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Toitū te marae o Tangaroa
Toitū te iwi
*If the domain of Tane survives to give sustenance
and the domain of Tangaroa likewise remains
So too will the people.¹*

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E nga uri o Ranginui raua ko Papatuanuku. Nga Atua kaitiaki:

- Tangaroa
- Tawhirimatea
- Haumietiketie
- Tane Mahuta
- Rongomatane
- Tumatauenga

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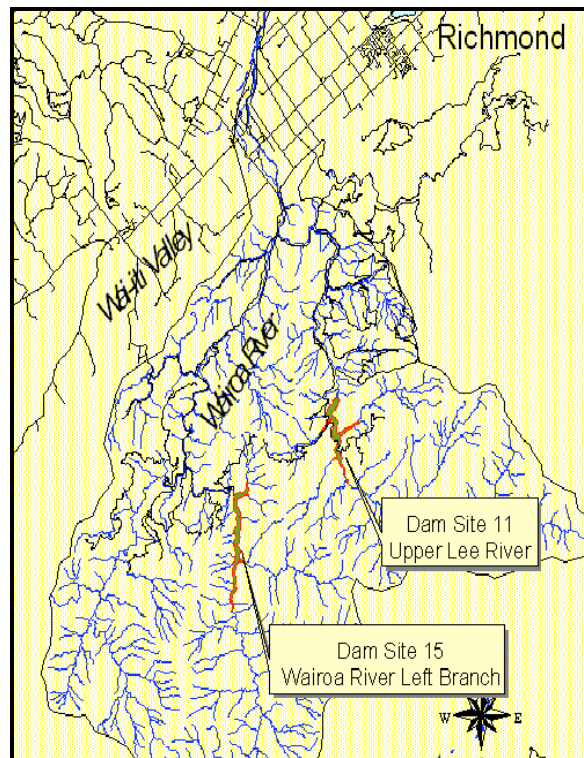
na Dean Walker and Wayne Bunt
for Ngati Rarua, Ngati Tama and Te Atiawa

¹ B James (1993, p6)

1.0 Introduction

The Motueka Iwi Resource Management Advisory Komiti (MIRMAK) have carried out this cultural impact assessment following a request made to the Tasman District Council by Tangata Whenua ki Waimeha² in regards to a proposed Waimea Water Augmentation Scheme. The scheme has been developed by community interests in the area (as Waimea Water Augmentation Committee WWAC)) with the assistance of the Tasman District Council (TDC).

The purpose of the scheme is to supplement the low summer flows on the Wairoa and Waimea Rivers through water storage in the Wairoa/Lee Water catchment. It's aim is to address recurrent water shortages being experienced across the Waimea Plains and provide for a greater security of supply for water users. It is also intended to improve consumptive, environmental, community and aesthetic values of the river across the plains and surrounds. The water take on the Waimea is at present over-allocated which means that in a dry summer the river runs low. Such a situation often leads to ecological, economic and social costs. Map 1 below shows the location of possible dam sites.



Map 1: Wairoa and Lee Tributaries of Waimea Catchment

² The Tangata Whenua of Waimea and its environs.

1.1 Manawhenua Kaitiaki

A number of iwi are Tangata Whenua or hold manawhenua³ over Te Tau Ihu o te Waka a Maui (the top of the South Island). These include the three iwi involved in MIRMAK ; being Ngāti Rarua, Te Atiawa and Ngāti Tama. Wakatu Incorporation and Ngāti Rarua Atiawa Iwi Trust⁴ also are represented on MIRMAK. Contact by was made also with Ngati Kuia, Ngāti Kōata and Ngāti Toarangatira (through NIRMAK) as well as Ngāti Apa in the preparation of this document.

This Cultural Impact Assessment (CIA)⁵ is an assessment of the effects of the Waimea Water Augmentation Scheme on the beliefs, values and physical being of Tangata Whenua ki Waimeha. Only Tangata Whenua⁶ who whakapapa to the whenua (ngā take tupuna) have the mandate to carry out CIA's. Only Tangata Whenua can determine the issues that affect themselves and to what extent these might be.

This CIA can never be a full cultural assessment. Some narratives are not included or remain untold for whatever reasons: these include the limitations of time and finance as well as some whanau, hapu or iwi may feel that it is an inappropriate time or mode in which to tell their history(s). This is simply one narrative within one snippet of time. The narratives that may remain untold have no less validity, however.

A CIA is both a process and a document. The document requires a process in order to complete it. Once the document is completed this is not the end of the process or the need for further consultation with Tangata Whenua ki Waimeha. The process will continue at least until such time as the issues that have been raised by the Tangata Whenua have been fully addressed.

This CIA does not signify that full consultation with Tangata Whenua has taken place. The applicant will still have to contact each of the manawhenua iwi individually for consultation and “sign-off” in regards to any resource consent(s).

³ Manawhenua literally means holding mana over the land

⁴ NRAIT and Wakatu Incorporation are not manawhenua iwi, however, all their shareholders are Tangata Whenua.

⁵ Also sometimes called an ACE or Assessment of Cultural Effects

⁶ The Resource Management Act definition of Tangata Whenua is “in relation to a particular area, means the iwi, or hapu, that holds mana whenua over that area”.

This particular CIA concerns fresh water. The right to manage water has been vested in the Crown. However the ownership⁷ of water has not been. Tangata Whenua believe that we have a prima facie better title to water. This is based on the guarantees under the Treaty of Waitangi, Maori customary law and the English Common Law (According to English common law water is incapable of ownership unless captured).

In a number of claims to the Waitangi Tribunal it was claimed that rivers were a taonga (as per Te Tiriti o Waitangi). In the Mohaka River, Te Ika Whenua Rivers and the Whanganui River claims all three tribunals found that the rivers in question were unquestionably taonga of the claimants, over which they exercised dominion and were thus subject to the treaty guarantees. **This CIA is outside of this realm of debate but nothing in this CIA shall deem the relinquishment of any rights Tangata Wheuna have or we believe we have to water or prejudice any right to claim ownership or title to water.**

1.2 Kaitiakitanga

Through the relationship with nga kaitiaki atua the manawhenua iwi have a duty or obligation to our ancestors, those living and those future generations to come to take care of and protect places of cultural significance, natural resources and other taonga (collectively nga taonga tuku iho) in Tasman-Nelson. In former times the manawhenua kaitiaki controlled and regulated access over all natural resources. Kaitiaki (an inherited role that included the guardianship of natural resources) were mandated by and on behalf of whanau, hapu and iwi to care for and protect the productive and spiritual well-being of ngā taonga within a particular rohe or area⁸. The duty of the kaitaki was to protect and strengthen both the intangible Mauri and Wairua and the physical well being of the resource, place or taonga.

In the past kaitiaki carried out their responsibilities and obligations using kaitiakitanga. Kaitiakitanga can be defined as the responsibilities and customs used by kaitiaki to take care of nga taonga tuku iho (or the treasures passed down). This included a system of resource management practices, rules and

⁷ Ownership in this sense means “right of use” rather than the legal definition of ownership.

⁸ Today some government agencies claim or assume a guardianship or kaitiaki role. The Department of Conservation and Landcare Research are two such examples. They gain their kaitiaki status through legislation. However, we gain our kaitiaki status through whakapapa.

techniques for managing natural resources. These were both practical and spiritual in nature and included such concepts as tapu and rahui.

Tangata Whenua believe that these kaitiaki responsibilities and obligations still exist, they still have relevance and we still have a right to practice them. We believe that they should be carried out by kaitiaki using tikanga (customs), kawa⁹ (correct way of doing things) and mātauranga Maori (traditional knowledge) that have been developed and passed down through the generations. These things have been passed down through our oral tradition as well as through waiata, karakia and whakatauki¹⁰. The practices associated with kaitiakitanga are also closely linked with mana and tino rangatiratanga (or self-determination).

1.3 Te Tiriti o Waitangi/ The Treaty of Waitangi 1840

Tangata Whenua ki Waimeha carry out cultural impact assessments, to ensure that the spiritual and physical well being of a resource, area or site is maintained or protected and our kaitiaki obligations are upheld. These roles and responsibilities apply to the ocean, rivers, lakes, forests, fisheries and wildlife as they do to all natural resources. They were guaranteed to Tangata Whenua under Article 2 of the Treaty of Waitangi and Te Tiriti o Waitangi for as long as Tangata Whenua so desired. We have not relinquished these rights and responsibilities. Below is a transcript of the Second Article of Te Tiriti o Waitangi followed by the first part of the Second Article of the Treaty of Waitangi¹¹.

“Ko te Kuini o Ingarani ka wakarite ka wakaae ki nga Rangatira ki nga hapu, ki nga tangata katoa o Nu Tirani te tino rangatiratanga o ratou wenua o ratou kainga me o ratou taonga katoa. Otiia ko nga Rangatira o te wakaminenga me nga Rangatira katoa atu ka tuku ki te Kuini te hokonga o era wahi wenua e pai ai te tangata nona te Wenua—ki te ritenga o te utu e wakaritea ai e ratou ko te kai hoko e meatia nei e te Kuini hei kai hoko mona.”

⁹ The *kawa* or “correct way of doing things” varies from iwi to iwi, hapu to hapu and whanau to whanau depending on the beliefs and values of each.

¹⁰ *Waiata* are songs, *karakia* are prayers and incantations and *whakatauki* are proverbs.

¹¹ Article 2 of Te Tiriti o Waitangi does not say exactly the same as Article 2 of the Treaty of Waitangi even given the obvious misinterpretations when translating from one language to another. Article 2 of Te Tiriti o Waitangi declares land and other taonga. Taonga includes both the physical things (forests, fisheries, estates and other properties) **as well as** the more intangible such as the Atua.

“Her majesty the Queen of England confirms and guarantees to the Chiefs and Tribes of New Zealand and to the respective families and individuals thereof the full exclusive and undisturbed possession of their land and Estates, Forests, Fisheries and other properties which they may collectively or individually possess so long as it is their wish and desire to maintain the same in their possession...”

Since the signing of the Treaty of Waitangi in 1840 land and other natural resources have gradually been alienated from Tangata Whenua ki Waimeha. This has diminished the authority of iwi, hapu and whanau over nga taonga tuku iho that we were previously responsible for as kaitiaki. Despite this loss the tikanga, roles and responsibilities over natural resources by manawhenua iwi, hapu and whanau still remain strong.

1.4 The Resource Management Act 1991

The Resource Management Act further affirms both the guarantee set out in Article 2 of the Treaty as well as the rights and responsibilities of Tangata Whenua particularly in sections 6(e), 7(a) and 8. These are: S6 (e) *“The relationship of Maori and their culture and traditions and their ancestral lands, water, sites, waahi tapu, and other taonga”*, S7 (a) *“Kaitiakitanga.”* and S8 whereby local authorities must *“Take the principles of the Treaty of Waitangi”¹² into account.”*

The principles of the Treaty of Waitangi are not the same as the Treaty of Waitangi itself¹³. Our tupuna signed Te Tiriti o Waitangi not the principles. These principles have arisen out of debate over the exact meanings of the words and appear in various legislation and statutes. The principle that specifically relates to Article 2 is that *“Tino rangatiratanga or chieftainship over lands, forest, fisheries and other taonga would be protected and guaranteed.”¹⁴* The principle of equal partnership with the Crown is also of particular importance to Tangata Whenua in terms of resource management. These principles are helpful in interpreting the Treaty, however, the Treaty of Waitangi will always take precedence over the

¹² “The principles of the Treaty of Waitangi” were initially outlined in the Treaty of Waitangi Act, 1975.

¹³ For Maori both the Treaty of Waitangi and Te Tiriti o Waitangi will always take precedence over “the principles” as the Treaty and Te Tiriti were signed not “the principles”.

¹⁴ From the State-Owned Enterprises Act, 1986.

principles as does Te Tiriti o Waitangi take precedence over the English text of the Treaty¹⁵ for Tangata Whenua.

Other provisions of the Resource Management Act that help affirm Tangata Whenua as kaitiaki include s61, s66, and s74. In these sections Councils must consider iwi management plans (or other iwi planning documents) in preparing policies and plans. Section 33 enables local authorities to transfer powers of authority to iwi authorities, thus also recognising the status of Tangata Whenua as both kaitiaki and a Crown partner.

Further, the primary purpose of the RMA, that of sustainable management, accords closely with the philosophical viewpoint of Maori. Kaitiakitanga has twin outcomes in conservation and sustainable use, where the two are compatible rather than irreconcilable.

1.5 Local Government (Amendment) Act 2003

The Local Government Act 2003 contains several provisions that relate specifically to the participation of Maori in local government and its processes. There are two essential differences for Tangata Whenua between this Act and previous legislation such as the Resource Management Act. The first is that the provisions of the 2003 act relate to *Maori* rather than *Tangata Whenua*. The second is the emphasis of the provisions is on *giving effect to* the principles of the Treaty of Waitangi rather than in the previous legislation which was on *taking into account* the principles of the Treaty of Waitangi. The most relevant sections of the Local Government Act in regards to Tangata Whenua are sections 4, 81 and 82(2).

Section 4. Treaty of Waitangi

In order to recognise and respect the Crown's responsibility to take appropriate account of the principles of the Treaty of Waitangi and to maintain and improve opportunities for Maori to contribute to local government decision-making processes. Parts 2 and 6 provide principles and requirements for local authorities

¹⁵ Te Tiriti o Waitangi is the Maori text of the Treaty of Waitangi. The Maori text was signed by many more chiefs than the English text and under the international law principle of *Contra Preferentum* the indigenous text (in this case Te Reo Maori) must take precedence (NMIT, 2002).

that are intended to facilitate participation by Maori in local authority decision-making processes.

Section 81. Contributions to decision-making processes by Maori

(1) A local authority must—

- (a) establish and maintain processes to provide opportunities for Maori to contribute to the decision-making processes of the local authority; and
- (b) consider ways in which it may foster the development of Maori capacity to contribute to the decision-making processes of the local authority; and
- (c) provide relevant information to Maori for the purposes of paragraphs (a) and (b).

Section 82. Principles of consultation

(2) A local authority must ensure that it has in place processes for consulting with Maori in accordance with subsection (1).

1.6 Water Programme of Action 2005

The Government has recently embarked on a Water Programme of Action in an effort to help determine how to fairly use, protect and preserve New Zealand's freshwater resources. The project is being jointly coordinated by the Ministry for the Environment and the Ministry of Agriculture and Forestry. It has arisen out of a result of sometimes poor and/or ad hoc decision making in relation to the past management of New Zealand's streams, rivers, lakes, wetlands and other freshwater resources.

The Water Programme of Action is presently focusing on three issues and has produced a paper on each. These are; water quality, water allocation and use, and water bodies of national importance (See the three briefs below).

1.6.1 Water Allocation and Use

The Water Allocation and Use paper identified problems in our current systems of water allocation and use. It considered allocation approaches that would:

- Enable sound decisions to be made about how much water should remain in water bodies and how much can be abstracted.

- Lead to allocation and facilitate reallocation of abstracted water to uses with the highest environmental, social, cultural and economic values, taking into account present and future needs in a fair and equitable way.
- Encourage technical efficiency in the use of water.

1.6.2 The Effects of Rural Land Use on Water Quality

The problem addressed by the Water Quality paper was a lack of effective management of diffuse discharges of contaminants to land in some catchments. This contributes to poor water quality, especially in lowland rivers and lakes. Diffuse discharges (or small amounts over a wide area) are particularly a feature of the rural environment, as discharges in the urban area are more commonly concentrated at a specific point and controlled by resource consents. In addition, only 3% of the length of New Zealand's rivers flows through urban areas. For these reasons, the project focused on the impacts of rural land use, while noting that some issues for urban land use are likely to be similar and may be considered in future processes. Requirements for a good water quality management framework and potential actions that could be taken to improve the current framework were identified.

1.6.3 Potential Water Bodies of National Importance

The Water Programme of Action includes studies and reports which identify water bodies that are most important for various values. The main objectives of the Potential Water Bodies of National Importance Project were:

- To develop methodologies to identify water bodies of national importance for a range of values including natural heritage, recreation, culture and historic heritage, irrigation, recreation, energy, industry, domestic and tourism.
- To compile a list of freshwater bodies for each of the values identified above
- To secure nationally important natural, economic, social and cultural values of water bodies

The Maori Reference Group advised that it was inappropriate for individual water bodies to be identified as nationally important for Maori cultural values.

Identification of individual water bodies is inconsistent with the view that all water bodies are important to Maori for spiritual, physical and customary reasons. A methodology for determining water bodies of cultural and historic heritage value has been developed, however an initial list of water bodies is yet to be produced.

Despite the concern of the Māori Reference Group two important observations can be made;

- Where a water body is of both national importance and importance to tangata whenua, special co-management agreements and legislation have sometimes been established such as for Lake Taupo in 1926 and 1990, Lake Ellesmere/Waihora in the Ngai Tahu Claims Settlement Act 1994, and for Lake Horowhenua (various reserves and eel protection status).

Out of six categories rating national importance the Waimea featured in two. These were:

- Biodiversity dimension of natural heritage
- Irrigation (Presently is rated twelfth in terms of farm gate GDP generated of any river in NZ @ \$16 million/ year from 4800 hectares irrigated)
- The Waimea was not ranked under the Geodiversity, Recreation, Energy or Tourism categories.

1.7 Tasman District Council Planning Documents

There are three Tasman District Council Planning documents that are considered to be relevant to this CIA. These are (in accordance with the Resource Management Act planning hierarchy) Tasman District Council's Regional Policy Statement, the Tasman Resource Management Plan and the Waimea Catchment Water Management Plan. The relevant parts are briefly outlined.

1.7.1 Regional Policy Statement (Operative 2001)

Tasman District Council's Regional Policy Statement is a high level over-arching document for the sustainable and integrated management of natural resources in Tasman. There are a number of objectives, policies and methods within this document that are relevant to this CIA. One of the more important ones is contained in Section 4 – Tangata Whenua Interests;

Policy 4.2 In Section 4 – Tangata Whenua Interests

Council will seek protection of wahi tapu, water, ancestral lands, sites, coastal resources and other taonga from disturbance or contamination in a manner consistent with tangata whenua kaupapa and tikanga while acknowledging the significance of private interests in land and other resource users.

1.7.2 Proposed Tasman Resource Management Plan

The Proposed Tasman Resource Management Plan does not contain any particular objectives and/ or policies in regards to Tangata Whenua except a fleeting reference to the Council's obligations to Tangata Whenua under the RMA in Chapter 10. Further the Cultural Heritage part of the Plan has been integrated into Significant Natural Values and Cultural Heritage. Much of the focus of this section focuses on the maintenance of biological diversity and little on things important to Māori. It places the later in the "too hard basket" and dilutes cultural heritage matters that appeared in earlier versions of the proposed TRMP. These issues are of major concern to Tangata Whenua and have been raised a number of times in different forums.

Part V – Water applies to all uses of water including taking, using, diverting and damming water, and the management of water quantity. Part V contains objectives and policies that are relevant to this CIA. These are extensive and are not listed for reasons of brevity. They are contained in 3 Chapters.

Chapter 30 deals with the water issues concerning the availability of water in water bodies and inshore coastal water for abstractions, diversions and use, and contains the objectives and policies for managing the quantity of water in water bodies and inshore coastal water throughout the District.

Chapter 31 states the rules applying to the taking, using, diverting and damming of water in water bodies and inshore coastal water.

Chapter 32 states the information requirements for water permit applications and coastal permit applications.

Part VI – Discharges particularly Chapter 33 – *Discharges to Land and Freshwater* is also relevant to this Cultural Impact Assessment. Chapter 33 attempts to address issues associated with the discharge of contaminants to land and fresh water. It acknowledges that contaminant discharges from land use

activities can cause adverse effects, and that the community expects that some level of discharges will be occur, but also that the adverse effects of discharges will be avoided, remedied or mitigated. The Waimea Water Augmentation Scheme is not directly related to discharges to water. However, the intensification of landuse that will inevitably arise from increased irrigation has the potential to increase discharges to freshwater.

1.8 Tangata Whenua Planning Documents

There are two Tangata Whenua Planning documents that are considered to be relevant to this CIA. Both relate to the management of Eels. These are Te Waka a Maui me ona Toka Mahi Tuna: South Island Eel Management Plan and Te Tau Ihu Mahi Tuna: Nelson/ North Marlborough Eel Management Plan. A third document Iwi Management Plan for Tasman District (working title) is yet to be developed. This will be discussed first.

1.8.1 Iwi Management Plan for Tasman District (working title)

Presently there is no iwi management plan as per Sections 61, 66 and 74 of the Resource Management Act, 1991 for the Tasman District. This has been of some concern to Tangata Whenua. However there has been some recent progress in this regard. Tasman District Council has indicated that it may be able to lend support for the preparation of such a plan. As such some initial progress has been made but it will probably be a year or more before a draft plan will be available.

The Iwi Management Plan for Tasman District will be a written statement by the manawhenua iwi of Tasman District. It will be split into four sections covering the areas of Mohua, Motueka, Waimea and Nelson Lakes. It will consolidate iwi knowledge on the sustainable management of natural resources in the district. It will provide a framework and guidelines to facilitate the process of building resource management strategies for the sustainable management of natural and physical resources. It will also attempt to address a number of resource management issues including those pertaining to freshwater and its management. This Cultural Impact Assessment will assist in the development of the plan and in turn outcomes of the planning process involved in collating the plan will assist the development of this CIA.

1.8.2 Te Waka a Maui me ona Toka Mahi Tuna: South Island Eel Management Plan (1997)

Te Waka a Maui me ona Toka Mahi Tuna: South Island Eel Management Plan is an iwi management plan as per Sections 61, 66 and 74 of the Resource Management Act, 1991. The document pertains to all of the South Island and all of the tribes of the South Island. It contains information on the importance of eels to Maori, the customary rights to the eel fishery of Maori, the state of the South Island eel populations, various options for the management of eels and recommendations for the long-term sustainability of the fishery.

1.8.3 Te Tau Ihu Mahi Tuna: Nelson/ North Marlborough Eel Management Plan (1996)

Te Tau Ihu Mahi Tuna: Nelson/ North Marlborough Eel Management Plan is an iwi management plan as per Sections 61, 66 and 74 of the Resource Management Act, 1991. It contains information for the management of eel fisheries more specific to the top part of the South Island including the commercial and customary fisheries of the Waimea and its tributaries.

1.9 Conclusion

Te Tiriti o Waitangi/ The Treaty of Waitangi 1840, particularly Article 2, conferred upon Tangata Whenua a right in respect of full exclusive and undisturbed possession of our land and estates, forests, fisheries and other properties/ taonga¹⁶. The preceding catalogue of pieces of legislation, policies and statements (these being the Resource Management Act 1991, the Local Government Act 2003, and the Tasman District Council's and Tangata Whenua's policy documents all affirm the manawhenua status of Tangata Whenua, our role as kaitiaki and the relevance of kaitiakitanga.

The involvement of Tangata Whenua kaitiaki in the management and monitoring of natural resources in the Waimea rohe is most important to fully recognise manawhenua tikanga values. This includes, but is not restricted to enabling

¹⁶ The Treaty of Waitangi refers to "other properties" whilst Te Tiriti o Waitangi refers to "other taonga".

Tangata Whenua to fulfill our role as kaitiaki and practice kaitiakitanga over these nga taonga tuku iho.

2.0 Cultural Impact Assessment Background

2.1 The Problem – A Lack of Water in the Waimea

The Waimea River and its tributaries including the Wairoa and Lee Rivers are the water sources that recharge the aquifers that supply industrial, irrigation and domestic water to the Waimea Plains and Richmond urban area. The problem is that the current demand for water in the area outstrips the ability of the river system to supply water. This is particularly noticeable during a dry summer. The most recent studies carried out by Tasman District Council shows water resources to be over-allocated in the Waimea Basin by 22% in drought conditions. This has meant that at times quite severe water restrictions have had to be imposed by the Council on water users.

Drawing off excess water beyond which the river system is able supply in a sustainable way, both from groundwater and the river can have significant detrimental effects. This has not only caused significant production cutbacks for irrigated crops leading to economic loss, but also affected the important environmental values of the Wairoa/Waimea Rivers and the coastal springs. A threat facing the area is the possible infiltration of saltwater into the coastal margins and into aquifers that are used for water supply and irrigation. Should saltwater make its way into the aquifer it would obviously have a devastating effect on irrigators and all water users particularly those near the coast.

Why has this situation occurred? Over the last 160 years landuse in the Waimea and its tributaries (Roding, Lee, Wairoa and Wait-iti), both in the valleys and on the surrounding hills, has changed markedly. The native forests and wetlands of the valley have largely been replaced by farming. Exotic plantation forests have replaced the native forests on the hills. These rivers have always been naturally low in the summer, however these changing landuses along with drainage of wetlands, the construction of stopbanks, the lowering of the riverbeds by gravel extraction and river realignment have contributed to an overall lowering of the water table and a reduction in water availability.

Demand for irrigation, urban and industrial uses has at the same time been steadily increasing due to continuing economic growth in the area. Forest plantations in the catchment have also reduced water availability to the

groundwater system. Because of the nature of the Moutere gravels and the local climate the negative effects of these planted forests on water yields are amongst the greatest in New Zealand (Duncan 1993, cited in Rosoman 1994).

Prior to the early 1980's the Tasman District Council's predecessor allocated water in the Waimea on a "as requested" basis. By 1983 the worsening situation had become apparent with summer water demand outstripping supply. Since this time it has increasingly become difficult to obtain water permits. Some users have experienced less flow in their wells due to increased pressure on the aquifers. A number of measures to date have been taken. These have included some users deepening their wells. This is not a long-term solution, however. The Council has at times introduced restrictions such as water rationing in order to maintain minimum flows, but this has impacted economically on farmers. Some farmers have changed to crops that require less water or have built water storage facilities. This is not always possible because the farmer has to have an economic incentive to change crops in the first instance or suitable land has to be available to construct a dam in the second. Presently a community dam at Kainui is being constructed to alleviate the problem in the upper Wait-iti. A similar storage facility is being studied for the Waimea Plains which is the subject of this Cultural Impact Assessment.

Presently around 3700 hectares of land has water permits for irrigation, but according to the Council a further 1500 hectares could be irrigated if more water was available. At the same time if there was more water in the system potentially this could improve the environmental and recreation values of the Wairoa/Waimea as well as reducing the risk of saltwater intrusion of the aquifer.

2.2 A Brief History of the Waimea Water Augmentation Study

Over the years TDC and its predecessors have undertaken investigations into the surface water and ground water hydrology of the Waimea Plains and looked at options to accommodate the water demand/supply situation in low flow times (usually summer). In 1991 the council adopted the Waimea Catchment Water Management Plan, which set minimum flows and allocation limits for the summer water resource. This resource is now fully allocated and no additional summer allocations are available except through cancellations, transfer or relinquishing of existing permits, particularly in the Wai-iti Zone (Tonkin & Taylor 2002).

In 2002 a plan for the upper Wai-iti was developed by TDC and the Wai-iti Water Augmentation Committee. According to TDC the water resources of the upper Wait-iti are presently over-allocated by 70% in drought conditions. A decision was made to construct a dam to harvest and store of water during the wetter months and then slowly release water into the waterway during the drier months. The Kainui Dam at Hiwipango has been recently completed (late 2005). Water from the dam will be gradually released back into the stream to augment the natural flows of the Wai-iti River. This water will then be available to down stream users to use for irrigation from the ground water system. No pipes are required using this system¹⁷.

The Waimea Water Augmentation Committee was established to investigate various options to try to address a similar problem of over-allocation in the Waimea Basin as well as allow for future economic growth. The committee is made up of water users in the Waimea and Tasman District Council staff¹⁸. Tangata Whenua are also represented on the committee. The committee decided to carry out a feasibility study of water augmentation opportunities in the area. This feasibility study is intended to provide the community with the necessary information to make an informed decision on whether or not to proceed with planning for water augmentation in the Wairoa/ Lee catchment.

In mid 2004 a detailed brief about what was required for the feasibility study was completed by the WWAC. It was sent out to a range of consultants and service providers in early September 2004. In November 2004 a consortium lead by Tonkin and Taylor Ltd. was awarded the contract to carry out the feasibility study. Tonkin and Taylor were awarded the contract because of their experience in water resource engineering and also have a local office in Nelson.

By April 2005, an assessment of water storage options had been completed with the number of possible sites reduced to five out of an initial 18 sites identified. By July 2005, the number of potential sites had been reduced to three including a site in Pigeon Valley. The Pigeon Valley option was soon dropped because of community opposition as well as the cost of additional infrastructure requirements beyond that needed in the case of the other two options. More

¹⁷ There has been talk of incorporating a hydro-electric scheme into the water augmentation scheme. This discussion does not form part of this cultural impact assessment.

¹⁸ The Wai-iti Water Augmentation Committee has no legal status or powers. It was established to give advice to TDC.

detailed information is now being sought for Site 11 – Upper Lee River and Site 15 – Upper Wairoa River, Left Branch.

The WWAC and TDC worked with ESR (Institute of Environmental Science and Research¹⁹) to carry out community surveys and workshops in January and February, 2005. A number of workshops were carried out and surveys completed in order to gauge the values that the community places on the Wairoa/ Lee rivers. A report was subsequently completed and presented to Council.

The Cawthron Institute was commissioned and completed a review of existing biological data from the Waimea Catchment. A report was submitted to WWAC in June 2005. This data was considered to be vital in terms of making decisions in terms possible storage (dam) locations.

There were gaps in the data collated by Cawthron so the Tasman District Council, Fish and Game and the Department of Conservation collaborated with in a summer programme gathering more ecological data from the Lee and Upper Wairoa Rivers. Water flow, fish and ecological survey were carried out between January and March 2005 to enhance the data collected by Cawthron.

MIRMAK was engaged to carry out a Cultural Impact Assessment as part of the the study phase of the project. A contract between Ngāti Rarua Atiawa Iwi Trust (acting on behalf of MIRMAK) and Tonkin and Taylor was signed in June 2005 for the completion of works.

2.3 Background to the CIA and the Process to Date

In April 2004 a Cultural Impact Assessment was completed for the proposed Kainui Dam (Wai-iti Augmentation Scheme) by Tangata Whenua ki Whakatū. In the document Tangata Whenua acknowledged the Tasman District Council for financially supporting both the process and document. Unfortunately there was a considerable time delay between iwi's request for a CIA and the decision to grant this request and make funds available. This delay meant that some of the recommendations that Tangata Whenua made in the CIA were unable to be incorporated into the final proposal. Further, concern was expressed that no Tangata Whenua representative was involved at any decision making level.

¹⁹ ESR are a Crown research institute providing consultancy services in environmental science.

For the Waimea Augmentation Scheme feasibility study this process has been markedly improved upon from the perspective of Tangata Whenua. Consultation with iwi began at an early stage of the project. Barney Thomas was appointed as a Tangata Whenua representative on the Waimea Water Augmentation Committee. When the detailed brief was developed by the WWAC a cultural impact assessment was included as a key component of the feasibility study rather than something “tacked on later”. As stated above MIRMAK was engaged to carry out a Cultural Impact Assessment via Ngāti Rarua Atiawa Iwi Trust (acting on behalf of MIRMAK) in June 2005.

On the evening of 21 March 2006 a presentation was made to the Waimea Water Augmentation Committee outlining the draft Cultural Impact Assessment. The focus of the presentation was on the potential impacts of the Waimea Water Augmentation Scheme on the Cultural Values of Tangata Whenua ki Waimeha (chapter 5) as well as recommendations by iwi on changes to help mitigate these effects (chapter 6). While the presentation received positive response from the WWAC discussion was purposefully limited. WWAC members were asked to take away copies of the document, review it and report back to Tangata Whenua at a later date.

On the evening of 5 April 2006 Tangata Whenua once again met with the WWAC for their response. Discussion was lively. A number of suggestions were made by the WWAC to update the CIA and take into account the WWAC response. Tangata Whenua were hesitant to change much of the document (both at the meeting and since). However, some changes were made. These are bulleted pointed below.

- In 5.1.1 *A potential reduction in the spiritual values of the Waimea*. Concern was expressed by the WWAC over **actual** negative effects on the wairua and mauri of the Waimea as opposed to concerns over **potential** negative effects. The emphasis has now been placed on potential negative effects.
- In 6.0 *Recommendations*. A footnote has been added outlining the belief by the WWAC that to put a condition requiring a clause within the resource consent documents and other relevant documents associated with this proposal “*that future Treaty of Waitangi Tribunal outcomes will be recognised*” may be *ultra vires*.
- Under each of the Chapter 6 *Recommendations* the final paragraph outlines in brief the WWAC response to the particular recommendation. This includes the support or otherwise of the WWAC.

3.0 A Maori World View

3.1 Introduction

Each culture in the world has a basic perspective or set of fundamental beliefs that forms the framework of that culture. These perspectives or beliefs are sometimes referred to as their worldview. Worldviews help cultures and individuals within cultures to understand and make sense of the world around them and their place in it. Generally a culture's worldview is so pervasive and inherent that most people live out their world view perspective without ever realising it. Individuals are usually unable to articulate their own worldview even if they are asked about it. Individuals within a culture rarely question their own worldview let alone acknowledge that other valid worldviews do or may exist. This often leads to inherent difficulties in cross-cultural communication and people from different cultures "talking past each other".

Chris Gousmett in his essay: "What is a Worldview and Why Would I Want One" says "a worldview is an everyday, ordinary-language description of the world, that shapes and guides our lives, helping us to understand, explain and explore that world around us, and everything in it, and how these are all related to each other, by giving us away in which we see them. In this sense then, it is *"the comprehensive framework of ones basic beliefs about things and their relationships."*

Even though the majority of people in Western countries today do not particularly subscribe to religious beliefs this worldview is so pervasive it colours the way we think and see the world. Unfortunately the spread of the Western worldview has often been at the expense of indigenous worldviews. The subjugation and marginalisation of the Maori worldview in New Zealand/Aotearoa is typical of the fate of worldviews around the world. Today, however, the Maori worldview is re-emerging as a valid and relevant perspective of the world. This has come about both out of respect for the people and culture but also for more pragmatic reasons. For instance, the holistic nature of the Maori worldview is increasing being recognised as having the ability to deal with quite complex environmental and cultural issues that the reductionist scientific worldview struggles with.

3.2 Te Ao Maori

As revealed above Te Ao Maori is based on philosophical premises very different to those held by western European people and culture. In Maori philosophy creation plays a fundamental role. It must be noted that there is something that is known (or not known) as the Io tradition²⁰; Io being the Supreme Being from whence Papa and Rangi originated. Much of the Io tradition is deeply sacred. In former times Io was only discussed between those who could be entrusted with this sacred knowledge. In fact it was so intensely sacred in that even the utterance of “his” name was avoided on all ordinary occasions. The Io tradition has a degree of complexity and sacredness that is way beyond the scope or business of this report.

The account of Rangi and Papa is generally the one used to describe creation. Irwin (1989) gives his version that is quoted below, however, it must be noted that there are different versions of the Rangi and Papa narrative some also involving Tangaroa.

“Ranginui (Sky father) looked down upon Papatuanuku (Earth mother) and, loving her, descended and mated with her. Locked in deep embrace they produced numerous progeny (in some accounts 70 in number) all of whom were male. These offspring were imprisoned between the primeval parents in stifling darkness. Faint glimpses of light filtered in and the children became restless and anxious to escape to the world of light (*Te ao marama*). After much discussion amongst the brothers some agreed to force the parents to release them if *Rangi* and *Papa* would not agree to setting them free. Those sons (some 28 in number) made a number of abortive attempts to escape. *Tumatauenga* considered the most effective means would be to slay the parents but the others disagreed. ... Finally *Tane* lay down on *Papa*, bracing his feet against *Rangi* and extending his arm against *Papa*. Upside down and struggling fiercely, with the brothers giving him support as they were able, the reluctant parents were inexorably forced apart. Finally separated, *Rangi* became the Sky Father and *Papa* the Earth Mother. Following the forcible separation, *Rangi* and *Papa* grieved for each other, *Rangi*'s tears becoming the rain and *Papa*'s the rising mists.” (Irwin, 1989, p13).

²⁰ The existence or non-existence of this tradition is open to debate.

The other important fundamental concept of creation is the creation of humankind. Once again referring to and paraphrasing Irwin (1989). The offspring of Rangi and Papa were all male. “*Tane* produced trees, birds, insects and a wide range of natural phenomena ... but always the female element eluded him. Finally he inquired of Earth Mother who bade him go to the beach *Kurawaka*, and there gather the red earth into human form. This, with the aid of his brothers, he did. They made a figure resembling themselves. *Tane* then breathed into the form *hauora* (life giving force) and it stirred, sneezed and breathed and woman had entered the world. Following purification rites to remove the *tapu* of creation, *Tane* named this first woman *Hineahuone* (earth-formed maiden). *Tane* now mated with *Hineahuone* and she conceived and bore a daughter, *Hinetitama*. Subsequently *Hineahuone* bore *Tane* a further ten daughters and it is from these that humankind (*te ira Tangata*) is descended.” (Irwin, 1989, p14).

As such all things in the natural world are seen by Maori as the progeny of Papa and Rangi including humankind. People are thus seen as directly related and thus connected to all (living and non-living) things. This common bond places people firmly inside the natural environment, they do not exist outside it. If something is done to the natural environment (whether positive or negative) then it is done to oneself. The personification of the natural environment through various atua (spirits) reinforces this belief. If a water body is polluted for example then not only is the water body polluted but also is the atua as well as oneself.

The Waitangi Tribunal in the Muriwhenua fishing report outlined the following principles governing the basis for Maori and their relationship with the environment (from James, 1993):

- A reverence of the total creation as one whole.
- A sense of kinship with all fellow beings. This is illustrated through genealogical (whakapapa) ties of all natural resources in the universe.
- A sacred regard for the whole of nature and its resources as being gifts from the gods.
- A sense of responsibility for these gifts as the appointed stewards, guardians and rangatira (collectively kaitiaki).
- A distinctive economic ethic of reciprocity. What you take from the environment you return in kind.
- A sense of commitment to safeguard all of nature’s resources (nga taonga tuku iho) for future generations.

At a recent Tangata Whenua ki Whakatu environmental indicators hui (partly funded by Nelson City Council) the topic of a Maori worldview was raised. It was agreed by those attending the hui that:

- There is a lack of understanding about Maori beliefs and values, lores and laws (Tikanga Māori and Mātauranga Māori).
- Tangata Whenua beliefs are unique.
- Tangata Whenua inherit kaitiakitanga obligations (refer to Chapter 1.2).

3.3 Central components of the Maori perspective on the environment.

There are a number of central components of the Maori worldview that affect the way the natural environment is both perceived and managed. These include (but are not restricted to) tikanga, kaitiakitanga, whānautanga, mātauranga, mauri, wairua, tapu, utu, whakapapa, kotahitanga, manaakitanga, and mana. Each of these will be briefly discussed. In later chapters these words or concepts will be used as tools of analysis in examining the issues.

Before doing so a number of things must first be acknowledged. These are:

- That these concepts cannot be directly translated from Maori to English (due in no small part to differences between the worldviews of each). When one attempts to describe the concepts and values of one culture using the language of another culture misinterpretations invariably arise. Often a dominant cultural blanket overlays the culture of the less dominant which can also lead to misinterpretation.
- That many of these words are both amorphous and contextual. They are concepts similar to the English word “sustainability” which can be defined by different people in different ways within different contexts. This makes the concepts extremely difficult to define outside of a context. These Maori concepts like the word “sustainability” are best explained within a context.
- And that the properties and characteristics of these words differ from iwi to iwi, hapū to hapū and whanau to whanau. They are best described in direct discussion with iwi, hapu or whanau. Each iwi, hapu or whanau therefore reserves the right to define these concepts in any way they wish to do so and change the definition and use of these concepts at any time. As such these definitions are relevant to this document only. They may or may not be relevant or true for other discussions or documents.

Tikanga or *Tikanga Maori* is a general concept to describe Maori customs or customary practices. These practices evolved down through the centuries as Maori developed a relationship with and learned to live sustainably within the environments of Aotearoa. The word *kawa* is often used in association with tikanga. *Kawa* can be described as “the etiquette” or “the right way of doing things”. *Kawa* is how Tikanga is implemented and it is usually specific to a marae, an iwi, a hapū or a whanau.

Kaitiakitanga as touch on previously is about the stewardship or guardianship of the environment (or *ngā taonga tuku iho*). It includes the more modern term “sustainable management”²¹. In former times kaitiaki (or tiaki) were on one level represented by an atua (spirit), on another level by the manawhenua iwi²² and on another level by an individual. The role of each was to manage a particular natural resource in a healthy and productive state. The three: atua, people and individual acted in unity to exert a control on each other and maintain the resource and its physical and spiritual productivity, potential and balance.

Whānautanga (or sometimes whanaungatanga) is derived from *whanau* or family and refers to relationships or bonds of kinship. In the traditional Maori worldview relationships were all important – relationships between people; relationships between people and the physical world; and relationships between people and the spiritual world. In traditional society it emphasized the role and responsibility of the individual as part of a collective. It gave people a sense of belonging, togetherness, and relatedness. *Whānautanga* remains a strong part of modern Maori society and continues to shape the relationships between Maori people and the environment.

Mātauranga or *Mātauranga Maori* can be described simply as “traditional and contemporary knowledge”. Mohi (1993) defined *Mātauranga Maori* in a traditional context as “the knowledge, comprehension or understanding of everything visible or invisible that exists across the universe”. Within a modern context he described it as “Maori research, science and technology principles and practices” (Mohi, 1993). *Mātauranga Maori* is not based on Western “objective” notions or models of science, however. Its parameters are wider than this and includes such things as traditional religion, belief and ceremony. Its role is to preserve and

²¹ Though the term “sustainable management” is new the concept is ancient.

²² More usually hapu or whanau.

protect (while utilising) the environment and all taonga related to the environment.

Mauri is a central component of the Maori perspective on the environment. It can be defined as the life principle, life supporting capacity, or life force present in all things both animate and inanimate. The presence of Mauri in all things requires people to appreciate and respect that resource. The overuse, depletion or destruction of natural resources leads to a diminishment of Mauri. This is generally unacceptable to Tangata Whenua. As such things that diminish the Mauri of a resource cannot be supported and things that enhance Mauri are to be encouraged. *Mauri* and *ora*²³ are often used together as in the exclamation *Mauri ora!* This phrase being used in karakia to evoke the Mauri in things.

Wairua (or sometimes wairuatanga) is closely associated with Mauri. It can be described as the spiritual element or the spirit of things, matters and deeds.

Tapu is often translated to English as “sacred”, however the concept is much wider than this. The term *wāhi tapu* is used to describe sacred sites. Tapu is also used to protect the Mauri in things. James (1993) describes it as “the status accorded to all elements of the natural world in recognition of the Mauri that exists in them. Recognition of tapu involves an appreciation of and respect for another life force and other life in general”. Further, “Tapu is also used as a protective measure, a social control, a means for developing an understanding and awareness of spiritually and the divine origin of all things” (James, 1993). The complementary word *noa* is often associated with tapu: meaning “free from tapu”. The word *rahui* is also linked to tapu meaning “a temporary restriction”.

Utu (or tau utuutu) can be defined as “revenge”. This is a limited understanding of the concept particularly as it relates to the environment. More correctly it can be defined as “reciprocity” or an “ethic of reciprocity”. This is expressed in acts of always giving back or replacing what you take or receive. If one takes something from the environment then one is obliged to give back to it. In this way the physical and spiritual environment is kept in balance. It also includes the principle that one should only take enough for ones own needs i.e. enough to feed oneself and ones family.

²³ *Ora* translates to “life”.

Whakapapa is often simply defined as “genealogy” in reference to people. However in the Maori worldview whakapapa is not only about the relationship between people through generations but also about the relationships of all life forms and phenomenon to each other as well as to people and the atua (spirits and gods). In the Maori worldview all flora and fauna have a whakapapa. Whakapapa thereby assembles the natural world in a fashion similar to modern biological classification systems. However, the classification system of whakapapa relates life forms and phenomenon²⁴ back to their place in ecology. It also demonstrates the connectivity of all life and that “all things are connected” not only to each other but also to the atua and Tangata Whenua. In contrast the Western scientific model uses the Latin language to codify flora and fauna based on similarities between genera and species. That model draws no links between people and gods (or God); in fact it serves to take them out of the understanding.

Kotahitanga (or Whakakotahitanga) is usually defined as one or some of the following; “oneness”, “unity”, “solidarity” or “holism”. On one hand kotahitanga is about acknowledging and respecting individual differences but on the other hand it is about the desire to reach consensus and seek unity.

Manaakitanga can be defined simply as “hospitality”. It is about reciprocal and unqualified acts of giving. It includes the concept of *koha* or giving and accepting gifts. It is often expressed through the provision of local delicacies of *kai* by Tangata Whenua to *manuhiri* (visitors). The inability to provide manaakitanga to manuhiri can be an intense source of embarrassment and loss of *mana* (status and pride) to Tangata Whenua. This is invariably due to a loss or degradation of the resource base both in terms of people and food.

Mana is often defined simply as status and pride. It is much more than this, however. It also includes the ideas of authority and legitimacy as in *Mana Motuhake*, *Mana Whenua*, and *Mana Moana*: these being legitimacy to control, manage, and administer land, water and marine resources. Mana is gained both through whakapapa and the management and utilisation of these resources. The wise management of resources will lead to a rise in mana within an individual, whanau, hapu or iwi. Poor management and/or the degradation of a resource will lead to a loss of mana. Mention must also be made of *tino rangatiratanga* (or *rangatiratanga*). Rangatiratanga means “self determination” or the ability to determine ones own destiny and is also a source of mana.

²⁴ Soils, minerals and other phenomenon also have whakapapa based classification systems.

3.4 Conclusion

This chapter has attempted to demonstrate that the Maori Worldview and the concepts it employs are quite different to the Western Worldview. Several authors consider that the most basic aspect of Maori culture which distinguishes it most sharply from that of the Western Worldview is that it puts spiritual and communal matters ahead of material and individualistic needs.

Over the last 200 years the importance of the Maori Worldview has been eroded across the political landscape of Aotearoa/ New Zealand. This began with the denigration of Rangī, Papa and the other Atua with the arrival of the missionaries and Christianity. This continued with the gradual loss of control by Tangata Whenua over land and other resources. The strengthening of the Western Worldview's focus over this time on the individual and his material needs has further eroded the values inherent in the Maori Worldview. It is of no coincidence that over this time the condition of natural resources have generally degraded and the amounts available for utilisation have diminished. This has been recognised of recent and the reversal of this trend both in the condition of natural resources and the relevance of Te Ao Maori is most welcomed.

4.0 A History of the Waimea including Wai-iti and Wairoa

The Wairoa Catchment including the Wairoa River and its main tributary the Lee River covers some 33,655 hectares to its confluence with the Wai-iti where they become the Waimea. The service area (land that could potentially be irrigated) if a storage dam is constructed is 5,200 hectares. The area under investigation for this Cultural Impact Assessment encompasses the entire Lee/Wairoa catchment and the service area rather than any specific location of a dam. In the past the lower reaches of the Waimea were culturally connected to the upper reaches though the seasonal use of these rivers, the valleys and their resources by the Tangata Whenua of the day. Such a holistic approach is consistent with Te Ao Māori that is the Māori World View and our understanding of Ngā Taonga Tuku Iho or the treasured resources of the natural environment.

4.1 A Brief Tangata Whenua History of Waimeha

The following item is a paraphrased reprint of an article written by John Mitchell in 1994²⁵. In the article he acknowledged kaumātua and others of Ngati Apa, Ngati Koata, Ngati Kuia, Ngati Rarua, Ngati Tama, Ngati Tumatakokiri and Te Atiawa. Once again we acknowledge these people. It must be reiterated, however, that this narrative is only one narrative and other whanau, hapu or iwi may have others that are equally as valid. Curly brackets { } indicate where our own statements have been inserted.

“The estuary, islands, and neighbouring fertile plains of the Wai-meha (Waimea) Basin have a very rich Maori history, reaching back to the earliest tribes known to have populated the South Island. The legends of Rakaihautu, probably the earliest explorer from Hawaiki to the South Island, record his landfall at Nelson Haven {Paroroa (also Paruroroa)} circa 800A.D and the beginning of his saga of discovery of the local landscape as he set out to traverse the entire island to Bluff.

{Traditional narratives from most iwi throughout New Zealand have it that following Rakaihautu’s landing he transferred the command of his waka, Te Uruao, to his son Rokohuia. They bid farewell and Rokohuia sailed down the

²⁵ for Beca Steven dated 4 November 1994 concerning the Proposed Disposal of Biosolids to Rabbit Island.

West Coast. Rakaihautu and his party traveled by foot overland pioneering their way south by way of the Waimea plains. When Rakaihautu reached the Kawatiri (Buller Valley), he took his magic ko (digging tool) and started digging in the ground. In due course the holes filled with water and became the lakes Rotoiti, Rotoroa and Rangatahi (Lake Tennyson). He carried on his long trek further south creating and naming lakes, mountains and other features throughout the South Island. He rejoined his son again at Murihiku near modern day Bluff. From there they traveled north before finally settling on Banks Peninsula, and in time their descendants become the iwi Waitaha}

“There is considerable archaeological evidence of this very early occupation of the study area and nearby environs at Appleby and Waimea West. Among the artifacts which have been discovered are implements and especially personal ornaments of Pacific Polynesian designs which have been identified as being at least 800 years old; they are typical of the Waitaha and Rapuwai occupation period. {This is often referred to as the Archaic period of Maori or Polynesian settlement}

“Carbon dating has indicated that the nearby Waimea gardens of over 1,000 acres were occupied as early as the 14th century. These gardens are not only extremely large in extent {some 480 hectares} but show evidence of massive labour intensity in the enhancement of soil fertility and texture through the addition of thousands of tonnes of ash, sand and gravel over several generations of cultivation. These gardens rank as one of the countries largest agricultural projects of the entire pre-European period. The original cultivators may have been the Waitaha/ Rapuwai already referred to, but Ngati Kuia {and others} of the later “Kurahaupo” waka from Hawaiki probably continued these activities after the withdrawal of the earlier tribes from the region.

“During the late 1500s the Ngati Tumatakokiri people from the Wanganui district migrated to the north-western South Island districts of Nelson, Motueka, Golden Bay and the West Coast, and for a period there was also a community of Ngai Tara from Hataitai (Mt Victoria, Wellington), under their chiefs Kahukura and his son Tumaro, living at the Waimea river and estuary. It is believed that this community of Ngai Tara built a large pa close to the site of the present Appleby School.

“Ngati Tumatakokiri was virtually annihilated by Ngati Kuia, Ngati Apa and Ngai Tahu by the late 1700s – early 1800s. Ngati Kuia and Ngati Apa dominated Whakatu and Waimea from that time until the next invasion from the north in the late 1820s, which was that of the allied tribes Ngati Koata, Ngati Rarua, Ngati Tama and Te Atiawa, under the leadership of Te Rauparaha of Ngati Toa. There is little evidence that these latter tribes established permanent settlements of the Waimea, although Te Puoho of Ngati Tama cultivated potatoes there, and Te Atiawa chief, Huriwaka, is thought to have taken over an old Ngati Apa pa for a time” (Mitchell and Mitchell, 1994).

Tangata Whenua usually refer to this “invasion” as the raupatu. Raupatu does not equate directly with the English meaning of the word “conquest”. Raupatu can also mean agreement with the preceding iwi. It always involves an obligation to care for Ngä Taonga Tuku Iho or the natural resources of an area. Such a role is commonly referred to as a kaitiaki or guardianship role and is held by the manawhenua iwi (or Tangata Whenua) of an area or rohe.

Apart from the Waimea Pā²⁶ near Appleby School another important but smaller Pa further up the Waimea river was located at a place near where the Wai-iti and the Wairoa meet. This Pa was called after a tribe or chief called Pohare (Cotterill, 1842, p11)²⁷. The *Nelson Examiner* of 9 April 1842 mentions how T. J. Thompson was surveying the area and after burning off some fern revealed the Pohare Pā site which reminded him of an old Roman camp. From the Pohare Pā natural resources from both the Wairoa and Wai-iti valleys were managed, looked after and harvested on a seasonal basis (See Map).

In former times the Waimeha was the gateway to the ara (trading route) between Whakatu (modern day Nelson) and Te Tai Poutini (the West Coast). The route generally being Whakatu, Waimea, Wai-iti, Kainui, Hiwipango, Motuweka, Motupiko, Kikiwa, Rotoiti, Kawatere, Porika, Rotoroa, Tiraumea, Tutaki, and Matakita²⁸ (Murchison). This recital of the route is but a brief of the memory map that Tangata Whenua used to find their way. Goods were often traded

²⁶ Elsdon Best identified three Pa around the Waimeha estuary in a letter to F.V. Knapp. One was called Te Korora²⁶ where Mokoroa was said to be the Chief there around the later part of the 18th Century. The other was called Tapuwae-nuku being the Pa of the Chief Te Mau-taranui. The location of these Pa is unknown but perhaps one of them was an alternative name for the Waimea Pā.

²⁷ Mitchell and Mitchell (2004) locate this Pā at Snowden’s Bush, Brightwater. It is nearly two kilometres between the two locations but one can only assume that Snowden’s Bush was more extensive than it is presently and may have extended downstream to near the forks.

²⁸ Also called Otapawa

between the Waimeha iwi and iwi from the West Coast meeting at Mātakitaki. This trading invariably took place on an annual basis providing the traders were on amicable terms. Kumara, dried snapper and argillite tools were the prized goods the Waimeha iwi had on offer; these being in short supply on the Coast. Raw and worked pounamu was the sort-after taonga that the West Coast Maori had to trade.



View in the valley of the Waimea River, Nelson district [1841], Charles Heaphy. Alexander Turnbull Library, Wellington, N.Z.

4.2 Ecology and Natural History of the Waimea

Virtually the entire Waimea catchment including the Roding, Lee, Wairoa and Wai-iti tributaries is contained within the Bryant Ecological District of the Nelson Ecological Region. There is a small portion of the Wai-iti that falls within the Moutere Ecological District. Most of the Waimea catchment is made up of steep hill country, rising to over 1700m (Mt Rintoul) and draining to the northwest. The geology is complex including sandstone and argillite as well as areas of

ultramafic rock, volcanic rock, greywacke and sedimentary rock. Soils vary greatly in structure and fertility. The climate is generally sunny and sheltered, with very warm summers, mild winters and moderate rainfall. The higher slopes are generally in DoC stewardship (Mt. Richmond Forest Park) and consist mainly of native forest. The lower slopes are typically in other tenure with landuse including conservation (or non-use), farming and exotic forestry (Walls and Simpson, 2004).

As part of the feasibility study commissioned by the Waimea Water Augmentation Committee the Cawthron Institute was engaged to carry out a review of the biological data of the Waimea Catchment. The report was completed in June 2005 (Hay and Young, 2005). It presents the current data available on the biology of the catchment and identifies gaps in existing knowledge so that these gaps might be filled and informed decisions made on the likely effects of an augmentation scheme. This chapter draws heavily on report and makes summary of those areas of particular interest to Tangata Whenua. The report however makes little mention of the natural vegetation or the present vegetation within the catchment. For a review of data relating to flora a report prepared for the Tasman District Council titled *Tasman District Biodiversity Overview* (Walls and Simpson, 2004) was drawn upon.

In line with tikanga Māori whereby humans are seen as an integral part of nature rather than existing outside of it, it was deemed appropriate to give a brief of the relationship between the catchment and those people that presently live in and/or utilise the natural resources within it. In March of 2005 a report was prepared by ESR (Institute of Environmental Science and Research) for the WWAC and TDC (Winstanley *et al*, 2005). This report explored and documented community activities in the Waimea catchment as part of the wider Waimea Water Augmentation feasibility study. The chapter below *4.2.3 People* draws heavily upon this document.

4.2.1 Plants of the Waimea Catchment

“Formerly the ecological district below the bushline (about 1200-1300m) would have been almost entirely covered in forest apart from the waterways. The alluvial valley flats and terraces supported towering podocarp forests of totara, matai, rimu, miro and kahikatea. On the hills was mixed beech-podocarp forest, in which black beech was dominant in drier sites and hard beech in wetter lowland places, whilst red beech and silver beech occupied most cooler

and mid-altitude slopes. Mountain beech was dominant on upland slopes, along with southern rata, Hall's totara and pahautea (mountain cedar). In sheltered coastal gullies were pockets of lush broadleaved forest containing tawa, titoki, pukatea, nīkau, hinau and tree ferns, accompanied by large podocarps. On the ultramafic areas was distinctive forest and shrubland, stunted by the unusual soil conditions and containing species found nowhere else. Above the bushline was tussock grassland, subalpine shrubland, herbfield and fellfield. Freshwater wetlands occurred in the valleys and would have included fertile lowland swamps with kahikatea, harakeke, cabbage tree and tussock sedge (*Carex secta*). Rivers and streams, including riparian ecosystems (trees, shrubs, flaxes, toetoe, etc.), would have made up an appreciable though not large portion of the district" (Walls and Simpson 2004, p46).

Most of the lowland forests and wetlands have been lost. What remains are fragments of beech forest, very small remnants of lowland broadleaved and podocarp forest, and a few small freshwater wetlands. There are considerable tracts of mid-altitude beech forest still, accompanied by regenerating native vegetation where the former forest has been cleared or burnt. "The upland forests and ecosystems at higher altitude are still present, though much diminished in ecological quality by exotic animal impact" (Walls and Simpson 2004, p46).

4.2.2 Animals of the Waimea Catchment

Invertebrates. The measurement of invertebrate numbers (both in terms of species and relative numbers) is often made to assess the health of invertebrate communities. However, this measurement is also an indication of both the quality of the ecosystem (i.e. water) as well as the health of associated communities (i.e. fish or birds) that feed on the invertebrates. The freshwater invertebrate communities through much of the Waimea catchment generally indicate a reasonably high water quality, particularly in the upper reaches. During low water flows invertebrate numbers have been observed to fall rapidly as water flows drop below about 1m³/s. Once river levels return to normal flows invertebrate numbers have been observed to recover quickly. This is also indicative of a healthy ecosystem. (Hay and Young, 2005).

In surveys taken on the tributaries of the Waimea mayflies and caddisflies dominated the samples taken. Since formal monitoring began in the catchment

(1988) 109 taxa²⁹ (genus and/or species) have been recorded in the catchment. The variety in macro-invertebrate numbers in the Roding tributary suggested to Hayes and Stark (1995) that this part of the catchment would rank very high on a national basis. However, they found that the density of invertebrates was relatively low compared to the nearby Maitai River. The pollution intolerant stonefly (*Zelandoperla decorata*) has been well represented in samples taken from the Waimea catchment. Although as might be expected they have not been found in samples taken from the lower reaches of the Wai-iti and the Waimea. Perhaps surprisingly the stonefly was not found at TDC's Roding River sample site. (Hay and Young (2005).

Fish (including eels). There have been 13 different species of native fish recorded from the Waimea catchment including the two species of eels. Two additional native fish species (giant kōkopu and lamprey) have been recorded in Pearl Creek, a spring fed stream that drains into the Waimea Inlet near the mouth of the Waimea River. This creek depends on groundwater from the Waimea River and as such could be considered to be part of the Waimea Catchment (Hay and Young, 2005). The table below lists the species of native fish and eels found in the Waimea.

Māori name	Common name	Species
Kanae, Aua, Matakawhiti	Yelloweye mullet	<i>Aldrichetta fosteri</i>
Tuna/ Hao & other names	Shortfin eel	<i>Anguilla australis</i>
Tuna/ Kuwharuwharu & others	Longfin eel	<i>Anguilla dieffenbachii</i>
Piripiripohatu/ Papamoko	Torrentfish	<i>Cheimarrichthys fosteri</i>
Taiwharu	Giant Kokopu	<i>Galaxias argenteus</i>
Koaro	Koaro	<i>Galaxias brevipinnis</i>
Inanga	Dwarf galaxid	<i>Galaxias divergens</i>
Para, Kōpakopako, Kopu	Banded kokopu	<i>Galaxias fasciatus</i>
Inanga	Inanga	<i>Galaxias maculatus</i>
Piharau/ Kanakana	Lamprey	<i>Geotria australis</i>
Kokopara	Upland Bully	<i>Gobiomorphus breviceps</i>
Pako, Tiipokopoko	Common Bully	<i>Gobiomorphus cotidianus</i>
Toitoi, Kopu	Redfin Bully	<i>Gobiomorphus huttoni</i>
Kokopara	Bluegill Bully	<i>Gobiomorphus hubbsi</i>
Paraki/ ngaoire & other names	Common smelt	<i>Retropinna retropinna</i>

²⁹ Taxa = A taxonomic group such as genus or species.

It is likely that other native fish species were present in the Waimea Catchment in the past and that the species that remain were previously more widespread. This would be particularly so for fish that prefer wetland habitat. The almost total drainage and conversion of the Waimea wetlands to pasture would have ensured this. The now extinct upokororo (grayling) was previously common in the nearby Motueka catchment and it is not unreasonable to assume that it was also found in the Waimea.

Birds. A survey of the native birds of the Waimea catchment has not been carried out. It would probably be safe to assume that the common native birds found in the adjacent Mt. Richmond Forest Park (which also forms the head waters of the catchment) would be found here. Uncommon birds identified from the Mt. Richmond Forest Park are whio (blue duck), kākāriki (yellow-crowned parakeet), kaka and kiwis (species not determined). Of these the whio are known to exist in low numbers within the catchment.

4.2.3 People of the Waimea Catchment

In March 2005 Winstanley *et al* completed a research document entitled *Water in the Waimea Basin: Community Values and Water Management Options* as part of WWAC's *Feasibility Study into Water Augmentation*. The purpose of this report was to seek an understanding of the values the community places on the freshwater resources of the Waimea catchment and to gauge the community's response to a variety of water management options. The Institute for Environmental and Scientific Research (ESR) who carried out the research also had its own research agenda which was aimed at improving community participation in water management as well as evaluating existing and different methods of participation.

ESR methodology involved the following parts:

- Review of literature relevant to this project. Unfortunately it appears that the Cultural Impact Assessment of the Wait-iti Water Augmentation Scheme was not included in the literature review.
- Ongoing observation of the process and involvement in the development of the feasibility study. This included attending the annual Motueka Integrated Catchment Management Field day which MIRMAK is party to.

- Stakeholder mapping. Tangata Whenua were identified along with a number of others groups as a “stakeholder”³⁰
- Individual interviews. These interviews included a meeting with NIRMAK. Unfortunately ESR did not meet with MIRMAK.
- Family survey. A survey was carried out of families who utilise the river and the values they place on it. It is not recorded if any Tangata Whenua whanau were interviewed.
- Focus groups. Discussions were held with residents of the Lee and Wairoa Valleys.
- Workshops. Two workshops were held. Iwi were represented at the workshop for interested members of the public.

From the various research methods ESR developed their document. Below is a **Summary of Research Findings**.

- Freshwater in the Waimea region is highly valued for irrigating productive land; supplying businesses with water for processing; for drinking water supplies; and for other recreational activities, thus contributing to the overall well-being of people living in the Tasman area.
- The Lee, Wairoa and Waimea Rivers are highly valued by Tasman (and Nelson) residents - as part of where they live by those with environmental or ecological interests; by those who express an aesthetic or scenic interest; by iwi with guardianship or kaitiakitanga responsibilities; and by recreational users of all ages.
- Sustainability was a value to which many participants subscribed. Access to, or the presence of, good quality and quantities of freshwater - whether for productive land use, enjoyment or for maintaining environmental/ecological integrity were activities that need to be sustained for future generations.
- People are generally supportive of storage options in the Upper Lee or Wairoa catchment areas, but for some there are 'conditions' attached to this support, such as financial contributions to a decided option being

³⁰ Generally Tangata Whenua ki Waimea are adverse to being identified as stakeholders preferring the term “partner”.

distributed equitably with those who benefit directly (irrigators) paying more than those who receive little or no benefit; and that TDC continue to investigate alternative means of encouraging or enforcing water conservation.

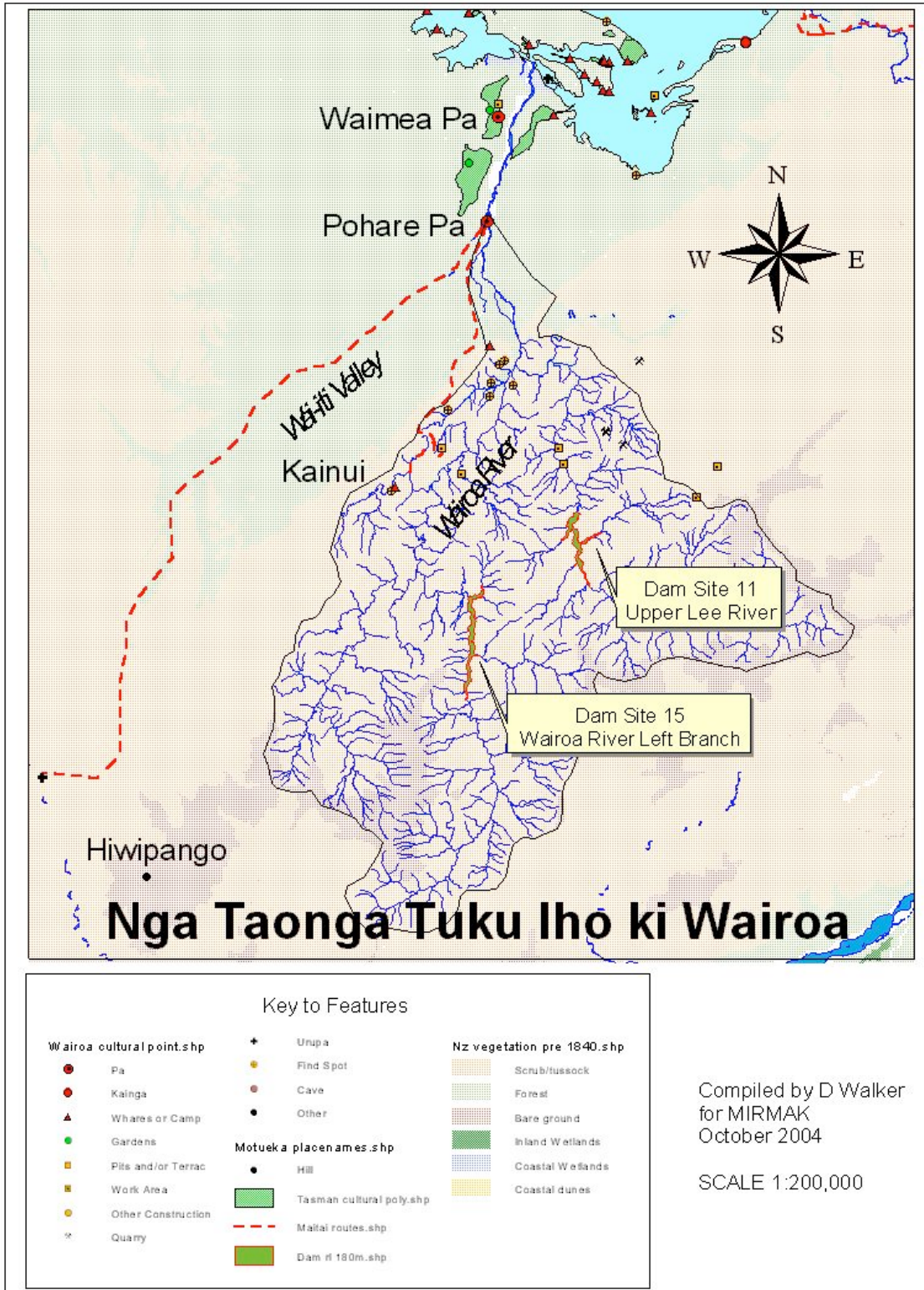
- Learning about water resources in the region, along with better water management and conservation initiatives are seen as a responsibility of everyone in the region, from TDC to individual households.
- Charging for water was seen as a mechanism for achieving more efficient use of water, but there was variability in how charges could be set: for example, by volume or by a formula that would determine the contribution of water to generating profits³¹
- Participants prefer win-win outcomes (for everyone) of decision-making, but also implicitly recognise that trade-offs may be an inevitable process in decision making. Where trade-offs are unavoidable, the criteria employed for trade-offs should be transparent.
- A number of the management options identified in the workshops and in the other data represent areas in which the Tasman District Council could engage in social learning initiatives to address people's lack of knowledge and/or understanding about freshwater management and decision-making.

4.3 Nga Taonga Tuku Iho of the Waimeha

In pre-European times the economy and sustenance of the Tangata Whenua ki Waimeha was predominantly based on the estuary, the swamps and the forests within the Waimea catchment. Whilst the estuary and its prolific ecosystem had something to offer for much of the year round, the inland resources were also an important resource.

An early surveyor, J W Barnicoat, described the Waimea Plain as three parts; with immense beds of flax, areas of fine grass and thick bush “the whole may be readily cleared by fire. The district is well watered besides the rivers several small streams flow from the hills. The little branch valley from the eastern hills (Wai-iti and Wairoa) abound with pigeons, parrots and many other birds including large numbers of ducks and waterfowl”.

³¹ One group in workshop one was 100% against charging for water.



Map 2: Nga Taonga Tuku Iho ki Wairoa including proposed dam locations

His friend and fellow surveyor J S Cotterill described his 1842 journey from the Waimea estuary up the Waimea River thus. “Leaving the mud flats, we crossed a large extent of land, covered in mānuka, bushes and grass, occasionally swampy but affording much good food for cattle”. He also noted that “Small woods and streams abound in this part, affording plenty of eels and ducks” (Cotterill, 13/01/1843). Upstream he described the area as “well wooded – from about a mile up the Wai-iti from its junction with the Wairoa a mixed forest extended back up the Wai-iti Valley, and over the hills on the West. On the plain the topsoil was two feet thick in places, and on the hills one foot”. In another account he described the wooded area as a “fine pine grove ... which contains a large quantity of timber, occasionally varied with open land”.

This forest was known to Tangata Whenua of old as Kainui. The name referred to its productivity and ability to provide a rich variety of food. The trees included kahikatea and pukatea in the wetter areas and tōtara, matai and rimu on the drier sites. Patches of ti kouka (cabbage trees) and tītoki were also present. The birds that were harvested included the pukeko, kereru, tui and kaka. Although these birds were numerous in these times the harvesting of these birds had to be strictly regulated by the appropriate kaitiaki because of the birds relatively low breeding rates. Kainui and the Waimea provided numerous raw products to our ancestors such as timber, building materials, medicinal plants (rongoa) and the veritable harakeke (flax) which was grown in the open swampy areas.

The kaitiaki of the upper Waimea would have lived for the much of the year at the Pohare Pā³². However, during bird harvesting they made use of more or less permanent camps throughout the Wai-iti and Wairoa. Within the Wairoa catchment two camp sites have been located: one at what used to be called “Budges Bush” on the Pig Valley Road and the other on the slopes of Mt. Heslington. The Budges Bush camp was likely to have been associated with seasonal harvest of birds. The Mt. Heslington site is likely to have been more of a sentry outpost. There were probably a number of other camps throughout the catchment. Some of these camps were used for the manufacture of pakohe (argillite) tools, the stone being quarried in places in the Wairoa Valley (See Map). Birds, other forest products and pakohe would have been traded with coastal kin down the Waimea for kaimoana and other coastal goods.

³² This would have fluctuated to a degree depending on the population in the Waimeha at the time. During periods of low population Pohare would have been used more as a seasonal camp. Whereas in periods of higher population Pohare would have been more permanently settled.

An interesting account was told in print by John Marris³³ in 1984 about two Ngāti Apa men. They lived at the Waimea Pā as youths during the early 1800's. During the raupatu by the iwi allied to Te Rauparaha in 1828 they escaped the attack on the Waimea Pā by Te Pūoho and his forces. They fled into the hills between the Wairoa and Wai-iti where they moved between various camps in the area which their people had previously maintained when hunting birds and working stone tools. They survived on the food of the forests and rivers like their forefathers before them. Some fifteen years later they were found by a party of surveyors on the edge of the bush to the south of what is now Pig Valley (Budges Bush). They took some convincing that it was safe to return to the Waimea Plains after their earlier experience at Waimea Pā. "However, after further reassurances they did come out and were able to find work with the settlers who came to know them as Tommy the Māori and Teapot. Teapot is probably an English corruption of Tipou but it was also said of the man that he enjoyed a cup of tea and always seemed to turn up when one was on the boil. They both had a reputation as being good trustworthy workers and were well liked by those that knew them" (Marris, 1984). Tommy is also mentioned in the same account as being party to a group who had a successful trip to Oyster Island in 1849 and returned with mussels and oysters. There was also supposition that Teapot Valley was named after Teapot as Tommy lived at the beginning of that valley for a time.

In former times Kainui extended from near present day Brightwater up as far as Hiwipango and beyond. In 1843 Mr Edward Baigent obtained a timber licence and began a sawmill at Wakefield. His efforts were followed by other settlers who cleared forest and converted it to farmland. Timber extraction was not the only impact on the landscape, probably a greater impact was that of fire. In 1843 Isaac Mason Hill noted "another fire on the Waimea plains exceedingly grand. The fires will dash through swamp, over hill and through bush and cross large rivers setting fresh districts in flames and traveling many miles. These being extinguished only by rain. At night they appear like towns in flames lighting the heavens".

Now Kainui is represented by small reserves including the Wai-iti Domain, Faulkners Bush and Edward Baigent Memorial Reserve. Pockets of tōtara also persist along the eastern side of the Wai-iti Valley adjacent to Tōtara Downs thanks to the magnanimity of the landowners. Small pockets of podocarp forest

³³ John Marris, 1984. Tommy the Māori and Teapot. *Journal of the Nelson and Marlborough Historical Societies*, Vol 1, No. 4. October 1984. This story was told to him by a Mr L.E.H. Baigent of Wakefield.

are also found in the Wairoa Gorge and Lee Valleys. The name Kainui also remains. A plantation forest of the same name is located towards the head of the Wai-iti valley.

The European settlers were not slow to see the potential of another native natural resource - harakeke or flax. While sawmilling was important for domestic consumption the flax industry was the region's first land-based export industry. There were a number of flaxmills across the Moutere and Waimea processing flax during the earlier part of European settlement. In the Waimea the Rutherford's had a large flaxmill at Brightwater. There were also flaxmills in Pig Valley and Aniseed Valley.

The reasons behind the closure of these flaxmills were typical of the end of the flax industry across the country. While the invention of modern fibres such as nylon are often blamed on the demise of the flax industry in fact the industry was well in decline prior to these products entering the market. The flax industry was really an industry without a future; in modern parlance an unsustainable industry. The primary purpose of the flaxmilling industry was to mine the resource and make way for an agricultural industry based on sheep and cattle. The sale of flax simply allowed the development of the land for sheep and cattle and to pay for it. As such little effort went into research and development or maintaining the resource. The flax industry in the Waimea, as was typical for the rest of the country, both ran out of the resource and ended up with aged and broken machinery. Today there is little to remind us of the extensive mahinga harakeke that was once widespread across the Waimea plain and within its valleys save for the occasional clumps here and there.

5.0 The Potential Impacts of the Waimea Water Augmentation Scheme on the Cultural Values of the Tangata Whenua ki Waimeha

A framework *Ngā Atua Kaitiaki* has been used to carry out the analytical part of this cultural impact assessment (see below). It illustrates the domains of six key spiritual guardians within the embrace of Ranginui and Papatuanuku. An analysis is carried out through essentially “consulting” with each of the atua in turn for a thorough and holistic assessment of the potential effects of this project on the values of Tangata Whenua. This model was initially put on paper by Tangata Whenua ki Whakatū however its basis is ancient. The emphasis here is on “potential effects”. The challenge will be to address each of these concerns.

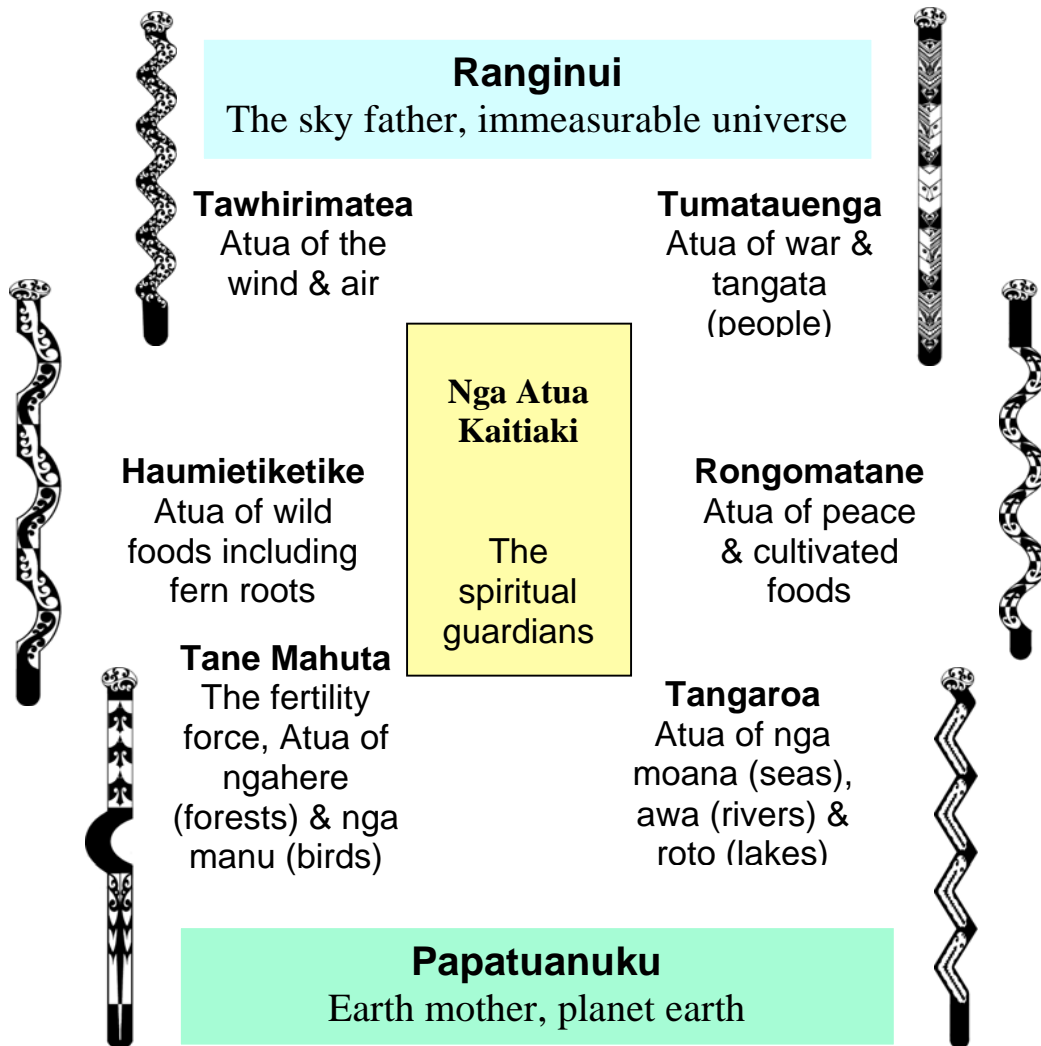


Diagram 1: Nga Atua Kaitiaki Framework

5.1 Tangaroa³⁴

5.1.1 A potential reduction in the spiritual values of the Waimea.

Tangata Whenua ki Waimeha believe that the mauri (or life supporting capacity) and wairua (spiritual essence) of the Waimea River system has been gradually degraded over the last one hundred years or more due to the demands of human activities. This degradation has been essentially caused by changes in the landscape from native/natural ecosystems to exotic/artificial systems today. As a general statement anything that artificially blocks the flow of a river (such as a dam) has the potential to degrade the mauri or wairua of that river. While the Waimea Augmentation Scheme will be designed to improve flows in the river Tangata Whenua ki Waimeha believe that the life supporting capacity and spiritual values of the Waimea **may** only be marginally increased. Further, Tangata Whenua believe that the scheme has the potential to continue to degrade the Mauri and Wairua of the Waimea if appropriate measures are not put in place. Some of these “appropriate measures” are outlined in Chapter 6 – *Recommendations*. The positive effects of these measures will need to equal the negative affects of the dam in order for the present mauri and wairua levels to be maintained.

5.1.2 A reduction of flow in the river system.

Tangata Whenua ki Waimeha are concerned over the present lack of flow and the over allocation of water resources in the Waimea River system. Flows in the river have steadily decreased as demand for water in the Waimea has increased. The present land use activities (forestry, agricultural) are taking more water from the Waimea than the river and aquifer are able to sustainably supply. This means that there is not enough water (particularly in the dry months) to supply the competing water uses whether they are irrigators, wildlife, cultural or recreational uses of the river. Decreased flows have also caused the river to be less suitable for agriculture, wildlife, cultural purposes or recreation than it used to be in the past. The purpose of the Waimea Water Augmentation Scheme is to help rectify these problems. Tangata Whenua ki Waimeha support moves to increase water flows in the river as long as it is beneficial to the river and other problems are not created in the process.

³⁴ Tangaroa is the Atua of the ocean, lakes and rivers.

5.1.3 A reduction in the quality of water in the river.

Over time the quality of water in the Waimea River has gradually fallen. Those that are using the water are often returning it to water bodies in a poorer state than they are receiving it. Changing landuse patterns and intensification of horticulture and agriculture have been the main drivers for this fall in quality. Pathogen levels (as measured by coliform counts) have risen. These rises have been mainly associated with stock management although some pollution is likely to be linked to domestic discharges from outdated private sewerage systems³⁵. Nutrient levels associated with farming and horticultural practices (i.e. nitrogen and phosphorus) have similarly risen³⁶.

Chemicals associated with herbicides and pesticides are also at issue³⁷. The toxicity of agri-chemicals have tended to lessen over time, and spills and the like are being managed through better management and practice. However, residues still enter the domains of all the ngā atua kaitiaki (the whole environment). Tangata Whenua ki Waimea believe that the proposed Waimea Augmentation Scheme will bring about further intensification of landuse with the potential for worsening water quality being high.

If the Waimea Water Augmentation Scheme goes ahead viticulture is an example of a horticultural activity that is predicted to increase. In the opinion of Tangata Whenua, this change in landuse / intensification of landuse will potentially lead to a decrease in water quality. The increased use of treated posts in vineyards is one source of contamination that we would like to highlight. A study was recently carried out by HortResearch (B. Robinson *et al*, 2004) into the leaching of Copper Chrome Arsenic (CCA) from treated posts in vineyards. They “found that CCA is leaching out of treated timber posts in the Marlborough Region. Soils surrounding these posts exceed, in some cases, the recommended guidelines for chromium and arsenic in agricultural soils as set out in the Australian National Environmental Protection Council’s *Guidelines on the Investigation Levels for Soil and Groundwater* (1999). Some 25% of the samples exceeded guideline levels in the soil for arsenic of 100mg/kg, and 10% exceeded levels for chromium of 100mg/kg” (B. Robinson *et al*, 2004, p2). Arsenic is the most mobile of the

³⁵ A recent (1999/2000) bacteriological survey of the Waimea Plains groundwater from the shallow unconfined aquifer showed that 60% of the samples of the dug wells and 20% of bores tested positive for faecal coliform bacteria (Environment Today Tasman 2000).

³⁶ A nitrate-nitrogen survey carried out by TDC (1999/2000) showed that levels exceed the recommended drinking water standards in 47% of the wells tested.

³⁷ In 1998 a pesticide residue survey was carried out by TDC. Pesticide levels were detected in a number of cases although levels were below the “maximum acceptable”.

elements that make up the chemical. About 30% of the arsenic lost from posts was not found by HortResearch in the soil close to the posts and was potentially lost to groundwater. Copper was found in the highest concentrations in the soil surrounding the posts despite having the lowest concentration in the post.

It is likely that if the same study were done in the Waimea similar results would be found here. The potential service area of the Waimea Water Augmentation Scheme is some 5200 hectares. This is made up of 3700 hectares that are presently being irrigated plus another 1500 hectares that could be irrigated if more water was available. Each hectare of vineyard requires approximately 600 posts to support the vines. If all of this land is planted in grapes, which seems to be the most profitable use of the land at present, in the future there could be as many as 3 million treated posts in the ground leaching timber treatment agents into the soil and groundwater.

Further, HortResearch state that “as the average post life is 25 years, and around 4% of the posts are replaced annually, the use of treated posts could lead to a gradual accumulation of CCA in the soil as well as possible movement of arsenic away from the posts” (B. Robinson *et al*, 2004, p20). At 3 million posts x 4% per annum replacement 120,000 posts will have to be disposed of each year if the whole of the service area is planted in grapes. The economic and environmental costs of the disposal of these posts need to be factored into any cost-benefit analysis and their likely effect on other ngā atua kaitiki (all parts of the environment). While it is unlikely that all 5200 hectares will be planted in grapes it is likely that a significant proportion of the area would be. This brief analysis is intended to give an idea of the magnitude of one issue³⁸.

5.1.4 Concern over effect of ultramafic sediments in a dam

In the headwaters of the Wairoa catchment lie the Red Hills. The Red Hills are characterised by mafic and ultramafic geology and soils. These soils are high in iron, nickel and chromium in particular, hence often a red colour and lack of associated vegetation due to the toxicity of the soils. These same soils are found in the headwaters of the adjacent Motueka River. Recent research in the Motueka has found that occasionally large slips occur in the Red Hills and send toxic ultramafic sediments downstream during flood events. This phenomenon appears to have a negative effect on the life of both the river and Tasman Bay

³⁸ The use of CCA as a wood treatment agent is generally banned in the US, Canada and the European Union because of concerns over environmental effects and disposal.

adjacent to the mouth of the Motueka. Eventually the effect of the slippage lessens as the river flushes itself and the river and the life within it returns to “normal”³⁹.

Tangata Whenua have expressed concern about the effect of such a slippage in the Wairoa headwaters. If such an event occurred at the present time life in the river would probably be negatively affected for a short while but given time things would return to normal. However, a dam would tend to hold back the ultramafic sediments rather than flush them downstream as at present. It is probable that the water contained in the dam would remain toxic for a longer period than if it was flushed away. This could have consequences for life and water quality within the reservoir as well as in the river downstream.

5.1.5 Concern over increased biosecurity risks.

There is also a concern by Tangata Whenua ki Waimeha that the stabilisation of water flows through the creation of the Waimea Water Augmentation Scheme could also increase biosecurity risks. Presently the water flows fluctuate markedly between winter and summer. Flooding events and droughts probably help to stop pest fish and plant pests from becoming established in the river system. The stabilisation of water flows may make the Waimea more amenable to a wider range of pest flora and fauna.

5.1.6 Concern over reduction in the quality of water in the estuary.

Estuaries are amongst the most productive ecosystems on the planet. They are extremely rich in organic matter and nutrients. According to NIWA they are 4 times more productive in plant matter than a rye grass pasture and 20 times more productive than the open sea (NIWA, 2004)⁴⁰. Their degree of productivity is dependent on a number of things including nutrient levels, freshwater, salinity and temperature gradients, and the amount to which they have been modified by humans. Thirty-one marine fish species have been recorded in the Waimea Estuary. Most enter the estuary with the incoming tide, while others may spend their juvenile or adult life in the estuary. It is likely that any negative effects on the estuary will be also felt within the marine environment of Tasman Bay. The productivity of the Waimea Estuary has undeniably fallen since the time of the first European settlers. If the Waimea Water Augmentation Scheme creates further changes in water temperature, salinity gradients or nutrient levels it is

³⁹ This research is only preliminary at this stage. A more detailed study is due to be carried out by Cawthron Institute beginning in February 2006.

⁴⁰ NIWA website (<http://www.niwa.cri.nz>).

likely that there will be an associated decrease in productivity of the estuarine system of the Waimea.

5.2 Tāne Mahuta⁴¹

5.2.1 Loss of native vegetation.

Today only a few scant remnants of the Kainui Forest (which covered parts of the Wai-iti and Wairoa) described by the early surveyors, explorers and settlers remain. Over the lives of the present generation of Tangata Whenua there has been a gradual loss of native riparian vegetation alongside the Waimea River and its wetlands, lagoons and the estuary. In many places it has been replaced by exotic plantation forests, grass, crops and weed species (particularly within the riparian margins). The Waimea Augmentation Scheme has the potential to adversely affect the native vegetation alongside the Waimea. Within the service area there are presently some small remnants of tōtara forest and regenerating kānuka forest. The intensification of landuse and rises in land values associated with increased irrigation has the potential to place pressure on such remnant area of indigenous vegetation.

5.2.2 Loss of wetlands.

In former times an extensive wetland of over 1000 acres existed within the lower Waimea. This wetland included much of the service area that the proposed water augmentation scheme will provide water to irrigators. Over the last 160 years this wetland has been gradually drained or filled in to make way for changing landuse in particular agriculture and horticulture. The loss of indigenous biodiversity within in this wetland included harakeke, waterfowl and eels. These natural resources which were formerly prolific provided food and fibre for Tangata Whenua as well being a source of survival and industry for early European settlers. The loss of this ecosystem is now virtually complete with very little of the original wetland remaining except small remnants near the estuary. It has not escaped the attention of Tangata Whenua ki Waimeha that formerly these wetlands stored and slowed the passage of water then slowly released it to the rivers/aquifers over the dry months. Now a dam is proposed to be built at some expense to provide a similar function

⁴¹ Tāne Mahuta is the atua of forests, birds and fertility.

5.2.3 Loss of native birdlife.

Over the last 150 years or so the native birdlife in the Waimea has fallen dramatically. Kaka and tui in the Waimea were formerly described as prolific as were waterfowl. The islands of podocarp forest on the Waimea plains have been significantly reduced in size; the timbers being used to build the early towns of the Waimea. The birds associated with these forests have disappeared or retreated to the backcountry. As was mentioned above, the Waimea wetlands were drained for pasture and cropping. Once again the birds of these places retreated to ever increasingly smaller pockets of wetland and riparian areas of the Waimea River system. Not only has bird habitat been markedly reduced in the Waimea but also so have bird pathways. Many native birds are poor flyers so often the removal of relatively small areas of natural vegetation can disrupt their seasonal patterns. In more recent times the situation has changed in some areas. Islands of native vegetation have been re-established both through designed conservation projects and through individuals planting native plants in their gardens. As a result some birds such as tui and korimako (bellbird) are being seen in areas they haven't been seen in a long time.

There has been concern expressed that the creation of a dam associated with the Waimea Water Augmentation Scheme could disrupted seasonal patterns by native birds. The plight of the whio (blue duck) that live in the Wairoa/ Lee catchments was an area of particular concern to Tangata Whenua. While some habitat may be lost from the creation of the dam (whio prefer fast flowing water) of most concern was the disruption to the seasonal movements of the ducks. It is likely that whio in the Waimea catchment move up and down the river system as food supplies fluctuate or as juvenile birds search for mates. The construction of a dam may interfere with these movements and in turn may affect the viability of whio in the whole of the Waimea catchment.

5.2.4 Concern over effect on water yields of exotic pine plantations

Data from a number of catchment studies undertaken in New Zealand where pasture was replaced with *Pinus radiata* forest, showed a reduction in annual surface water yields in the range of 25-50% (Canterbury Natural Resources Regional Plan Chapter 6: Impacts of vegetation change on water yield). The pine covered catchments of the Moutere gravels are amongst the worst affected by this phenomenon with reduced annual runoff by 55% and groundwater recharge by nearly 70% (Duncan 1993, cited in Rosoman 1994). The Moutere gravels only make up a small proportion of the geology of the Lee and Wairoa catchments. However, much of the Wai-iti and Waimea are underlain by Moutere gravels so

the volume of water that flows out of the Waimea River (and potentially available for irrigation) is affected by the pine plantations within the wider Waimea catchment. Tangata Whenua believe that consideration may have to be given to retiring some areas of pine plantations within the wider catchment in the future in order to allow the use of the water for higher value uses.

5.3 Tawhirimatea⁴²

5.3.1 Dam construction and climate change.

Concern was raised about reports by the World Commission on Dams (WCD) that hydroelectric power, often proclaimed as one of the greenest ways of generating energy, can be more polluting than coal. This is because the storage reservoirs that power the stations can trap rotting vegetation. This phenomenon is not confined to hydro dams but includes all water reservoirs including natural ones such as lakes. Vegetation trapped below the surface of the water can (depending on conditions) emit large amounts of greenhouse gas, particularly methane⁴³, as it breaks down. The source of the rotting vegetation is both the plant material that is left under the surface of the water in the reservoir following construction of the dam as well as plant material that enters the reservoir throughout its life. It has also been found that the bulk of the methane created during the life of a dam comes from plant material being washed downstream into the reservoir.

It must be emphasised that the amount of methane and carbon dioxide being emitted varies greatly from scheme to scheme. An inquiry to the Ministry for the Environment (MfE) acknowledged this phenomenon. They said that the Clyde Dam for example flooded a dry environment with limited vegetation so it is likely that the amount of methane produced from this dam would be small. Conversely areas with large volumes of vegetation particularly in the tropics are at the other end of the scale. According to the MfE the inclusion of methane from flooded land is presently voluntary within the Kyoto reporting and accounting protocols. These protocols last until 2012. Kyoto audits after 2012 may include sources of greenhouse gases from flooded land and as a signatory to the Kyoto Protocol New Zealand as a whole may be liable for payment. The reasonably small size of the dam associated with the Waimea Water Augmentation Scheme along with

⁴² Tawhirimatea is the Atua of the air and wind.

⁴³ Methane traps over 21 times more heat per molecule than carbon-dioxide.

the climate and other factors would suggest that the volume of methane produced would be insignificant. In fact, methane produced from dairy farms associated with this scheme may be of greater concern.

5.3.2 Water flows and climate change.

Concern was raised by Tangata Whenua ki Waimeha about possible effects of climate change on a Waimea Water Augmentation Scheme. According to New Zealand Climate Change Office (Te Tari Rereketanga Ahuarangi o Aotearoa) New Zealand is likely to experience more frequent droughts and floods (with drier conditions in the east and wetter conditions in the west), rising sea levels, changing rainfall patterns and increasing temperatures in some regions. For the Marlborough – Nelson region the Office predicts that summers will be warmer, drier and windy than at present. Their climate models predict that under all the climate change scenarios tested, a 1-in-20 year drought in eastern regions will become more common in the future. By the 2080s, the frequency of a current 1-in-20 year *PED* increases between two and more than fourfold, depending on the scenario. That is, a drought that currently occurs once in 20 years on average could become a 1-in-10 year, or even a 1-in-5 year, event in that same area. Conversely the Office predicts that winter rainfall will increase (at least for Nelson) as will severe flooding events.

It appears that such predictions could be a double-edged sword for a water augmentation scheme in the Waimea. On the one hand there may be more rainfall during the winter from which to harvest. On the other hand more summer droughts may lead to water demands beyond those modeled on existing drought occurrences. The implementation of such a water augmentation scheme should make more summer water available for irrigators but if the climate change predictions come to be realised it may be a case of just “treading water”. Such a situation may help save the river from increased ecological deterioration but the economics of the project may become shaky. If the scheme has been designed on the basis that 1 in every 10 years there will not be enough water to supply the full allocation and this scenario actually occurs 1 in 5 years due to climate change will the scheme be financially robust enough?

5.3.3 Concern over an increase in pesticides, herbicides and other airborne chemicals

Tangata Whenua ki Waimeha believe that this scheme will inevitably lead to an intensification of horticulture and agriculture in the Waimea. We believe that

this will in turn result in an increase in the amount of airborne pesticides, herbicides and other sprays into the environment and the domain of Tawhirimatea. In order to support this scheme we believe that measures must be taken to minimise the effects of landuse intensification so that the land, water and air is left in a better condition for future generations.

5.4 Tumatauenga⁴⁴

5.4.1 Tino rangitiratanga

Tangata Whenua ki Waimeha acknowledge that our relationship with Tasman District Council is improving. Such an improved relationship strengthens our rangitiratanga or the ability to determine our own destiny. Iwi now have representation on the Waimea Water Augmentation Committee whereas in the previous water augmentation scheme (Wai-iti) Tangata Whenua were not represented. Further the acknowledgment of a cultural impact assessment of the effects of the proposed scheme on this occasion was forthcoming by TDC whereas on the previous occasion the need for a CIA was not immediately obvious to the Council.

5.4.2 Kaitiakitanga.

Water is a taonga that was guaranteed to Tangata Whenua under Article II of the Te Tiriti o Waitangi. Presently the opportunities for Tangata Whenua ki Waimeha to practice traditional forms of sustainable management associated with the Waimea River system and its environs are limited. If the natural resource is reduced, degraded or polluted then this severely comprises our ability to manage the resource and undermines our role as kaitiaki. Such things that lead to adverse effects on the environment reduce Tangata Whenua's ability to practice kaitiakitanga and manage the taonga tuku iho (treasured natural resource) in a sustainable way.

While some traditional practices are still carried out and some consultation between Tangata Whenua and the Tasman District Council, government agencies, resource consent applicants and others takes place the influence that Tangata Whenua has on the management of the river is limited. Tangata Whenua have an obligation to manage ngā taonga tuku iho wisely and leave these natural resources in a better state for future generations (both Māori and

⁴⁴ Tumatauenga is the Atua of both war and of people.

Päkehä) than those that we have received. It could hardly be claimed that the river is managed along traditional lines. The scheme as presently proposed does not enhance traditional management and practices. Potentially it even serves to undermine kaitiakitanga. Conversely the scheme could take steps to increase our ability to practice traditional forms of sustainable management and enhance kaitiakitanga opportunities.

5.4.3 Manaakitanga.

Changing landuses in the Waimea have generally served to reduce the natural resources that Tangata Whenua formerly managed and harvested. While the benefits of modern agriculture and horticulture are obvious the costs of the loss of the natural ecosystems in the Waimea (and other places) are less so. While falling groundwater levels and reduced flows in the Waimea have highlighted the problem Tangata Whenua see this as a symptom of an ongoing legacy of misuse. These changes have reduced our ability to practice manaakitanga to manuhiri; that is to provide hospitality to our visitors as well as provide for ones own whanau. Manaakitanga is often expressed through the provision of local delicacies of kai to visitors. The early European surveyors and explorers described the eels, water fowl, kaka and kererū of the Waimea as being prolific. These creatures formed part of our food basket. Today there are few birds for us to hunt or it is not legal for us to do so. The quality of the fish and eels in the river has fallen as has the number caught. Without exception these resources have been severely reduced as has our ability to provide hospitality. At times this has led to embarrassment, anger and loss of mana (status and pride) to us. On occasions it has meant we have had to enter the rohe of other hapū and iwi to provide for our needs.

5.4.4 Concern over health of people.

Tangata Whenua ki Waimeha have seen the Mauri and Wairua of the Waimea decrease over their lifespan. The industrialisation of farming practices and intensification of landuse including increased use of sprays, fertilisers and other chemicals has impacted negatively on the quality of food harvested from the wild. This has been most noticeable in the lower reaches of the Waimea. We are concerned about the effect on people who harvest and eat food from the river and estuarine ecosystems as well as those that swim and use it for recreational purposes. This proposal will necessarily lead to more intensive landuse. It has the potential to detrimentally affect the quality of the water in the Waimea, the quality of the food harvested from it and the health of people who relate to the river in this way.

5.4.5 Concern over the equitable and fair allocation of water.

Tangata Whenua ki Waimeha are concerned over how fairly water from the Waimea is to be allocated under the proposed Waimea Augmentation Scheme. In the past poor allocation models have led to the over-allocation of water from the Waimea. Under the present system water has been allocated to irrigators on a “first-in first-served” basis. This system led to the Waimea being over-allocated by some 20%. Little thought was given to other users including recreational users, future generations and “the environment” as water users. Tangata Whenua have a greater confidence in the state of knowledge about the river particularly in terms of its hydrology as well as the development of improved equitable and fair allocation models than we have had in the past.

However the discussions threw up many questions that Tangata Whenua feel need to be made more explicit. How much water will be allocated to future generations? How much will be allocated for traditional and recreational users, and how much will be allocated to Ngä Kaitiaki and their denizens to use how they please. What is a fair share, who has a right to it and who determines that fair share? There are issues over who gets preference to the water. Say for instance there is a dry winter and the dam is only two-thirds full who gets the water? Are those irrigating early in the summer at an advantage over those who irrigate at the tail end of the summer/ autumn? Does the early bird catch the worm? Or is the amount in the dam divided up evenly over the growing season and the flows adjusted accordingly? In the event that the scheme does not bear the fruits that it supposed to (i.e. the predicted surplus water does not eventuate) then on who will the cost of repairing the shortfall rest. This is of some concern to Tangata Whenua. Is the general rate payer aware of what they are backing and the risks involved? These are the sorts of questions that were raised.

In light of the water allocation discussion it was also felt that the issue of the ownership of water need also be reiterated. Tangata Whenua have a view that the “ownership” of water lies with Maori. Ownership in this sense means “the right of use” rather than the common or legal view of ownership. The Ministry for the Environment has remarked on this issue which is felt to be worth repeating. “The Waitangi Tribunal has commented on the potential existence of such rights and has suggested in the case of the Whanganui River that Maori may 'own' water in the river by virtue of the fact that Maori were recognised as the possessors of the Whanganui River as a whole. The Tribunal reasoned that, without ownership of the water within a river, ownership of that river is

meaningless. Accordingly, at least for as long as the water remained in the river, it may be considered as 'owned' by the relevant hapu. However the 'ownership' recognised by the Tribunal in this instance differs from the English legal understanding of that term, and is based on an ownership which stems from use rather than use which stems from ownership.⁴⁵

5.4.6 Consideration of alternatives and conservation measures

Concern was expressed by Tangata Whenua ki Waimeha over the lack (or at least perceived lack) of alternatives that have been considered and conservation measures that have been promoted. A number of these were discussed. The main discussion focused around smaller on site schemes with the following observations made.

- Some attempt has been made by landowners to harvest water on their own property i.e. Seifried's Brightwater estate. Tangata Whenua felt that this approach is obviously cost effective at this level (and probably smaller) while acknowledging that not all property owners have suitable geography to harvest water. Notwithstanding this it was also felt that a number of property owners had existing stormwater systems, natural waterways and/or areas of "wasteland" that could be developed and utilised for water storage purposes.
- Tangata Whenua believe that smaller more numerous reservoirs would be less risky than a single large reservoir as well as have a wider range of environmental benefits.
- Tangata Whenua believe that support or indeed encouragement for those wishing to create new or expand existing reservoirs/wetlands whether in the catchment area or plains of the Waimea should be forthcoming from the TDC.

5.5 Haumietiketike⁴⁶

5.5.1 Loss of mahinga kai and rongoa.

Over the last 150 years or so the opportunities for gathering wild food, fibre and rongoā (medicinal) species has decreased. This is not limited to the Waimea, it has happened throughout Aotearoa. It has not just happened to Māori, it has happened to Pākehā as well. Even in the space of one or two generations the harvest of things wild mahinga kai has markedly decreased. Rivers and river

⁴⁵ <http://www.mfe.govt.nz/publications/water/property-rights-water-nov03/html/page4.html>

⁴⁶ Haumietiketike (also called Haumie) is the Atua of wild foods.

ecosystems have probably suffered the most. Like the Waimea, rivers are often easy to get to, easy to pollute and easy to overuse.

The opportunities to manage and harvest mahinga kai by Tangata Whenua ki Waimeha have decreased. Whether in the river proper, the river margins or the estuary and ocean into which the river flows negative effects have been felt. The quality of eel, whitebait, and fish stocks has fallen in the river and associated wetlands and estuarine areas. The quality and quantity of kaimoana harvested in Tasman Bay has similarly decreased. Many fish from the nearby ocean spend at least part of their lifecycle in the Waimea Estuary. It appears that not only has the natural productivity and associated mahinga kai of the Waimea River ecosystem being compromised but so has that of Tasman Bay.

Other resources have over time also become harder and harder to manage or even gain access to. In the past the fish, harakeke, raupō, waterfowl and other wetland resources of the Waimea were legendary. The river margins and wetlands of the Waimea have been progressively drained and modified in response to changing land use. Many of these taonga have virtually disappeared. As the mahinga kai decreases so too do the tikanga (customs) and mātauranga (knowledge) associated with the management of these resources. The mahinga kai resources will not be passed on to the mokopuna and future generations; neither will the knowledge associated with their management. Tangata Whenua ki Waimeha see that these losses constitute a breach of rights under Te Tiriti o Waitangi. Article 2 of Te Tiriti affirms our right to manage and take fish and other taonga to meet our customary needs. The present situation restricts the exercising of these rights.

At this stage the Waimea Water Augmentation Scheme has not been designed to enhance mahinga kai opportunities. The scheme may even lead to reduced opportunities for gathering wild food and products. Regardless of the eventual location of the project the construction of a dam and the flooding of the area behind the dam will reduce native vegetation in the valley. This may hinder the passage of birds along their seasonal routes (bird pathways). The dam may also prevent the passage of waterfowl, fish and eels. Concern was expressed that changes in water temperature, dissolved oxygen, nutrients, invertebrate life and other things may also affect the natural life and mahinga kai downstream in a negative way. These changes may affect opportunities for management and harvest within the river itself and the within associated ecosystems such as the Waimea Estuary. Presently in order for Tangata Whenua to harvest mahinga kai

we often have to travel. This is both a cost to ourselves as well as sometimes having to harvest from other iwi's rohe. Opportunities for Tangata Whenua to manage and harvest within the project area will probably (though not necessarily) be non-existent.

5.6 Rongomatane⁴⁷

5.6.1 Loss of commercial opportunities

In the past the Waimea river system was managed for productive and economic purposes using the natural biological diversity of the valley. Birds, ducks and other water fowl, fish and eels, harakeke, raupō and tī kouka were all harvested and traded for centuries by Tangata Whenua. For around one hundred years Europeans later harvested flax. There were at least six flax mills across the Waimea Plain and the Moutere Hills. As land was developed for pastoral farming and horticulture the river was increasingly marginalised (except for the use of its water). Its natural productivity was not considered in the economics of the new landuses. Commercial opportunities based on the natural river ecosystem were increasingly minimised.

Today opportunities to commercially harvest eels, whitebait, flounder, birds, harakeke and other products are few and far between. The largest commercial opportunity (apart from agriculture) based around the river today is tourism. There is a small but stable industry based on kayaking, trout fishing and eco tourism. It is possible that the Waimea Water Augmentation Scheme may have knock-on effects that could affect flows and downstream biota. In turn this may also affect the commercial value of the river. These affects may be positive or negative.

5.6.2 Water demand and crop suitability

Concern has been expressed over the water requirements of different crops and their suitability for growing given the water problems in the Waimea. In February 2003 Lincoln Environmental prepared a series of reports on a Tasman Regional Water Study. Technical Report 1 looked at land and climate suitability for groups irrigated crops. Other reports looked at present and predicted water demands and supply options for the various catchments in the Waimea, Moutere and Motueka.

⁴⁷ Rongomatane is the atua of peace and cultivated foods.

Based on this and other information Tangata Whenua believe that crops grown in the Waimea should be those which are more suited to lower water requirements (such as grapes) and those that have high water requirements (such as irrigated pasture for dairy) should be discouraged. This is particularly so if those with high water requirements negatively impact on those with low water requirements. The challenge is how to do this without impacting on the right of a landowner to choose the crop(s) of his or her choice to grow without impacting on others rights or the “rights” of the eels, whitebait and other non-human species to an existence.

6.0 Recommendations

A number of recommendations follow. These have been suggested by Tangata Whenua as potential means of addressing our concerns and balancing what are perceived to be negative affects should the Waimea Water Augmentation Scheme become a reality. They may have already been addressed within the wider feasibility study or there may be alternative ways of addressing these concerns that have yet come to light or. Two points must be noted first.

- **This document in general and these recommendations in particular in no way indicate Tangata Whenua's support for or opposition against this water augmentation scheme.** These views can only be expressed by the individual manawhenua iwi.
- **Nothing in this document in general and these recommendations in particular shall affect any claim iwi may have to the Crown under the Treaty of Waitangi Act 1975. Further, Tangata Whenua desire to see a clause within the resource consent documents and other relevant documents (if this scheme proceeds) that future Te Tiriti o Waitangi (Treaty of Waitangi) outcomes will be recognised⁴⁸.**

6.1 Carry out a risk assessment of ultramafic sediments

As outlined in *5.1.4 Concern over effects of sediments in dam* Tangata Whenua believe that there is a risk of ultramafic material entering the dam from storm related slippage events upstream. Such an event could possibly make the water non-potable as well as toxic to freshwater plants and animals. Under normal conditions the river would clear itself of toxic material from a slippage within a reasonably short time. However, the obstruction created by a dam in the river would hold such material and possibly cause adverse environmental and economic effects. The difference in the nature of the upper catchment geology of the two sites would probably make the risk of such an event higher for the Wairoa Gorge site than the option proposed for the Lee Valley.

⁴⁸ The Waimea Water Augmentation Committee said that such a clause **may** be *ultra vires* because of its requirement for third party (in this case iwi) consent.

If such events do periodically occur a study needs to be made of the frequency of their occurrence and the potential environmental effects⁴⁹. Also a contingency plan needs to be made on the method of cleaning up or otherwise dealing with the problem including estimates on the length of time the project may be out of use and the economic cost of this. The risk assessment could then be fed into any economic or environmental models of the scheme as well as the development of a plan of action should an event occur.

WWAC Response 5 April 2006

It appeared from initial research by the CIA team that this concern was probably less in regard to the Lee than the Wairoa. The nature of the geology and soils appeared to be more benign i.e. the Lee contains little in the way of ultramafic geology than the Upper Wairoa. Following the presentation by Tangata Whenua on 21 March 2006 Sally Marx of Tonkin and Taylor confirmed that she had talked to a geologist who believe that neither of dam sites are draining ultramafic sediments (at least not in significant quantities to be of concern). However, it was emphasised that water quality is presently monitored and will continue to be so.

6.2 Develop wetlands in dam bounds

Tangata Whenua ki Waimeha would like to see wetlands developed within the bounds of the dam. The purpose of these wetlands would in part be to act as a filter for water entering the dam and in part for biodiversity enhancement. The predominant landuse in the area immediately surrounding the dam is plantation forestry. Under a clearfell regime following the harvest of trees sediment loads are usually elevated in water bodies downstream of the harvest. Dams tend to trap sediments behind them and over time silt up. The faster a dam silts up the shorter is its lifespan. Tangata Whenua believe that the development of wetlands in the bounds of the dam with the expressed (and designed) purpose of acting as settling areas for the prevention of siltation would be a prudent measure. These wetlands may also form part of a plan in the mitigation of ultramafic material entering the dam (for 6.1 above).

These wetlands would not only be useful in the prevention of siltation and maintenance of water quality but would help to mitigate the loss of biodiversity with the construction of the dam. They would also improve wildlife values in the

⁴⁹ Presently the Cawthron Institute are undertaking a study of the frequency and effects of ultramafic slippage events into the Motueka river and estuary.

dam. If constructed appropriately eels, fish and waterfowl that use the dam will be able to use these wetlands as places to live and retreat to particularly in summer when the level of the dam falls and the area of water is reduced. Tangata Whenua see as desirable the construction of wetlands on all streams directly entering the dam, probably immediately prior to their entrance.

WWAC Response 5 April 2006

The WWAC was happy to consider the development of wetlands within the bounds of the dam for the mitigation of biodiversity losses as well as help protect the dam from siltation. Tangata Whenua said that they would be able to be involved with the funding and establishment of these wetlands.

6.3 Develop fish and water fowl passage

The construction of dams across rivers and streams often prevents fish, eels and waterfowl passage upstream and downstream. About one half of New Zealand fish species are diadromous (spend at least part of their life cycle in the ocean). Rivers on which dams exist without passage are unable to support these type of species. Whio (Blue Duck) are found in the Wairoa/ Lee catchment. Whio move up and down the river system and between catchments following seasonal patterns in search of mates or food. While eels are known to climb steep dam faces or traverse around dams (often through wet grass) many of New Zealand's indigenous fish species and waterfowl such as whio are unable or reluctant to negotiate dams. Fish ladders have been incorporated into some dam designs in New Zealand. Unfortunately they are often poorly designed or for other reasons do not work and rarely do they allow for the passage of waterfowl. Tangata Whenua desire to have a well designed and functioning fish and water fowl passage incorporated into any dam constructed.

WWAC Response 5 April 2006

The WWAC said that they were supportive of fish and waterfowl passes to be included in the development of a dam.

6.4 Develop a biodiversity and rongoā restoration plan

Within the bounds of the area to be flooded at both dam sites lay significant "islands" of indigenous native vegetation including old growth podocarps such as

rimu and kahikatea. The loss of these trees will represent both a loss of biodiversity as well as (and probably more ecologically importantly) a loss of seasonal bird pathways. Native birds tend not to travel far over open ground (or water). In the case of tui for example this distance is about 1.5kms. The length of the reservoirs are approximately 3.5kms in the case of the Lee site and 5.5kms for the Wairoa site. The loss of these islands of trees through the construction of either dam will probably serve to restrict native bird movement. This loss of native vegetation also represents a potential loss of rongoä (or medicinal plants) as well as other plant species useful to Tangata Whenua.

Tangata Whenua advocate the creation of new “islands” of indigenous vegetation and the enhancement of existing “islands” left around the lake edge. Species planted would focus on those that naturally occur there, those that attract native birds and those that have a particular use for cultural purposes (both medicinal and other useful plants). These “islands” would be developed within the Waimea catchment. They would be sited in places that help created bird pathways and/or provide easy access for harvest purposes.

WWAC Response 5 April 2006

The WWAC said that they were supportive of a biodiversity and rongoä plan to be included as part of a dam development.

6.5 Develop native bird recovery plan

Whio (Blue Duck) are an endemic New Zealand duck that live in fast flowing streams and rivers. They have been sighted and recorded in the Lee and Wairoa catchments in recent times albeit in low numbers⁵⁰. In 1988 whio were classified by the IUCN (International Union for Conservation of Nature and Natural Resources) as *near-threatened*. By 1994 the population had fallen and the species was reassessed as *vulnerable*. In 2002 the species was once again reassessed. The total population had fallen again and now stands at 2000-3000 birds. Whio are now classified by the IUCN as *threatened*. Tangata Whenua believe that a river that lacks the call of the whio has lost part of its mauri.

Käkäriki, kaka and kiwi are other rare or endangered birds that are also known to inhabit the catchment or the adjoining Richmond Forest Park. The predicament

⁵⁰ A recent survey, however, failed to find any whio in either the Wairoa or Lee Rivers.

of these birds is due in part to habitat loss as well as through the impact of predators on the population: including rats, possums and stoats.

As such Tangata Whenua desire that a native bird recovery plan for the catchment should be developed and put in place should an augmentation dam be built within the Wairoa/ Lee. The recovery plan would be linked to the Department of Conservation's existing whio recovery plans and nature recovery projects. These plans focus on predator control.

WWAC Response 5 April 2006

The WWAC said that they were supportive of a native bird recovery plan to be included as part of a dam development. DoC representative Martin Heine said that it would be sensible to have such a plan aligned to DoC's nature recovery plans, however, presently the Richmond Forest Park is not included in its national or local conservancy nature recovery strategies.

6.6 Develop a mahinga kai harvest and maintenance plan

Gradually over time Tangata Whenua have lost access to and control over mahinga kai resources that we formerly managed. The reasons for this loss are many (see 5.5.1 *Loss of mahinga kai and rongoā*). They include loss of land, loss of physical access, reduction of species below levels that can be sustainably harvested as well as loss of control through regulation and bureaucracy. Tangata Whenua ki Waimeha would like the opportunity to harvest any native trees for timber that are to be flooded behind any dam. Further, Tangata Whenua ki Waimeha desire to be part of the development of wetland and biodiversity plans with the view of being able to manage and harvest resources on a sustainable basis that result from such management.

WWAC Response 5 April 2006

The WWAC said that they were supportive of a mahinga kai harvest and maintenance plan to be included as part of a dam development. Resource management advisor to MIRMAK (Dean Walker) suggested that the three plans outlined in recommendations 6.4, 6.5 and 6.6 could be developed as one.

6.7 Adopt a set of iwi environmental indicators.

The development of this Cultural Impact Assessment has highlighted to Tangata Whenua Ki Waimeha the lack of documented material that has measured,

monitored and recorded our cultural values. For example if we were asked “have mahinga kai opportunities in the Waimea decreased, increased or stayed about the same over the last generation” we could safely answer, from our experience, that these opportunities have decreased. However if we were asked by how much have these have decreased this would be more difficult to assess because no monitoring processes presently exist for our cultural values. In contrast if one wanted to find out about things such as changes in coliform counts, nutrient levels, water quality, etc., then this type of information is readily available because these sorts of things are being measured for the Waimea.

Tangata Whenua are presently developing a set of “iwi indicators” for the monitoring and management of freshwater resources in the Motueka and Riwaka catchments. We request that a programme be undertaken to include iwi environmental indicators for the use in the management of the Waimea river ecosystem. The purpose of these iwi indicators would be to monitor the Waimea in line with our tikanga (customs) and mātauranga (knowledge) so that we are able to fulfill our kaitiaki (guardianship) obligations. While the river is monitored at present this is confined to methods of Western science we desire to see our monitoring and matauranga used alongside the scientific way. We will be then able to monitor any effects of the Waimea Water Augmentation Scheme using our own methods. Further, we believe that if this is able to occur improvements would be made in the management of the Waimea for the benefit of all users of the river.

WWAC Response 5 April 2006

The WWAC appeared to be supportive of the inclusion of iwi environmental indicators alongside scientific indicators in monitoring the water resources of the Waimea catchment. However, they were not sure that the WWAC was the body responsible for implementing such a project. Tangata Whenua said that they were presently developing a set of indicators and simply wanted WWAC’s support and the opportunity to establish monitoring sites within the catchment. The issue of who would fund such a programme was not discussed.

6.8 Carry out “taonga survey” once final site is chosen

This cultural impact assessment has been holistic in nature. While cognisance was taken of the two possible dam sites no focus was shown towards either of these. As such no specific assessment of taonga was carried out. When the final site is decided upon Tangata Whenua would like to carry out a taonga survey

specific to that site. Items surveyed would include archaeological evidence, native trees, birds and minerals of value to ourselves. The survey would include recommendations for the removal, transfer or otherwise of taonga. It would also involve the application of the iwi environmental indicators above.

WWAC Response 5 April 2006

The WWAC were supportive of a “taonga survey”. The question of who would fund the survey was not discussed.

6.9 Promote or require the protection of native vegetation

The development of the Waimea Water Augmentation Scheme is designed to bring economic benefits to landowners within the service area through an increase in the supply and security of water. Unfortunately Tangata Whenua believe that the likely increase in land values due to a more secure water supply will result in at least one negative effect (see *5.2.1 Loss of native vegetation*). While an increase in the value of land is not negative in itself we believe that it will place pressure on the presently “non-productive” areas within the service area. Of most concern are areas that contain native vegetation (for example the patches of tötara forest and regenerating känuka forest on the Waimea Plain). As land values and rates rise the incentive to convert these remnant patches to more productive uses also rise. Tangata Whenua advocate the maintenance of these patches of native vegetation. This would not necessarily involve methods of legal preservation as we support sustainable management of native species for timber (and other resource) production. Rate relief and incentives to maintain and expand these areas are mechanisms that we would support for areas presently under native vegetation.

WWAC Response 5 April 2006

The WWAC felt that it was not their responsibility to seek the protection of native vegetation on private land (outside of the immediate dam area) even if the development of this proposal had negative consequences on such vegetation. They believe that native forest protection/ enhancement on private land was a role for the Council. However, they felt that the enhancement of native vegetation in the dam area was a role for WWAC and they would be advancing this within the proposal as in *Recommendation 6.4*.

6.10 Promote or require the development of treatment wetlands

Another negative consequence of this scheme is the inevitable effects of intensification of landuse. It is likely that the amount of pesticides, herbicides and fertilisers will rise as landuse changes and intensifies. Residues are likely to find their way into waterways and possibly groundwater. While this scheme has been promoted as improving water quantity and quality to the Waimea River Tangata Whenua believe that water quality may in fact be compromised (see *5.1.3 A reduction in the quality of water in the river*).

In order to rectify this we advocate the establishment of wetlands on all properties for the expressed purpose of filtering runoff. Presently each property has an existing stormwater system, whether an open drain, stream, etc. These could be developed so that each property (or groups of properties) essentially has its own wetland treatment system. The wetlands would also have biodiversity benefits and may also be developed for the harvest of water.

WWAC Response 5 April 2006

The WWAC agreed that the creation of wetland systems to help treat farm runoff was a positive idea. However they felt that it was not their role to seek the creation of wetlands on private land even if the wetlands were specifically designed to abate the negative effects of the intensification of landuse. They believe that any wetland creation scheme was a role for the Council. However, they felt that the creation of wetlands within the dam area was a role for WWAC and they would be advancing this within the proposal as is *Recommendation 6.2*.

6.11 Develop plantations for the supply of non-toxic support posts

As outlined in *5.1.3 A reduction in the quality of water in the river* Tangata Whenua believe that a significant proportion of the land that will be irrigated will be given over to viticulture. Each hectare of land in viticulture requires around 600 support posts per hectare with 4% or 24 posts being replaced each year on average. At present these posts are overwhelmingly treated radiata pine. This situation presents two problems. The first problem is the leaching of toxic chemicals into the soil and presumably waterways (generally chrome, copper and arsenic). The second problem is the disposal of damaged posts. These

posts are often illegally burnt as they cannot be sent to a normal waste disposal site. Tangata Whenua advocate the growing of naturally durable timber for support posts for the viticulture industry as a condition of this proposal. The number of posts grown would be directly related to the area of land in viticulture. Suitable species may include macrocarpa, white cypress, red beech and various eucalyptus species.

WWAC Response 5 April 2006

The WWAC acknowledged that the use of large numbers of treated posts was an issue in other areas of the country i.e. Marlborough's viticulture industry. While some committee members acknowledged that it was a potential problem for the Waimea the WWAC agreed that the issue needed to be dealt at a regional level rather than one directed at this proposal. They felt that it was the responsibility of the TDC, however, no funds would probably be set aside to look at the issue unless strong solicitation was made from iwi or concerned community groups.

6.12 Provide for a Waimea catchment mitigation fund

Tangata Whenua believe that if you take from a resource then one should give back in kind. The name for this act of reciprocity or balance is *utu*. The establishment of a mitigation fund that is set aside for restoration projects in the Waimea catchment is advocated. The fund would be used to help to carry out some of the recommendations above. These would include outcomes associated with the three plans (6.4 *Biodiversity and rongoā plan*, 6.5 *Native bird recovery plan* and 6.6 *Harvest and maintenance plan*) as well as on farm solutions associated with 6.9 *Protection of native vegetation* and 6.10 *Development of wetlands*.

Farmers, community groups and others could apply to the fund to carry out this work. The fund could also be used to carry out conservation/ restoration projects in the Waimea catchment outside of these recommendations. Tangata Whenua believe that the best way to finance this fund would be through water charges (from water abstractor permits) by those in the service area of the Waimea catchment. So for every cubic metre of water taken a percentage would go directly to the fund to carry out mitigation works.

WWAC Response 5 April 2006

The WWAC felt that it was too early to be talking about a mitigation fund yet. They felt that if the proposal was designed well that it should be a form of mitigation in itself.

6.13 Involve Tangata Whenua in the implementation of the recommendations above.

Tangata Whenua ki Waimeha request that if any or all of the recommendations above be accepted and acted upon that we are included in the implementation of these recommendations. Whilst the CIA process involves the production of a document, for Tangata Whenua this is not the end, in fact, it is only really the beginning. For us to be able to fulfill our kaitiaki obligations we must continue to be involved in the management of ngā taonga tuku iho ki Waimeha (the treasured resources of the Waimea). Tangata Whenua ki Waimeha envisage that the implementation of these recommendations would be a joint venture between the Waimea Water Augmentation Committee and ourselves.

WWAC Response 5 April 2006

The WWAC expressed appreciation of the input and recommendations of the Tangata Whenua. They also endorsed iwi involvement in the implementation of the recommendations (in particular) and the continuing process (in general).

6.14 Provide for Tangata Whenua as a Shareholder in the Scheme

Should the Waimea Water Augmentation Scheme proceed to completion Tangata Whenua would like to be a shareholder in the scheme. The primary purposes in Tangata Whenua being a shareholder would be to ensure that our role as kaitiaki is actively practiced and that 6.13 above *Involve Tangata Whenua in the implementation of the recommendations* is carried out.

WWAC Response 5 April 2006

The WWAC was intrigued that Tangata Whenua would want to be shareholders in the proposal should it proceed. Barney Thomas and Pat Park reiterated their expression of interest at iwi or their entities may wanting to be shareholders.

They offered a number of possible ways that this could come about but said that they were highlighting the desire and any firm proposal would have to be worked out through further dialogue.