on water, wastewater and air emission control, addressing and managing environmental effects and community consultation.

Environment Policy

Alliance Group is committed to the sustainable management of the natural and physical resources that it depends on.

In meeting this commitment, Alliance Group will be guided by international standards including ISO 14001 and will take all practicable steps to:

- meet or exceed relevant regulatory requirements;
- continually improve environmental performance by identifying and measuring impacts, developing clear objectives and meaningful targets, and measuring progress with effective monitoring;
- optimise the use of all resources including energy, water, packaging and chemicals, to minimise the impact of our operations;
- annually review the adequacy of the environmental management programme and progress towards achieving environmental objectives and targets;
- communicate regularly on environmental matters with stakeholders including shareholders, employees, customers, suppliers, communities and regulatory bodies;
- allocate appropriate resources to enable effective environmental management.

Personnel

The core project team responsible for lodging the application by 30 November 2015 is as follows.

Name	Organisation	Project role
Frances Wise	Alliance Group Limited	Project Director & site contact
David Kean	Alliance Group Limited	Plant Manager
Tony Dons	Tony Dons Limited	Project Manager/consultation
Jason ten Hoorn Boer	Alliance Group Limited	Project Co-ordinator
Azam Khan	Pattle Delamore Partners	Wastewater treatment options
Richard Montgomerie	Freshwater Solutions	Water quality & ecology
John Kyle	Mitchell Partnerships	Planning
Roger Cudmore	Golder Associates	Air quality
Phil Greenwood	SoilWork	Irrigation impacts

Project Timetable

Year	Processing Season	Tasks
2013	To date	• Preliminary consultation with ES, ICC and SDC • Preliminary planning report received • Wastewater data reviewed and additional data collected • Existing river water quality data reviewed and additional river ecological and chemical data collected • Existing air quality data reviewed and impact modelling commenced; independent odour surveys carried out; neighbourhood odour survey carried out.
	Off season (Jul-Oct)	• Community consultation • Preliminary report on wastewater treatment options • Preliminary technical assessments of land, receiving waters and air quality
2014	Peak processing season (Nov-June)	• Stakeholder and community consultation • Test/trial/refine wastewater treatment options • Air quality monitoring • Further receiving water monitoring and modelling • Assess river hydrology and effects of water abstraction
	Off season (Jul-Oct)	• Assess & choose preferred wastewater treatment options • Complete all technical assessments
2015	Peak processing season (Nov-June)	• General community consultation • Seek written approvals • Prepare draft application & AEE • Provide draft application to ES & ICC
	30 November	• Lodge application with ES & ICC
2016	7 February	• Last acceptable date for lodging application
	7 August	• Existing consents expire

Resource Consent Register – Alliance Lorneville

Consent No. Application No.	Activity	Regulatory authority	Granted	Expires	Status
92195 A022-003	Discharge treated meat processing waste to Makarewa River	ES	17-7-01	7-8-16	Current consent. Amended conditions 27-2-06
95077 A022-008	Discharge contaminants to air	ES	17-7-01	7-8-16	Current consent. Amended conditions 27-2-06 Amended conditions 30-5-12
200034 A022-006	Discharge treated wastewater to land	ES	9-5-03	7-8-16	Current consent. Amended conditions 27-2-06
202347 A022-013	To discharge treated wastewater to land - short-term storage	ES	8-3-04	7/8/16	Current consent
RMA200301848	To operate a temporary dam for storage of treated wastewater	ICC	23-1-04	7/8/16	Current consent
201227 A022-012	Maintain water intake channel	ES	7-6-02	7-6-27	Current consent.
203358 A022-002	Take surface water for meat processing operation (Oreti River)	ES	11-5-06	2-9-27	Current consent.
201126 A022-009	Take 6,500 m^3/day of water from Makarewa River	ES	12-6-02	2-9-27	Current consent. Consent commenced 2-9-02.
94468 A022-005	Discharge leachate to ground from closed landfill	ES	8-6-98	5-6-33	Current consent.
206363 A022-015	Discharge contaminants to land and to air (sheepyards solids)	ES	13-8-09	31-7-34	Current consent.
201068 A022-011	Use and erect a sampling structure in Makarewa River bed	ES	14-3-02	14-3-37	Current consent.
206299 A022-014	Discharge stormwater to the Makarewa River	ES	10-4-13	10-4-38	Current consent.
00/01382/NY	Land-use consent for irrigation	ICC	9-5-03	n/a	Current consent
5/4/00121	Gravel extraction	ICC	6-8-01	n/a	Certificate of compliance

2. Wastewater treatment options
    - wastewater characterisation;
    - performance of existing treatment systems;
    - future objectives for wastewater treatment/management;
    - wastewater treatment/management options;
    - preferred options;
    - expected outcomes of preferred wastewater treatment/management options.

3. River and estuary quality and ecology
    - description of existing river and estuary environment;
    - determine effects of existing discharge;
    - determine required reduction in environmental effects and associated improvements in discharges wastewater;
    - proposed river monitoring;
    - confirm compliance with relevant regulations.

4. Water abstraction
    - description of river hydrology and ecology
    - determine effects of existing water abstraction
    - confirm compliance with relevant regulations.

5. Wastewater irrigation effects
    - description of existing soil characteristics;
    - assess effects of existing wastewater irrigation;
    - assess effects of future wastewater irrigation;
    - develop wastewater irrigation limits and monitoring;
    - confirm compliance with relevant regulations.

6. Air quality
    - characterise existing air emissions including odour from wastewater treatment and processing plant and coal boiler emissions;
    - determine effects of existing emissions and if further mitigation required;
    - determine effects of any proposed upgrades or changes to wastewater treatment or processing plant;
    - confirm compliance with relevant regulations;
    - proposed monitoring.

Consultation

Community consultation is a recognised part of good practice in preparing any resource consent application. A description of consultation undertaken is a requirement of an AEE prepared under the RMA91 (Resource Management Act 1991). Consultation should be undertaken with interested and affected parties.

The aim of consultation is to identify interested and affected parties, inform them of the application, determine the issues or concerns of these parties, attempt to resolve these issues or concerns, and where appropriate, seek written support.

1. Statutory Acknowledgement for Oreti River (Schedule 50)

Statutory Area

The statutory area to which this statutory acknowledgement applies is the River known as Oreti, the location of which is shown on Allocation Plan MD 123 (SO 12262).

Preamble

Under section 206, the Crown acknowledges Te Runanga o Ngai Tahu's statement of Ngai Tahu's cultural, spiritual, historic, and traditional association to the Oreti River, as set out below.

Ngai Tahu Association with the Oreti River

The Oreti River traverses a significant area of Murihiku, stretching from its mouth at Invercargill almost to the edge of Whakatipu-wai-maori (Lake Wakatipu). As such, it formed one of the main trails inland from the coast, with an important pounamu trade route continuing northward from the headwaters of the Oreti and travelling, via the Mavora or Von River Valley, to the edge of Wakatipu and onto the Dart and Routeburn pounamu sources. Indeed, pounamu can be found in the upper reaches of the Oreti itself.

The tupuna had considerable knowledge of whakapapa, traditional trails and tauranga waka, places for gathering kai and other taonga, ways in which to use the resources of Oreti, the relationship of people with the river and their dependence on it, and tikanga for the proper and sustainable utilisation of resources. All of these values remain important to Ngai Tahu today.

The kai resources of the Oreti would have supported numerous parties venturing into the interior, and returning by mokihi (vessels made of raupo), laden with pounamu and mahinga kai. Nohoanga (temporary campsites) supported such travel by providing bases from which the travellers could go water fowling, eeling and catching inaka (whitebait), and were located along the course of Oreti River.

There were a number of important settlement sites at the mouth of the Oreti, in the New River estuary, including Omaui, which was located at the mouth of the Oreti, where it passes the New River Heads. Oue, at the mouth of the Oreti River (New River estuary), opposite Omaui, was one of the principal settlements in Murihiku. Honekai who was a principal chief of Murihiku in his time was resident at this settlement in the early 1820s, at the time of the sealers. In 1850 there were said to still be 40 people living at the kaik at Omaui under the chief Mauhe.

As a result of this pattern of occupation, there are a number of urupa located at the lower end of the Oreti, in the estuarine area. Urupa are the resting places of Ngai Tahu tupuna and, as such, are the focus for whanau traditions. These are places holding the memories, traditions, victories and defeats of Ngai Tahu tupuna, and are frequently protected by secret locations.

The mauri of the Oreti represents the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngai Tahu Whanui with the river.

Purposes of Statutory Acknowledgement

Pursuant to section 215, and without limiting the rest of this schedule, the only purposes of this statutory acknowledgement are—

(a) To require that consent authorities forward summaries of resource consent applications to Te Runanga o Ngai Tahu as required by regulations made pursuant to section 207 (clause 12.2.3 of the deed of settlement);

(b) To require that consent authorities, the Historic Places Trust, or the Environment Court, as the case may be, have regard to this statutory acknowledgement in relation to the Oreti River, as provided in sections 208 to 210 (clause 12.2.4 of the deed of settlement);

(c) To empower the Minister responsible for management of the Oreti River or the Commissioner of Crown Lands, as the case may be, to enter into a Deed of Recognition as provided in section 212 (clause 12.2.6 of the deed of settlement); and

(d) To enable Te Runanga o Ngai Tahu and any member of Ngai Tahu Whanui to cite this statutory acknowledgement as evidence of the association of Ngai Tahu to the Oreti River as provided in section 211 (clause 12.2.5 of the deed of settlement).

Limitations on Effect of Statutory Acknowledgement

Except as expressly provided in sections 208 to 211, 213, and 215,—

(a) This statutory acknowledgement does not affect, and is not to be taken into account in, the exercise of any power, duty, or function by any person or entity under any statute, regulation, or bylaw; and

(b) Without limiting paragraph (a), no person or entity, in considering any matter or making any decision or recommendation under statute, regulation, or bylaw, may give any greater or lesser weight to Ngai Tahu's association to the Oreti River (as described in this statutory acknowledgement) than that person or entity would give under the relevant statute, regulation, or bylaw, if this statutory acknowledgement did not exist in respect of the Oreti River.

Except as expressly provided in this Act, this statutory acknowledgement does not affect the lawful rights or interests of any person who is not a party to the deed of settlement.

Except as expressly provided in this Act, this statutory acknowledgement does not, of itself, have the effect of granting, creating, or providing evidence of any estate or interest in, or any rights of any kind whatsoever relating to, the Oreti River.

2. Rakiura/Te Ara a Kiwa (Rakiura/Foveaux Strait Coastal Marine Area (Schedule 104)

Statutory Area

The statutory area to which this statutory acknowledgement applies is Rakiura/Te Ara a Kiwa (Rakiura/Foveaux Strait Coastal Marine Area), the Coastal Marine Area of the Hokonui and Awarua constituencies of the Southland region, as shown on SO 11505 and 11508, Southland Land District as shown on Allocation Plan NT 505 (SO 19901).

Preamble

Under section 313 the Crown acknowledges Te Runanga o Ngai Tahu's statement of Ngai Tahu's cultural, spiritual, historic, and traditional association to Rakiura/Te Ara a Kiwa as set out below.

Ngai Tahu Association with Rakiura/Te Ara a Kiwa

Generally the formation of the coastline of Te Wai Pounamu relates to the tradition of Te Waka o Aoraki, which foundered on a submerged reef, leaving its occupants, Aoraki and his brother to turn to stone. They are manifested now in the highest peaks of the Ka Tititiri of Te Moana (the Southern Alps). The bays, inlets, estuaries and fiords which stud the coast are all the creations of Tu Te Rakiwhanoa, who took on the job of making the island suitable for human habitation.

The naming of various features along the coastline reflects the succession of explorers and iwi (tribes) who travelled around the coastline at various times. The first of these was Maui, who fished up the North Island, and is said to have circumnavigated Te Wai Pounamu. In some accounts the island is called Te Waka o Maui in recognition of his discovery of the new lands. A number of coastal place names are attributed to Maui, particularly on the southern coast. Maui is said to have sojourned at Omaui (at the mouth of the New River estuary) for a year, during which time he claimed the South Island for himself. It is said that in order to keep his waka from drifting away he reached into the sea and pulled up a stone to be used as an anchor, which he named Te Puka o Te Waka o Maui (Rakiura or Stewart Island).

The great explorer Rakaihautu travelled overland along the coast, identifying the key places and resources. He also left many place names on prominent coastal features. When Rakaihautu's southward exploration of the island reached Te Ara a Kiwa, he followed the coastline eastwards before heading for the east coast of Otago.

Particular stretches of the coastline also have their own traditions. Foveaux Strait is known as Te Ara a Kiwa (the pathway of Kiwa), the name relating to the time when Kiwa became tired of having to cross the land isthmus which then joined Murihiku (Southland) with Rakiura (Stewart Island). Kiwa requested the obedient Kewa (whale) to chew through the isthmus and create a waterway so Kiwa could cross to and fro by waka. This Kewa did, and the crumbs that fell from his mouth are the islands in Foveaux Strait, Solander Island being Te Niho a Kewa, a loose tooth that fell from the mouth of Kewa.

The waka Takitimu, captained by the northern rangatira (chief) Tamatea, travelled around much of the Te Wai Pounamu coast, eventually breaking its back at the mouth of the Waiau River in Murihiku. Many place names on the coast can be traced back to this voyage, including Monkey Island near Orepuki which is known as Te-Punga (or Puka)-a-Takitimu. While sailing past the cliffs at Omaui it is said that Tamatea felt a desire to go ashore and inspect the inland, and so he turned to the helmsman and gave the order “Tarere ki whenua uta” (“swing towards the mainland”), but before they got to the shore he countermanded the order and sailed on. Subsequently the whole

area from Omaui to Bluff was given the name of Te Takiwa o Tarere ki Whenua Uta. In olden days when people from the Bluff went visiting they were customarily welcomed on to the host's marae with the call “haere mai koutou te iwi tarere ki whenua uta”. One of the whare at Te Rau Aroha marae in Bluff if also named “Tarere ki Whenua uta” in memory of this event.

The Takitimu's voyage through the Strait came to an end when the waka was overcome by three huge waves, named O-te-wao, O-roko and O-kaka, finally coming to rest on a reef near the mouth of the Waiau (Waimeha). According to this tradition, the three waves continued on across the low lying lands of Murihiku, ending up as permanent features of the landscape.

For Ngai Tahu, traditions such as these represent the links between the cosmological world of the gods and present generations. These histories reinforce tribal identity and solidarity, and continuity between generations, and documents the events which shaped the environment of Te Wai Pounamu and Ngai Tahu as an iwi.

Because of its attractiveness as a place to establish permanent settlements, including pa (fortified settlements), the coastal area was visited and occupied by Waitaha, Ngati Mamoe and Ngai Tahu in succession, who through conflict and allegiance, have merged in the whakapapa (genealogy) of Ngai Tahu Whanui. Battle sites, urupa and landscape features bearing the names of tupuna (ancestors) record this history. Prominent headlands, in particular, were favoured for their defensive qualities and became the headquarters for a succession of rangatira and their followers.

The results of the struggles, alliances and marriages arising out of these migrations were the eventual emergence of a stable, organised and united series of hapu located at permanent or semi-permanent settlements along the coast, with an intricate network of mahinga kai (food gathering) rights and networks that relied to a large extent on coastal resources.

Mokamoka (Mokomoko or Mokemoke) was one such settlement, in a shallow inlet of the Invercargill estuary. It was here that Waitai was killed, the first Ngai Tahu to venture this far south, well out of the range of his own people, then resident at Taumutu. This settlement was sustained by mahinga kai taken from the estuary and adjoining coastline, including shellfish and patiki (flounder).

Oue, a the mouth of the Oreti River (New River estuary), opposite Omaui, was one of the principal settlements in Murihiku. Honekai who was a principal chief of Murihiku in his time was resident at this settlement in the early 1820s, at the time of the sealers. In 1850 there were said to still be 40 people living at the kaik at Omaui under the chief Mauhe. Honekai's brother, Pukarehu, was a man who led a very quiet life, and so was little known. He is remembered, however, in the small knob in the hills above Omaui which bears his name. When he passed away he was interred in the sandhills at the south end of the Oreti Beach opposite Omaui. Oue is said to have got its name from a man Maui left to look after his interests there until his return. It was also here that the coastal track to Riverton began. From Oue to the beach the track was called Te Ara Pakipaki, then, when it reached the beach, it was called Ma Te Aweawe, finally, at the Riverton end, it was known as Mate a Waewae.

After the death of Honekai, and as a consequence of inter-hapu and inter-tribal hostilities in the Canterbury region, many inhabitants of Oue and other coastal villages on Foveaux Strait relocated to Ruapuke Island, which became the Ngai Tahu stronghold in the south. The rangatira Pahi and Tupai were among the first to settle on the island. Pahi had previously had one of the larger and oldest pa in Murihiku at Pahi (Pahia), where 40 to 50 whare (houses) were reported in 1828. The Treaty of Waitangi was signed at Ruapuke Island by Tuhawaiki and others. No battles however occurred here,

the pa Pa-raki-ao was never fully completed, due to the realisation that Te Rauparaha could not reach this far south.

Other important villages along the coast included: Te Wae Wae (Waiau), Taunoa (Orepuki), Kawakaputaputa (Wakaputa), Oraka (Colac Bay), Aparima (Riverton—named Aparima after the daughter of the noted southern rangatira Hekeia, to whom he bequeathed all of the land which his eye could see as he stood on a spot at Otaitai, just north of Riverton), Turangiteuaru, Awarua (Bluff), Te Whera, Toe Toe (mouth of the Mataura River) and Waikawa.

Rarotoka (Centre Island) was a safe haven at times of strife for the villages on the mainland opposite (Pahi, Oraka and Aparima). Numerous artefacts and historical accounts attest to Rarotoka as having a significant place in the Ngai Tahu history associated with Murihiku.

Rakiura also plays a prominent part in southern history, the “Neck” being a particularly favoured spot. Names associated with the area include: Korako-wahine (on the western side of the peninsula), Whare-tatara (a rock), Hupokeka (Bullers Point) and Pukuheke (the point on which the lighthouse stands). Te Wera had two pa built in the area called Kaiarohaki, the one on the mainland was called Tounoa, and across the tidal strip was Ka-Turi-o-Whako.

A permanent settlement was located at Port Pegasus, at the south-eastern end of Rakiura, where numerous middens and cave dwellings remain. Permanent settlement also occurred on the eastern side of Rakiura, from the Kaik near the Neck, south to Tikotaitahi (or Tikotatahi) Bay. A pa was also established at Port Adventure.

Mahinga kai was available through access from the coastal settlements to Te Whaka-a-te-Wera (Paterson Inlet), Lords River and, particularly for waterfowl, to Toi Toi wetland. In addition, the titi islands off the northeastern coast of the island, and at the mouth of Kopeka River and the sea fishery ensured a sound base for permanent and semi-permanent settlement, from which nohoanga operated.

Te Ara a Kiwa, the estuaries, beaches and reefs off the mainland and islands all offered a bounty of mahinga kai, with Rakiura and the titi islands being renowned for their rich resources of bird life, shellfish and wet fish. The area offered a wide range of kaimoana (sea food), including tuaki (cockles), paua, mussels, toheroa, tio (oysters), pupu (mudsnails), cod, groper, barracuda, octopus, patiki (flounders), seaweed, kina, koura (crayfish) and conger eel. Estuarine areas provided freshwater fisheries, including tuna (eels), inaka (whitebait), waikoura (freshwater crayfish), kokopu and kanakana (lamprey). Marine mammals were harvested for whale meat and seal pups. Many reefs along the coast are known by name and are customary fishing grounds, many sand banks, channels, currents and depths are also known for their kaimoana.

A range of bird life in the coastal area also contributed to the diversity of mahinga kai resources available, including titi, seabirds such as shags and gulls, sea bird eggs, waterfowl, and forest birds such as kiwi, kaka, kakapo, weka, kukupa and tieke. A variety of plant resources were also taken in the coastal area, including raupo, fern root, ti kouka (cabbage tree), tutu juice and korari juice. Harakeke (flax) was an important resource, required for the everyday tasks of carrying and cooking kai. Black mud (paru) was gathered at Ocean Beach for use as dye. Totara bark was important for wrapping poha in, to allow safe transport of the titi harvest. Poha were made from bull kelp gathered around the rocky coast.

The numerous titi islands are an important part of the Ngai Tahu southern economy, with Taukihepa (Te Kanawera) being the largest. Titi were and are traded as far north as the North Island. The

“Hakuai” is a bird with a fearsome reputation associated with the islands. No one has ever seen this bird, which appears at night, but it once regularly signalled the end to a birding season by its appearance at night. Known for its distinctive spine-chilling call, the hakuai was a kaitiaki that could not be ignored. At the far western edge of Foveaux Strait is Solander Island (Hau-tere), an impressive rock pinnacle rising hundreds of feet out of the sea, on which fishing and titi gathering occurred.

The coast was also a major highway and trade route, particularly in areas where travel by land was difficult. Foveaux Strait was a principal thoroughfare, with travel to and from Rakiura a regular activity. There was also regular travel between the islands Ruapuke, Rarotoka and other points.

The titi season still involves a large movement across the Strait to the islands, in addition large flotillas of Ngai Tahu once came south from as far afield as Kaikoura to exercise their mutton-birding rights. Whenua Hou (Codfish Island) and the Ruggedy Islands were important staging posts for the movement of birders to the titi islands off the south-west coast of Rakiura. Whenua Hou had everything that the birders required: shelter, proximity to the titi islands, kai moana, manu (birds) and ngahere (bush). From Whenua Hou, the birders would camp at Miniti (Ernest Island), at the end of Mason Bay, where the waka-hunua (double hulled canoes, or canoes with outriggers) were able to moor safely, ready for the final movement to the various titi islands. Waka-hunua were an important means of transport on the dangerous and treacherous waters of Foveaux Strait and the Rakiura coast. After dropping birders and stores on the titi islands the waka hunua generally returned immediately to Aparima and other tauranga waka along the mainland of Foveaux Strait, due to the paucity of safe anchorages among the titi islands.

Travel by sea between settlements and hapu was common, with a variety of different forms of waka, including the southern waka hunua (double-hulled canoe) and, post-contact, whale boats plying the waters continuously. Hence tauranga waka occur up and down the coast, including spots at Pahi, Oraka and Aparima, and wherever a tauranga waka is located there is also likely to be a nohoanga (settlement), fishing ground, kaimoana resource, rimurapa (bull kelp — used to make the poha, in which titi were and still are preserved) and the sea trail linked to a land trail or mahinga kai resource. Knowledge of these areas continues to be held by whanau and hapu and is regarded as a taonga. The traditional mobile lifestyle of the people led to their dependence on the resources of the coast.

The New River estuary contains wāhi tapu, as do many of the coastal dunes and estuarine complexes for the length of the Foveaux Strait. Many urupa are located on islands and prominent headlands overlooking the Strait and the surrounding lands and mountains. The rangatira Te Wera, of Huriawa fame, is buried at Taramea (Howells point), near Riverton. There are two particularly important urupa in Colac Bay, as well as an old quarry site (Tihaka). From Colac Bay to Wakapatu, the coastal sandhills are full of middens and ovens, considered to be linked to the significant mahinga kai gathering undertaken in Lake George (Urewera). Urupa are the resting places of Ngai Tahu tupuna and, as such, are the focus for whanau traditions. These are places holding the memories, traditions, victories and defeats of Ngai Tahu tupuna, and are frequently protected in secret locations.

The mauri of the coastal area represent the essence that binds the physical and spiritual elements of all things together, generating and upholding all life. All elements of the natural environment possess a life force, and all forms of life are related. Mauri is a critical element of the spiritual relationship of Ngai Tahu Whanui with the coastal area.

Purposes of Statutory Acknowledgement

Pursuant to section 215 and without limiting the rest of this schedule, the only purposes of this statutory acknowledgement are—

(a) To require that consent authorities forward summaries of resource consent applications to Te Runanga o Ngai Tahu as required by regulations made pursuant to section 207 (clause 12.2.3 of the deed of settlement); and

(b) To require that consent authorities, the Historic Places Trust, or the Environment Court, as the case may be, have regard to this statutory acknowledgement in relation to Rakiura/Te Ara a Kiwa, as provided in sections 208 to 210 (clause 12.2.4 of the deed of settlement); and

(c) To enable Te Runanga o Ngai Tahu and any member of Ngai Tahu Whanui to cite this statutory acknowledgement as evidence of the association of Ngai Tahu to Rakiura/Te Ara a Kiwa as provided in section 208 (clause 12.2.5 of the deed of settlement).

Limitations on effect of statutory acknowledgement

Except as expressly provided in sections 208 to 211, 213, and 215,—

(a) This statutory acknowledgement does not affect, and is not to be taken into account in, the exercise of any power, duty, or function by any person or entity under any statute, regulation, or bylaws; and

(b) Without limiting paragraph (a), no person or entity, in considering any matter or making any decision or recommendation under statute, regulation, or bylaw, may give any greater or lesser weight to Ngai Tahu's association to Rakiura/Te Ara a Kiwa (as described in this statutory acknowledgement) than that person or entity would give under the relevant statute, regulation or bylaw, if this statutory acknowledgement did not exist in respect of Rakiura/Te Ara a Kiwa.

Except as expressly provided in this Act, this statutory acknowledgement does not affect the lawful rights or interests of any person who is not a party to the deed of settlement.

Except as expressly provided in this Act, this statutory acknowledgement does not, of itself, have the effect of granting, creating or providing evidence of any estate or interest in, or any rights of any kind whatsoever relating to, Rakiura/Te Ara a Kiwa.

3. Taonga species: Ngai Tahu Claims Settlement Act 1998- Schedule 97

Birds

Name in Maori	Name in English	Scientific Name
Hoiho	Yellow-eyed penguin	*Megadyptes antipodes*
Kahu	Australasian harrier	*Circus approximans*
Kaka	South Island kaka	*Nestor meridionalis meridionalis*
Kakapo	Kakapo	*Strigops habroptilus*
Kakariki	New Zealand parakeet	*Cyanoramphus spp.*
Kakaruai	South Island robin	*Petroica australis australis*
Kaki	Black stilt	*Himantopus novaezelandiae*
Kamana	Crested grebe	*Podiceps cristatus*
Karearea	New Zealand falcon	*Falco novaeseelandiae*
Karoro	Black backed gull	*Larus dominicanus*
Kea	Kea	*Nestor notabilis*
Koau	Black shag	*Phalacrocorax carbo*
	Pied shag	*Phalacrocorax varius varius*
	Little shag	*Phalacrocorax melanoleucos brevirostris*
Koekoea	Long-tailed cuckoo	*Eudynamys taitensis*
Koparapara or Korimako	Bellbird	*Anthornis melanura melanura*
Korora	Blue penguin	*Eudyptula minor*
Kotare	Kingfisher	*Halcyon sancta*
Kotuku	White heron	*Egretta alba*
Kowhiowhio	Blue duck	*Hymenolaimus malacorhynchos*
Kuaka	Bar-tailed godwit	*Limosa lapponica*
Kukupa/Kereru	New Zealand wood pigeon	*Hemiphaga novaeseelandiae*
Kuruwhengu/Kuruwhengi	New Zealand shoveller	*Anas rhynchotis*
Mata	Fernbird	*Bowdleria punctata punctata* and *Bowdleria punctata stewartiana* and *Bowdleria punctata wilsoni* and *Bowdleria punctata candata*
Matuku moana	Reef heron	*Egretta sacra*
Miromiro	South Island tomtit	*Petroica macrocephala macrocephala*
Miromiro	Snares Island tomtit	*Petroica macrocephala dannefaerdi*
Mohua	Yellowhead	*Mohoua ochrocephala*
Pakura/Pukeko	Swamp hen/Pukeko	*Porphyrio porphyrio*
Parera	Grey duck	*Anas superciliosa*
Pateke	Brown teal	*Anas aucklandica*
Pihoihoi	New Zealand pipit	*Anthus novaeseelandiae*
Pipiwharauroa	Shining cuckoo	*Chrysococcyx lucidus*
Piwakawaka	South Island fantail	*Rhipidura fuliginosa fuliginosa*
Poaka	Pied stilt	*Himantopus himantopus*
Pokotiwha	Snares crested penguin	*Eudyptes robustus*
Putakitaki	Paradise shelduck	*Tadorna variegata*
Riroriro	Grey warbler	*Gerygone igata*
Roroa	Great spotted kiwi	*Apteryx haastii*
Rowi	Okarito brown kiwi	*Apteryx mantelli*
Ruru koukou	Morepork	*Ninox novaeseelandiae*
Takahe	Takahe	*Porphyrio mantelli*
Tara	Terns	*Sterna spp.*
Tawaki	Fiordland crested penguin	*Eudyptes pachyrhynchus*

Name in Maori	Name in English	Scientific Name
Tete	Grey teal	*Anas gracilis*
Tieke	South Island saddleback	*Philesturnus carunculatus carunculatus*
Titi	Sooty shearwater/Muttonbird/	*Puffinus griseus* and *Puffinus huttoni* and
	Hutton's shearwater	*Pelecanoides urinatrix* and
	Common diving petrel	*Pelecanoides georgicus* and
	South Georgian diving petrel	*Procellaria westlandica* and
	Westland petrel	*Pachyptila turtur* and
	Fairy prion	*Pachyptila vittata* and *Pelagodroma marina*
	Broad billed prion	and
	White-faced storm petrel	*Pterodroma cookii* and
	Cook's petrel	*Pterodroma inexpectata*
	Mottled petrel	
Tititipounamu	South Island rifleman	*Acanthisitta chloris chloris*
Tokoeka	South Island brown kiwi	*Apteryx australis*
Toroa	Albatrosses and Mollymawks	*Diomedea spp.*
Toutouwai	Stewart Island robin	*Petroica australis rakiura*
Tui	Tui	*Prosthemadera novaeseelandiae*
Tutukiwi	Snares Island snipe	*Coenocorypha aucklandica huegeli*
Weka	Western weka	*Gallirallus australis australis*
Weka	Stewart Island weka	*Gallirallus australis scotti*
Weka	Buff weka	*Gallirallus australis hectori*

Plants

Name in Maori	Name in English	Scientific Name
Akatorotoro	White Rata	*Metrosideros perforata*
Aruhe	Fernroot (bracken)	*Pteridium aquilinum var. esculentum*
Harakeke	Flax	*Phormium tenax*
Horoeka	Lancewood	*Pseudopanax crassifolius*
Houhi	Mountain ribbonwood	*Hoheria lyalli and H glabata*
Kahikatea	Kahikatea	*Dacrycarpus dacrydioides*
Kamahi	Kamahi	*Weinmannia racemosa*
Kanuka	Kanuka	*Kunzia ericoides*
Kapuka	Broadleaf	*Griselinia littoralis*
Karaeopirita	Supplejack	*Ripogonum scandens*
Karaka	New Zealand laurel/Karaka	*Corynocarpus laevigata*
Karamu	Coprosma	*Coprosma robusta, coprosma lucida,*
		coprosma foetidissima
Katote	Tree fern	*Cyathea smithii*
Kiekie	Kiekie	*Freycinetia baueriana subsp. banksii*
Kohia	NZ Passionfruit	*Passiflora tetranda*
Korokio	Korokio Wire-netting bush	*Corokia cotoneaster*
Koromiko/Kokomuka	Koromiko	*Hebe salicfolia*
Kotukutuku	Tree fuchsia	*Fuchsia excorticata*
Kowhai/Kohai	Kowhai	*Sophora microphylla*

Name in Maori	Name in English	Scientific Name
Mamaku	Tree fern	*Cyathea medullaris*
Mania	Sedge	*Carex flagellifera*
Manuka/Kahikatoa	Tea-tree	*Leptospermum scoparium*
Mapou	Red Matipo	*Myrsine australis*
Matai	Matai/Black pine	*Prumnopitys taxifolia*
Miro	Miro/Brown pine	*Podocarpus ferrugineus*
Ngaio	Ngaio	*Myoporum laetum*
Nikau	New Zealand palm	*Rhopalostylis sapida*
Panako	(Species of fern)	*Asplenium obtusatum*
Panako	(Species of fern)	*Botrychium australe and B. biforme*
Patotara	Dwarf mingimingi	*Leucopogon fraseri*
Pingao	Pingao	*Desmoschoenus spiralis*
Pokaka	Pokaka	*Elaeocarpus hookerianus*
Ponga/Poka	Tree fern	*Cyathea dealbata*
Rata	Southern rata	*Metrosideros umbellata*
Raupo	Bulrush	*Typha angustifolia*
Rautawhiri/Kohuhu	Black matipo/Mapou	*Pittosporum tenuifolium*
Rimu	Rimu/Red pine	*Dacrydium cypressinum*
Rimurapa	Bull kelp	*Durvillaea antarctica*
Taramea	Speargrass, spaniard	*Aciphylla spp.*
Tarata	Lemonwood	*Pittosporum eugenioides*
Tawai	Beech	*Nothofagus spp.*
Teteaweka	Muttonbird scrub	*Olearia angustifolia*
TiRakau/Tikouka	Cabbage tree	*Cordyline australis*
Tikumu	Mountain daisy	*Celmisia spectabilis and C semicordata*
Titoki	New Zealand ash	*Alectryon excelsus*
Toatoa	Mountain Toatoa, Celery pine	*Phyllocladus alpinus*
Toetoe	Toetoe	*Cortaderia richardii*
Totara	Totara	*Podocarpus totara*
Tutu	Tutu	*Coriaria spp.*
Whaririki	Mountain flax	*Phormium cookianum*
Whinau	Hinau	*Elaeocarpus dentatus*
Wi	Silver tussock	*Poa cita*
Wiwi	Rushes	*Juncus all indigenous Juncus spp. and J. maritimus*

Marine Mammals

Name in Maori	Name in English	Scientific Name
Ihupuku	Southern elephant seal	*Mirounga leonina*
Kekeno	New Zealand fur seals	*Arctocephalus forsteri*
Paikea	Humpback whales	*Megaptera novaeangliae*
Paraoa	Sperm whale	*Physeter macrocephalus*
Rapoka/Whakahao	New Zealand sea lion/Hooker's sea lion	*Phocarctos hookeri*
Tohora	Southern right whale	*Balaene australis*

Customary fisheries

Part A – Taonga Fish Species

Name in Maori	Name in English	Scientific Name
Kaeo	Sea tulip	*Pyura pachydermatum*
Koeke	Common shrimp	*Palaemon affinis*
Kokopu/Hawai	Giant bully	*Gobiomorphus gobioides*
Kowaro	Canterbury mudfish	*Neochanna burrowsius*
Paraki/Ngaiore	Common smelt	*Retropinna retropinna*
Piripiripohatu	Torrentfish	*Cheimarrichthys fosteri*
Taiwharu	Giant kokopu	*Galaxias argenteus*

Part B – Shellfish Species

Name in Maori	Name in English	Scientific Name
Pipi/Kakahi	Pipi	*Paphies australe*
Tuaki	Cockle	*Austrovenus stutchburgi*
Tuaki/Hakiari, Kuhakuha/Purimu	Surfclam	*Dosinia anus, Paphies donacina, Mactra discar, Mactra murchsoni, Spisula aequilateralis, Basina yatei, or Dosinia subrosa*
Tuatua	Tuatua	*Paphies subtriangulata, Paphies donacina*
Waikaka/Pupu	Mudsnail	*Amphibola crenata, Turbo smaragdus, Zedilom spp*

4. Taonga found from the Makarewa to Hokonui Area (stored in the Southland Museum and Art Gallery)

- 94.58 Toki (Riverton argillite). Found at Makarewa river waterfalls at Hedgehope
- 95.65 Toki (Duff type 2B). Found in north Makarewa.
- D45.73 Toki. Found Makarewa
- B72.338 Unfinished patu pounamu (Dart River type). Found at Menzies Bush
- D48.10 Patu rakau. Found at Braintree farm, Hokonui Hills.
- 94.10 Toki (Bluff argillite). Found at Mabel Bush
- B77.857 Toki (Tiwai argillite). Found at Mabel Bush
- 51. Toki (Riverton argillite). Found at Grove Bush.
- 94.59 Granite hammerstone. Found at Glencoe.
- D46.1942 Toki. Found at Glencoe.
- B67.84 Toki. Found at Dunsdale Valley.
- B67.85 Toki. Found at Dunsdale Valley.
- B68.14 Toki (Tiwai argilitte). Found Dunsdale Valley.
- Z.2887 Toki (Black Tiwai argillite) Found Dunsdale Valley.

5. Waste Water Disposal Policies for Ngai Tahu ki Murihiku 2008.[80]

1. Promote the inclusion of Ngāi Tahu ki Murihiku issues and policies in statutory plan provisions and best practice guidelines for managing wastewater disposal.

2. Ensure that Ngāi Tahu ki Murihiku are provided with the opportunity to participate through pre hearing meetings or other processes in the development of appropriate consent conditions for discharge consents, including monitoring conditions.

3. Require that sufficient and appropriate information is provided with applications to allow tangata whenua to assess cultural effects (e.g. nature of the discharge, treatment provisions, and assessment of alternatives, actual and potential effects).

4. Promote education and awareness of Ngāi Tahu ki Murihiku values associated with water, and how those values can be adversely affected by activities involving the discharge of contaminants to water.

5. Assess proposed wastewater discharge activities in terms of:

a. type/ nature of the discharge;
b. location and sensitivity of the receiving environment;
c. cultural associations with location of operations;
d. actual and potential effects on cultural values;
e. available best practice technology;
f. mitigation that can occur (e.g. using plants to filter waste, discharging at specific times to minimise impact, treatment options)
g. community acceptability;
h. cost.

6. Avoid the use of water as a receiving environment for the direct, or point source, discharge of contaminants. Even if the discharge is treated and therefore considered “clean”, it may still be culturally unacceptable. Generally, all discharge must first be to land.

7. Assess waste disposal proposals on a case by case basis, with a focus on local circumstances and finding local solutions.

8. Wastewater disposal options that propose the direct discharge of treated or untreated effluent to water need to be assessed by the kaitiaki rūnanga on a case by case, individual waterway, basis. The appropriateness of any proposal will depend on the nature of the proposal, and what waterway is involved. Individual waterways possess their individual mauri and values, and kaitiaki rūnanga are in the best position to assess the potential impacts of a proposal on such values.

9. Encourage creative, innovative and sustainable approaches to wastewater disposal that make use of the best technology available, and that adopt principles of waste reduction and cleaner production (e.g. recycling grey water for use on gardens, collecting stormwater for a pond that can then be used for recreation in a new subdivision).

10. Require that the highest environmental standards are applied to consent applications involving the discharge of contaminants to land or water (e.g. standards of treatment of sewage).

[80] Ngai Tahu ki Murihiku, 2008, p. 138

11. Require soil risk assessments (type and percolation of the soils) prior to consent for discharge to land, to assess the suitability and capability of the receiving environment. Wastewater loading rates (mm/day) must reflect effluent quality and soil properties.

12. Encourage the establishment of wetland areas, where practical, to improve discharge to land activities, through allowing Papatūānuku the opportunity to filter and clean any impurities.

13. Require the use of buffer zones, bunds and other mechanisms to prevent wastewater from entering waterways.

14. Promote the use of high uptake vegetation (e.g. commercial/production forest plantations) for wastewater disposal, and to ensure that Ngāi Tahu ki Murihiku are involved in decisions relating to such disposal.

15. Any discharge activity must include a robust monitoring programme that includes regular monitoring of the discharge and the potential effects on the receiving environment. Monitoring can confirm system performance, and identify and remedy any system failures.

16. Require that large scale wastewater disposal operations (e.g. town sewage schemes, industry) develop environmental management plans, including contingency plans to cope with any faults, breakdowns, natural disasters, or extreme weather events (e.g. cash bonds for liability).

17. Duration of consent for wastewater disposal must recognise and provide for the future growth and development of the industry or community, and the ability of the existing operations to accommodate such growth or development.

18. Recommend a duration not exceeding 25 years, for discharge consents relating to wastewater disposal, with an assumption that upon expiry (if not before), the quality of the system will be improved as technological improvements become available. In some instances, a lesser term may be appropriate, with a condition requiring the system is upgraded within a specified time period.

19. Require conditions of consent that allow for a 5-year review of wastewater disposal activities. During review, consent holders should be required to consider technological improvements. If improvements are available, but not adopted, the consent holder should provide reasons why.

20. Encourage developers and consent applicants to provide site visits for tangata whenua representatives to observe proposed wastewater treatment systems. Site visits enable ngā rūnanga representatives to see what is proposed “on the ground”.