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Report 7a

2058 Environmental Goals of Iwi and Hapū Six Case Studies

Background report to Report 9: Exploring the Shared Goals of Māori

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We extend our humble thanks to the following people, as well as the numerous others who helped guide and shape these reports through astute questions and wise counsel.

Dr Richard A Benton; Susan Brierley, Dr Anthony Cole, Te Wānanga-o-Raukawa; Ronnie Cooper; The Honourable Sir Edward Taihakurei Durie, K.N.Z.M.; Tania Harris, Tai Tokerau Tourism; Te Hau Mihiata, Māori Language Commission; Liane Ngamane, Hauraki Māori Trust Board; Kevin Prime, Ngati Hine; Jonathan Procter, Lake Horowhenua Trust; Dr Mere Roberts; Edward Siddle; Dr Huhana Smith, Te Papa and Justice Joe Williams.

Preface

He mahi kai te taonga – Survival is the treasured goal. (Māori proverb)

Māori history is rich in myths and traditions that recount the deeds of legendary heroes and human ancestors, many of which provide useful guidelines for future generations. These principles and moral instructions for correct conduct towards each other and the environment have been developed over time and are still considered, reflected upon and put into practice by iwi and hapū today. For this reason, we consider an understanding of the current environmental goals of iwi and hapū is critical for any individual or group of New Zealanders attempting to explore Aotearoa/New Zealand's long-term future.

Importantly, other Sustainable Future reports have discussed environmental goals from a predominantly non-Māori standpoint, but this report attempts to explore environmental goals from the perspective of Māori New Zealanders – putting principles into practice. This task has proven to be both difficult and complex, in that the environmental goals of iwi and hapū are not easily found in published literature. As a result, our approach has been to look closely at six case studies and where possible, explain what we found. Put simply, this area of study is not well-documented, and as such remains largely untouched by succinct academic theory and critical thought. For this reason, this report should be considered as explorative rather than a detailed, in-depth study of environmental goals of iwi and hapū.

This report is a supporting report to *Project 2058's* Report 7, *Exploring the Shared Goals of Māori: Working towards a National Sustainable Development Strategy*. The overarching purpose of *Project 2058* is to prepare our perspective of an optimal National Sustainable Development Strategy (NSDS) for Aotearoa/New Zealand's long-term future. To achieve our purpose we have developed a work programme which includes research and analysis on a variety of topics, and the publication of a number of reports (to learn more about the work programme, see *Project 2058 Methodology: Version 3*).

Jamie Winiata has worked hard to provide Sustainable Future with a better understanding of these principles, and I thank her for her commitment. Jamie has been supported by Mahina-a-rangi Baker, Miriam White, Willow Henderson and Perrine Gilkison, and guided by the expertise of our external reviewers, who include Dr Anthony Cole, Ronnie Cooper and Dr Mere Roberts.

Thank you all for making this report possible.

Wendy McGuinness
Chief Executive

Executive Summary

During the preparation of Report 7, *Exploring the Shared Goals of Māori: Working towards a National Sustainable Development Strategy* (SFI, in press), it became clear that it was necessary to have an understanding of how Māori goals were currently being progressed within communities by iwi and hapū. This background paper has been written in response to that need.

Although there were other publications that indirectly discussed specific issues, we were unable to find a comprehensive, up-to-date perspective that provided a national overview. We very quickly appreciated that such a broad and fully comprehensive review was beyond our resources, so we looked for alternative ways to improve our understanding of the environmental goals of iwi and hapū. We concluded that an explorative study of six case studies would be both achievable and informative. See Sections 1 and 2 for more clarity over the purpose and the methodology.

In order to assist in both the selection and the review of the six case studies, a number of key principles underpinning iwi and hapū environmental goals were identified. Although it is not an inclusive list of all principles, Table 1 outlines those that were found to be most significant for the task of selecting and then reviewing the six case studies. While the principles are listed individually, in reality they are all interconnected, and as such, one principle cannot be compartmentalised or separated from the whole. For example, rangatiratanga is interconnected with both mana whenua and kaitiakitanga, and therefore has an intricate role in achieving goals that involve protection, use and authority. What's more, although all these principles are significant, some could be considered more significant than others – rangatiratanga, for instance, might arguably be the most significant kaupapa underpinning the environmental goals of iwi and hapū. See Section 3 for a brief description of each principle listed below.

Table 1 Kaupapa: Key Principles Underpinning Iwi and Hapū Environmental Goals

Ahi kā	Burning fire; rights to land by occupation (Mead, 2003: 359)
Whakapapa	Genealogy (Mead, 2003: 370)
Mana whenua	Customary authority over lands (Kawharu, 2002: 399)
Rangatiratanga	Customary authority and control, sovereignty (Kawharu, 2002: 399)
Kaitiakitanga	Guardianship, trusteeship, resource management (Kawharu, 2002: 399)
Tau utuutu	Reciprocity (Water & Cahn, 2007: 341)
Mauri	Life force (Kawharu, 2002: 399)
Tapu	Under the influence of atua protection, sacred, prohibited, restricted (Ka'ai et al., 2005: 239)
Mahinga kai	Seafood gardens and other traditional sources of food (Mead, 2003: 362)
Taonga tuku iho	Gift of the ancestors, precious heritage (Mead, 2003: 367)

In addition to identifying these key principles, the six case studies were selected in order to explore a diverse group of goals in a range of locations throughout Aotearoa/New Zealand. The six case studies selected were:

1: **Ngāti Hine, Northland**
Aim: To restore the native wood pigeon (kūkupa) and the health of the Motatau Forest to the state once enjoyed by the iwi's ancestors.

2: **Hauraki Māori Trust Board, Waikato**
Aim: To ensure the protection and restoration of the mauri of the environment, and the well-being of the people who are reliant upon its resources.

3: **Communities of North Hokianga**
Aim: To create a local tourist economy through Māori concepts of kaitiakitanga.

4: **Te Arawa, Central North Island**
Aim: To return management of the geothermal resource of the central North Island to Te Arawa.[1]

5: **Muaupoko, Levin**
Aim: To restore the mauri of Lake Horowhenua.

6: **Ngāi Tahu, South Island**
Aim: To protect Ngāi Tahu indigenous flora and fauna, and maintain mauri and customary rights and ownership through the development of a policy on genetic modification.

Section 4 looks closely at six case studies. Each begins by describing the history of the land in terms of mythical heroes and/or human ancestors. This is then followed by a brief history of recent events, which are further summarised in the table at the end of each case study. Section 5 briefly explains how the case studies show that interconnections between kaupapa exist, while Section 6 puts forward three shared goals found as a result of completing this exercise.

The goals of iwi and hapū can be broadly summarised as a desire to protect, use and gain authority over their resources, and the overarching goal could be seen as the enhancement of iwi/hapū well-being and that of the natural world. It is the deep reverence for the environment and other resources, highlighted through the intricate relationships iwi and hapū have with their customary lands and the obligations they must uphold as tangata whenua, which gives reasoning to these goals. The nature of the goals derives from a 'te ao Māori' view, which incorporates mātauranga Māori and tikanga Māori and the responsibilities iwi and hapū have to the spiritual and physical world.

[1] This is an assumed goal. It is not explicitly mentioned in any of the written material, but is inferred from action taken to date.

From reviewing the six case studies in terms of the kaupapa listed in Table 1, this report concludes that there are arguably three common environmental goals of iwi and hapū:

1. The revival and protection of taonga, such as fauna, flora, and their marine, freshwater, and terrestrial ecosystems.
2. The wise, sustainable use of resources in order to sustain their mauri and that of the people.
3. To achieve tino rangatiratanga rights and kaitiakitanga responsibilities relating to iwi and hapū resources.

These goals are further discussed in Report 7, in order to assist in the development of the Institute's National Sustainable Development Strategy for Aotearoa/New Zealand, which will ideally be published in early 2011.

1. Purpose

The purpose of this report is to fulfil Objective 2 of Report 7, which is to investigate the nature of iwi and hapū environmental goals, with an exploration of the kaupapa underpinning those goals, and how these kaupapa and goals interconnect with other community priorities. This report forms part of the Sustainable Future Institute's work programme *Project 2058*.

1.1 Project 2058

The strategic aim of *Project 2058* is to promote integrated long-term thinking, leadership and capacity-building so that Aotearoa/New Zealand can effectively seek and create opportunities and explore and manage risks over the next 50 years. In order to achieve this aim, the *Project 2058* team will work to:

1. Develop a detailed understanding of the current national planning landscape, and in particular the government's ability to deliver long-term strategic thinking;
2. Develop a good working relationship with all parties that are working for and thinking about the 'long-term view';
3. Recognise the goals of iwi and hapū, and acknowledge te Tiriti o Waitangi;
4. Assess key aspects of New Zealand's society, asset base and economy in order to understand how they may shape the country's long-term future, such as government-funded science, natural and human-generated resources, the state sector and infrastructure;
5. Develop a set of four scenarios to explore and map possible futures;
6. Identify and analyse both New Zealand's future strengths and weaknesses, and potential international opportunities and threats;
7. Develop and describe a desirable sustainable future in detail, and
8. Prepare a *Project 2058* National Sustainable Development Strategy.

(SFI, 2009: 3)

This paper is designed to help progress the third point above: 'Recognise the goals of iwi and hapū, and acknowledge te Tiriti o Waitangi'.

1.2 Sustainable Future Institute

Earlier work by Sustainable Future has indicated that Aotearoa/New Zealand is well behind on its international obligations to develop and implement a National Sustainable Development Strategy (NSDS) (SFI, 2007). The creation of an NSDS requires consideration of where New Zealanders would like to be as a country and what challenges lie ahead. Dealing with these challenges is often complex and requires large-scale change, much of which may be beyond our control. It involves planning for a desired future, while acknowledging our weaknesses and looking for solutions to the problems we envisage will be encountered along the way. With this

in mind, this report is a step towards Sustainable Future's goal of creating an NSDS for Aotearoa/New Zealand, and an integral component of *Project 2058*.

Project 2058 is also about building capacity and skills within the next generation of New Zealanders so that we can move towards a sustainable future. This requires an understanding of what New Zealanders want for their country now and in the future. This is a difficult task. It is hard enough to get a small group of people to agree on what they want for Aotearoa/New Zealand now, let alone to try and establish a single view on what New Zealanders as a whole may want in 50 years' time – yet this is the underlying challenge facing the *Project 2058* research team. In undertaking research about Aotearoa/New Zealand's future we recognise we cannot speak on behalf of all people, but as this report indicates, we are trying to understand the wider landscape, in order to look for a way forward.

1.3 About the Author and the Research Team

Jamie Winiata (Author)

Ko Tainui te waka

Ko Tararua te maunga

Ko Hōkio te awa

Ko Ngāti Raukawa te iwi,

Ko Ngāti Pareraukawa te hapū

Jamie is currently a third-year student at Victoria University, completing a Bachelor of Arts with majors in Environmental Studies and Māori Resource Management. She grew up on her parents' dairy farm near Invercargill.

Miriam White (Research Analyst)

Miriam White is originally from Tauranga and has recently completed a Bachelor of Design (Honours) at Massey University in Wellington. She has worked for the Sustainable Future Institute for the past four years and has worked on Project Genetic Modification. This work includes the reports *The History of Genetic Modification in New Zealand* and *The Review of the Forty-Nine Recommendations of the Royal Commission on Genetic Modification* which are available on our website. Miriam wrote Case Study 6, The Development of a GMO Policy by Ngāi Tahu.

Mahina-a-rangi Baker (Research Analyst, Author: Working Paper 2009/02)

Ko Tararua te maunga

Ko Ōtaki te awa

Ko Kapiti te motu tapu

Ko Ngāti Raukawa ki te tonga te iwi, rātou ko Te Ati Awa ki Whakarongotai ko Ngāti Toarangatira ngā iwi

Nō Ōtaki āhau

Mahina-a-rangi is currently pursuing a Masters in Environmental Studies at Victoria University of Wellington, where she is researching the values her iwi and hapū hold around ngārara and insects, and how the risks to these values from genetically modified organisms are managed. She completed a Bachelor of Science in Ecology and Biodiversity and Environmental Studies, and a Bachelor of Arts in Māori Resource Management and Māori Studies in 2008, undertaking part of her undergraduate study at the University of Hawai'i in Mānoa. Mahina-a-rangi also tutors undergraduate courses in Māori culture and society and introductory te reo Māori, and a postgraduate course in Māori resource management.

Perrine Gilkison – Research Analyst and Librarian

Ko Wharepapa te maunga

Ko Motueka te awa

I whānau ai au i Whakatu

I tipu ake ai au i Mapua

E noho ana au i te Whanganui-ā-Tara

Perrine Gilkison, originally from the Nelson region, graduated from Victoria University in 2007 with a Bachelor of Arts (History). Her main areas of interest are New Zealand and Pacific History with a particular focus on oral histories. She is currently working as a researcher and as Sustainable Future's librarian, gathering and cataloguing resources which are used for our research. This library opened to the public as a reference library in October 2009.

2. Methodology

The methodology for this report sits within the wider methodological framework that is discussed in *Project 2058 Methodology: Version 3* (SFI, 2009).

During the preparation of Report 7 it became clear that in order to fulfil the purpose of the report it was necessary to have an understanding of how Māori goals were currently being progressed within communities by iwi and hapū. While we were aware of publications that indirectly discussed specific issues, we were unable to find comprehensive, up-to-date research that provided a national perspective. It was beyond the Institute's resources to complete such an in-depth study; hence we looked for alternative ways to improve our understanding of environmental goals of iwi and hapū. We concluded an explorative study of six case studies would be both achievable and informative.

This background report therefore investigates six case studies covering iwi and hapū from diverse parts of the country. The case studies were chosen to explore sustainability in terms of current practice, and to showcase both traditional and modern-day issues, such as genetic modification, land use, and the conservation of waterways, marine life, flora and fauna.

The underlying goal specific to each case study is noted below. Further discussion is provided in Section 4.

2.1 Method of Analysis

The task of preparing this paper included both a study of the academic literature and investigation of current practice through the six case studies (listed below), in order to explore how the environmental goals of iwi and hapū have been implemented in practice. The case studies were selected from material that was accessible from the literature, and as far as possible we have aimed for a geographical representation of Aotearoa/New Zealand. While literature produced or endorsed by iwi has been used when discussing the case studies, the subsequent analysis of the kaupapa that arise from them has been conducted by individuals who are not from those iwi.

1: **Ngāti Hine, Northland**
Aim: To restore the native wood pigeon (kūkupa) and the health of the Motatau Forest to the state once enjoyed by the iwi's ancestors.

2: **Hauraki Māori Trust Board, Waikato**
Aim: To ensure the protection and restoration of the mauri of the environment, and the well-being of the people who are reliant upon its resources.

3: **Communities of North Hokianga**
Aim: To create a local tourist economy through Māori concepts of kaitiakitanga.

4: **Te Arawa, Central North Island**
Aim: To return management of the geothermal resource of the central North Island to Te Arawa.[2]

5: **Muaupoko, Levin**
Aim: To restore the mauri of Lake Horowhenua.

6: **Ngāi Tahu, South Island**
Aim: To protect Ngāi Tahu indigenous flora and fauna, and maintain mauri and customary rights and ownership through the development of a policy on genetic modification.

It must be emphasised that views of the world vary among iwi, hapū, whānau and tāngata levels of organisation. The six stories presented in this report each provide a snapshot of one specific situation, based on publicly available information.[3] It should be noted that these stories are neither comprehensive nor complete; therefore it is important that they are not used to inform, judge or predetermine other situations. Every situation is unique and every story represents a particular viewpoint.

This report focuses largely on principles that relate to kaitiakitanga, and how these principles inform and assist tangata whenua in their relationship with the land. While kaitiakitanga is defined in legislation such as the Resource Management Act (1991), it is really not possible to fully understand this kaupapa without an understanding of the holistic world view of Māori (Marsden, 2003). The ways in which iwi and hapū conduct their relationships with the land are varied and complex, and it is not possible to capture the whole variety of these influences in a report such as this. The report therefore concentrates on a few of these influences, and the case studies are considered to be a starting point for discussion of key goals underlying current thinking and practice in this area.

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2 This is an assumed goal. It is not explicitly mentioned in any of the written material, but is inferred from action taken to date.

3 While we attempted to rely solely on published material to inform the case studies, this was not always possible. To ensure the case studies were both up-to-date and accurate, the team invited feedback from representatives of the following groups in regard to each case study. Case Study 1: Te Rūnanga o Ngāti Hine ; Case Study 2: Hauraki Māori Trust Board; Case Study 3: Tai Tokerau Tourism; Case Study 4: Tuwharetoa Trust; Case Study 5: Lake Horowhenua Trust; Case Study 6: Te Rūnanga o Ngāi Tahu. Unfortunately, not all of these organisations were able to complete a full review. We have advised these organisations that the case studies will be published on our website by the end of 2009, but their feedback is welcome at any time, and will be incorporated into an update of our report.

2.2 Terminology

While researching Māori goals, and the initiatives taken to progress these goals, two terminology issues have continued to challenge the writers: (i) the meaning of the term 'kaupapa', and (ii) understanding the governance relationship between iwi and hapū. The two are discussed in turn below.

The term 'kaupapa' arguably has a range of meanings. For the purposes of this research we have relied on two definitions. The Rev. Māori Marsden (2003) describes kaupapa in etymological terms as being:

> … derived from two words, kau and papa. In this context 'kau' means 'to appear for the first time, to come into view', to 'disclose'. 'Papa' means ground or foundation. Hence, kaupapa means ground rules, first principles, general principles. (Marsden, 2003: 66)

In addition, Graham Hingangaroa Smith, in his 1997 doctoral thesis, describes 'Kaupapa Māori as a term used by Māori to describe the practice and philosophy of living a "Māori" culturally informed life' (Smith, 1997, as cited in Smith & Reid, 2000: 5). Hence, for the purpose of this package of reports we have drawn on both definitions to develop our own working definition: 'kaupapa' refers to the principles underlying the practice and philosophy of living a 'Māori' culturally informed life. Consequently, for the purpose of this research the terms 'kaupapa' and 'principles' have been used interchangeably.

In regard to the second issue, it became increasingly challenging to have confidence in reporting on the governance relationship between iwi and hapū. For example, when using the term 'iwi', is the inclusion of 'hapū' automatically inferred? If not, should the term 'iwi and hapū' always be written together if we are referring to both groups? Further, if the latter term is used, should the term iwi go first, as in 'iwi and hapū', or should the reverse, 'hapū and iwi'?[4] The matter is further complicated by the fact that some hapū are affiliated with more than one iwi. In this background paper we have used 'iwi and hapū', unless to do so would be inaccurate.

In addition to the two terminology issues discussed above, we have also drawn a distinction between specific and shared goals. Individual goals, as identified within each case study, are derived from a particular context, usually determined by an iwi or hapū, and are often expressed in terms of the management of a resource or a social issue. However, shared goals, as identified in Section 6 of this report, are those that are perceived to be held by the majority of

[4] This was used by Huhana Smith in her doctoral thesis (Smith, 2007). The importance of hapū as a political entity was also stressed by Hon. Sir Edward Taihakurei Durie KNZM, former Chief Judge of the Māori Land Court (E. Durie, personal communication, November 10, 2009). Durie considers that the customary power base in Māori communities rested with hapū, and the use of the term 'iwi' was adopted after the signing of te Tiriti to denote a regional grouping of hapū (ibid.). Durie emphasises that the use of 'iwi' over 'hapū' centralises the power base within Māori society, and that Māori must be aware of this issue and consider whether this is a shift in power that they support (ibid.).

Māori — they represent many voices. In this report, they have been developed as a result of analysing common threads throughout the six case studies.

The use of te reo Māori has been promoted throughout this report as a means of communicating Māori concepts appropriately. In order to avoid 'over-translating' particular concepts, and to ensure meanings are not changed or lost, definitions have not been included within the text of the report. Terminology is instead explained in a glossary, which appears at the end of the report (see page 33).

3. Kaupapa: Key Principles Underpinning Iwi and Hapū Environmental Goals

Ten kaupapa have been identified as underpinning the environmental goals of iwi and hapū (see Table 2 below). We do not, however, claim that these 10 kaupapa form a comprehensive list of all environmental kaupapa within tikanga; rather, this list was selected because we believe that these 10 have the most relevance to this discussion on sustainability. Further explanation of each of the 10 kaupapa follows Table 2.

Table 2 Kaupapa: Key Principles Underpinning Iwi and Hapū Environmental Goals

Ahi kā	Burning fire; rights to land by occupation (Mead, 2003: 359)
Whakapapa	Genealogy (Mead, 2003: 370)
Mana whenua	Customary authority over lands (Kawharu, 2002: 399)
Rangatiratanga	Customary authority and control, sovereignty (Kawharu, 2002: 399)
Kaitiakitanga	Guardianship, trusteeship, resource management (Kawharu, 2002: 399)
Tau utuutu	Reciprocity (Water & Cahn, 2007: 341)
Mauri	Life force (Kawharu, 2002: 399)
Tapu	Under the influence of atua protection, sacred, prohibited, restricted (Ka'ai et al., 2005: 239)
Mahinga kai	Seafood gardens and other traditional sources of food (Mead, 2003: 362)
Taonga tuku iho	Gift of the ancestors, precious heritage (Mead, 2003: 367)

3.1 Ahi Kā

The centuries of ahi kā, observations and experiences by iwi and hapū have seen intricate relationships develop between iwi, hapū and the environment (HMTB, 1999; Panelli & Tipa, 2007). These relationships are sustained by traditional values and customs (differing between regions) that incorporate generations of knowledge passed down from ancestors, experience and observation (ibid.). Iwi and hapū, who retain ahi kā, are under continual obligation through spiritual and physical duties to care for the land.

3.2 Whakapapa

The word whakapapa describes Māori understandings of genealogical relationships. Knowledge of whakapapa is essential in order to locate one's place within one's family, tribe, environment and the universe. Indeed to 'know' about a thing – a tree, a rock, or a human – is to know its whakapapa. This stems from the belief that all known things in this world are

descended from the same celestial parents, Rangi-nui and Papa-tū-ā-nuku and their children, including Tāne-mahuta (forest plants and animals, humankind[5]), Tangaroa (sea and freshwater creatures), Rongo-mā-Tāne (cultivated foods), Haumia-tiketike (wild foods), Tāwhiri-mātea (winds, storms), Tūmatauenga (warfare) and Ruaumoko (volcanoes).

Several important principles emerge from this Māori concept of origins and descent. Firstly, all things are related, and all contain a spiritual legacy (mana Atua) inherited from the gods. Secondly, whakapapa provide a mental template for ordering things according to their perceived relationships, much as a scientific taxonomy classifies all things.

Thus an individual comes to understand their origins, history, relationships, rights and responsibilities to other humans and their environmental kinsfolk through knowledge of whakapapa (Roberts & Wills, 1998). Knowledge of whakapapa thus underpins the rights and responsibilities of kaitiaki towards the care, protection and use of taonga or things of value, including natural resources, and thereby provides the basis for a Māori conservation ethic.

3.3 Mana Whenua

Mana whenua encompasses the right of an iwi or hapū to maintain responsibility for all resources contained within one's tribal rohe (Williams, 2005: 52). This kaupapa is based on take, or claim, and ahi kā (ibid.). The iwi and hapū that are acknowledged in the case studies have mana whenua, which is of prime importance in establishing their goals of protection, use and authority. Being recognised as mana whenua mandates iwi and hapū to exercise kaitiakitanga obligations (in the physical world). Morgan (2005: 132) notes that 'the state of the environment that a particular hapū have mana over reflects on their authority to continue in the role of kaitiaki for that rohe'. Williams holds the opinion, and emphasises, that mana whenua relates to making decisions about resources, rather than being something that is asserted over the land, as this would be claiming mana over Papa-tū-ā-nuku (Williams, 2005: 52).

3.4 Rangatiratanga

Rangatiratanga is inextricably linked to mana whenua (Williams, 2005: 52) and plays an intrinsic part in kaitiakitanga (Tunks, 2002: 325), where there is a common responsibility to protect the territory and resources within the care of an iwi or hapū (Panelli & Tipa, 2007). An example of the similarities and interconnections of rangatiratanga and kaitiakitanga can be seen in Ngāi Tahu being kaitiaki over their customary resources on the Titi Islands, as they have resource control and authority over the islands (Kawharu, 2000: 353). Because rangatiratanga is interconnected with mana whenua and kaitiakitanga, and as it has an intricate role in achieving the goals of protection, use and authority, it is put forward as an underpinning environmental kaupapa.

[5] In some tribal accounts, such as those of Tainui and Arawa, humans are descended from Tumatauenga (M. Roberts, personal communication, November 28, 2009).

Goals relating to the achievement of independence and autonomy regarding resources are underpinned by rangatiratanga. For example, in the North Hokianga case study, seeking a sustainable local tourist operation would allow iwi and hapū to have more control over their destiny, greater independence, and the ability to make appropriate decisions about the use of resources.

3.5 Kaitiakitanga

The practice of kaitiakitanga is underpinned by tau utuutu. Kaitiaki have an ancestral obligation to sustain the mauri of the natural environment, thus ensuring human well-being and survival (HMTB, 1999: 23). Kaitiakitanga means protecting ecosystems from inappropriate use, fulfilling spiritual obligations, seeing cultural values continue (Panelli & Tipa, 2007; Williams, 2005) and enhancing taonga tuku iho (Kawharu, 2000; Water & Cahn, 2007). Kaitiakitanga in the 21st century also includes the work necessary to repair, restore and heal ecosystems damaged as a result of historical exploitation, as exampled in the Lake Horowhenua case study. Kawharu notes that kaitiakitanga is an effective tool that can be used by iwi and hapū to uphold rights and contribute to resource management plans (Kawharu, 2000: 353–354). For example, kaitiaki may carry out karakia and place a rāhui on a resource so it becomes tapu, thus offering it protection (ibid.: 357). This aspect of kaupapa is not only a mechanism for ensuring that natural resources are protected and sustained, but also assure spiritual, economic[6] and political continuance (Kawharu, 2000: 351).

Kaitiakitanga can be seen throughout the case studies, but the exercise of kaitiaki practice is particularly evident in the Ngāti Hine example, in which a rāhui was placed on the kūkupa during a marae hui; in this case Ngāti Hine were exercising kaitiakitanga through their mana whenua status (TRONH, 2008).

3.6 Tau Utuutu

Traditionally, tribal customary lands provided both a livelihood and physical and spiritual well-being to the people (Harris & Tipene, 2006; Panelli & Tipa, 2007). Nourishment received from the whenua was reciprocated through tikanga tiaki in order to replenish and conserve resources (Marsden, 2003: 69). The kaupapa of tau utuutu heightens the mana of tribal groups, as it maintains connections between humans, ancestors, the environment and the spiritual world (Kawharu, 2000: 353). In addition, the Hauraki Māori Trust Board, for example, consider it to be a central component of sustainability; in return for the provision of food from the Waihou River, they act to enhance and protect the mauri of the river system (HMTB, 1999: 40).

6 The term 'economic' or 'economics' in a Māori context is not necessarily the same as in conventional economics and can be interpreted in a number of different ways, depending on the specific context in which it is used.

3.7 Mauri

Mauri can be described as life essence, and the maintenance of mauri is a key principle of iwi and hapū environmental goals. Barlow (2004: 83) explains that mauri is the element that allows for existence within one's realm and sphere. He describes mauri in the context of human life. A person has a physical (body) element and a spiritual element. It is the mauri that combines the physical and spiritual spheres, allowing a person to live. When a person passes away these elements are separated and the mauri is extinguished (ibid.).

As discussed in Report 7 (SFI, in press), there is no equivalent Māori term to 'sustainability'; however, the Hauraki Māori Trust Board has defined sustainable management as 'the protection of the mauri which is the life force of the environment and its resources' (HMTB, 1999: 21). The practice of kaitiakitanga is the main mechanism in seeing that the mauri is sustained. While unsustainable development, use, degradation and pollution may compromise the mauri (HMTB, 1999: 46), it is possible for it to be returned through practices exercised by kaitiaki. Among other examples in the case studies, the Muaupoko iwi has a long-term goal of returning the mauri to Lake Horowhenua after serious land use changes compromised the lake's health. By restoring the mauri of the lake, obligations of maintaining a balanced relationship between resources and people will be further fulfilled.

3.8 Tapu

Tapu is described by Barlow (2004: 128) and Ka'ai and Higgins (2005: 18) as the influence of ngā atua over the universe. It encompasses a series of prohibitions that can apply to every aspect of life, where failure to comply with tapu laws means consequences will be imposed by ngā atua (Ka'ai & Higgins, 2005: 15). These prohibitions provide for the separation of the sacred and the ordinary. Kawharu (2000: 357) explains that once a rāhui is placed on a resource, it then becomes tapu; the Ngāti Hine case study is an example of this, through a rāhui on the kūkupa at Motatau forest.

Tapu is an underpinning principle of the goals in the iwi and hapū case studies, which show a desire to keep resource uses separate and protected. This can be seen in the Ngāi Tahu and Te Arawa case studies. For example, the goal of Ngāi Tahu is to implement policy that protects their taonga. The whakapapa of their taonga is considered tapu, and Ngāi Tahu seek to protect their taonga against genetic modification. Another example is where hapū of the iwi Te Arawa have sought the return of ownership over geothermal resources. The reason Te Arawa would want to do this is so they may develop the resources as they see fit (Tutua-Nathan, 1992). Both Tutua-Nathan and Huhana Mihinui (2002) discuss the treatment of the geothermal resource by Te Arawa, who confined certain practices to particular areas of the resource; for example, through the use of specific bathing areas and cooking areas. As Mihinui points out, there are particular reasons (such as differences in water velocity) why daily practices would take place in specific areas (Mihinui, 2002: 28).

3.9 Mahinga Kai

Mahinga kai refers to the use of resources, particularly food, in a controlled manner that allows for their ongoing availability (Williams, 2005: 52). Being able to exercise mahinga kai contributes to iwi and hapū well-being, identity, development and mana, maintains mātauranga Māori, and enhances kotahitanga and whānaungatanga (Water & Cahn, 2007: 341). The ability to practise mahinga kai indicates the health of an area or the health of the resource being used. Ngāti Hine has the vision of declaring the kūkupa a pest by 2010 so that it may then be used as a source of mahinga kai, which will in turn translate to a positive health status for the kūkupa. In the case of Lake Horowhenua, trustee Jim Broughton explains that the plentiful resources that were historically available meant there was no need to cultivate food, as customary resources were sufficient for the people (MfE, 2001). Maintaining mahinga kai through tikanga tiaki means obligations are fulfilled, taonga tuku iho is assured, and being able to source a livelihood from the land allows for land occupation, which maintains ahi kā (Water & Cahn, 2007: 342).

3.10 Taonga Tuku Iho

Taonga tuku iho refers to valued assets and treasures that are intergenerational (Harmsworth et al., 2002: 46). Treasures are not restricted to physical objects, but also incorporate intangible aspects of the culture such as responsibilities and obligations that are passed down, mātauranga, te reo, and waiata. Taonga tuku iho is considered to be an underpinning principle of iwi and hapū environmental goals, as the subjects of all the case studies endeavour to maintain their treasures through long-term planning, ensuring taonga will be handed down to their descendants.

4. The Six Case Studies

It is by looking into the practical use of kaupapa that a clearer understanding of the scope and detail of each principle can be appreciated. It is for this reason that we follow the explanations of the principles outlined earlier with a look into how iwi and hapū apply environmental kaupapa in projects for their people and the natural world.

As stated earlier, the six case studies are not a comprehensive or complete view of Māori goals or actions to date, but they do provide a useful platform for discussing and considering the environmental goals of iwi and hapū. It is also important to acknowledge that each example encompasses complex interactions, relationships, developments and decision-making which in turn impacts on the ability to achieve environmental goals. The case studies investigated are therefore not necessarily linear and may never reach an end point, however they do provide a useful snapshot of how environmental goals are being set and progressed by Māori at this moment in time.

Each case study begins by describing the history of the land in terms of mythical heroes and/or human ancestors. This is then followed by a brief history of recent events, which are further summarised in the table at the end of each case study.

4.1 The Kūkupa (the native pigeon) and Ngāti Hine

In the far northern reaches of Aotearoa/New Zealand, in a region known as Tai Tokerau/Northland, exists an iwi known as Ngāti Hine. The iwi was established by the leader Hineāmaru over 450 years ago (Prime, 1999; TRONH, 2008). Because of the mana whenua bestowed upon Hineāmaru through her whakapapa, the lands trekked by her automatically came under her control (TRONH, 2008: 9).

One such area of land is the Motatau Forest, where her people sourced a livelihood from this 'pantry of resources' within the forest . The status of Ngāti Hine as mana whenua meant that kaitiakitanga could be exercised by them. Traditional management practices that came under the authority of kaitiakitanga, such as rāhui, ensured that their pantries did not empty.

Generations passed, and the Ngāti Hine people experienced colonisation through the 19th and 20th centuries. The past century saw the arrival of introduced pests (the brushtail possum – *Trichosurus vulpecular*; ship rats – *Rattus rattus*, and stoats – *Mustela erminea*) (Innes et al., 2004: 73), the introduction of foreign legislation, and changes in land use (TRONH, 2008). Changes also included large blocks of land being removed from Ngāti Hine control (Prime, 1999), and land cleared for farming (TRONH, 2008). As a result, the resources that once sustained and contributed to the well-being of the people began to decline.

Seeking to restore its health, in 1989 Te Rūnanga o Ngāti Hine approached the Crown with a request to take over management of the Motatau Forest (Prime, 1999). Though this request was met with resistance from certain community and government sectors at the time, the Rūnanga asserted iwi obligations and rights over the forest by fencing it off and ridding it of pests (ibid.). In 1994, the Department of Conservation formally acknowledged the Rūnanga as co-managers of the Motatau Forest (Innes et al., 2004: 73). Being able to exercise management of the Motatau Forest means Ngāti Hine are able to fulfil their goals (as identified in Table 3).

Ngāti Hine bore the vision of restoring the forest to the state enjoyed by their ancestors (ibid.: 74). Other parties such as the Department of Conservation and Landcare Research became involved with these visions, which resulted in both traditional Māori and non-Māori management techniques being used. The research project officially finished in 2002, by which time counts showed that the kūkupa population in the Motatau area had more then doubled (Kilvington et al., 2004: 10). The various groups continue to work together to ensure that the population of the kūkupa continues to grow (ibid.).

Table 3 The Kūkupa and Ngāti Hine

What are the individual goals?
To restore the kūkupa to an abundant population.
To restore the health of the forest to the state enjoyed by Ngāti Hine ancestors.
To assert kaitiakitanga, through Ngāti Hine's mana whenua status.
What has been achieved?
In 1989 Te Rūnanga o Ngāti Hine asserted its mana whenua by fencing off the forest boundary and beginning to rid the forest of pests.
In 1996 Ngāti Hine imposed a rāhui on use of the kūkupa.
In 1997 pest eradication was managed jointly by Te Rūnanga o Ngāti Hine, the Department of Conservation and Landcare Research.
Current status
Kūkupa population surveys indicate a significant increase in numbers over and above pre-project population density (as indicated by the 1988 census survey). Specifically, a 2004 paper prepared by Landcare Research for the Department of Conservation reported that kūkupa numbers had more than doubled (Kilvington et al., 2004: 10).

4.2 The Waihou River and the Hauraki Māori Trust Board

The Waihou River, which flows north for 150 kilometres before reaching the Firth of Thames on the Coromandel Peninsula, has seen many changes (HMTB, 1999: 7). The long-finned eel (endemic to Aotearoa/New Zealand) once flourished in this river alongside an abundance of pātiki (flounder), kahawai, aua (yellow-eyed mullet), kanae (grey mullet), kaio (freshwater mussels), kōura (freshwater crayfish), inanga (whitebait/common smelt) and other water-dwelling species (HMTB, 1999: 14). Management techniques, values, observations, local seasonal calendars and a relationship between people and resources based on reciprocity and respect contributed to the mauri of the river being sustained (HMTB, 1999). In the past, the river not only provided a healthy food stock for the Hauraki iwi living nearby, but also a main road for waka travelling to trade, war or home.

Over a brief period of time a new environment emerged which bears little resemblance to that of the past. Shipping, logging and using the river as a sludge channel during the late 19th century, along with draining the wetlands for farming, have seriously compromised the life of the river and impacted on the life at the Firth of Thames (ibid.). The essential sustenance required to support a healthy ecosystem has been diminished through these changes, reducing the ecosystem and causing the diversity of life in and above the river to plummet from its former glory (ibid.).

The Hauraki Māori Trust Board, an organisation that represents 12 iwi within the Hauraki region, is working towards rebuilding a healthy environment (ibid.: 37). To do this the Board has a vision of developing the capacity to monitor the health of the environment through a three-stage plan. The Board's overall aim is 'to ensure the protection and restoration of the mauri of the environment and the well-being of the people who are reliant upon its resources' (ibid.: 23). This aim aligns with the work of the Ministry for the Environment, which is developing a 'model for further development of environmental performance indicators for the marine environment' and main freshwater catchments (ibid.: 1).

Table 4 The Waihou River and the Hauraki Māori Trust Board

What are the individual goals?
Identifying customary environmental performance indicators (EPIs).
Protection of the mauri of the environment.
Restoration of the mauri of the environment.
To ensure the well-being of people reliant upon its resources.
What has been achieved?
A three-stage plan has been devised by the Hauraki Māori Trust Board.
The recording of oral histories as given by kaumatua in order to understand the historic landscape and ecology.
Financial contribution from the Ministry for the Environment.
Current status
In July 2009, through collaboration between the Hauraki Māori Trust Board and government agencies, construction of the new Kopu Bridge at the confluence of the Waihou River and Tikapa Moana commenced. The Chair of the Trust Board, Toko Renata Te Taniwha, also expressed the hope that closer attention to the serious environmental issues affecting the Waihou River would follow the infrastructure investment focus in the area (HMTB, 2009).

4.3 Tourism and Tai Tokerau

Situated on the west coast of Tai Tokerau/Northland is a rohe steeped in historical and cultural knowledge, known as North Hokianga. Kupe, the legendary Polynesian navigator and discoverer of Aotearoa/New Zealand, is said to have given the Hokianga its name on his return to Hawaiki, and one of his waka is also said to be buried within a sand dune at the Hokianga Heads (Cloher & Johnston, 1999: 47). The rich history and culture of the region does not stop there, however. The 'Golden Stairs' that run from Pawarenga to the Whangape Harbour (an area named for the brilliantly coloured petals of the kōwhai tree that adorn the ground) offer regional views to the untouched inlet and coastal landscapes. Inland to the south rests a magnificent gathering of kauri, congregating in the Warawara forest, while the Mitimiti beach offers a swimming ground (Cloher & Johnston, 1999). The charming landscapes, coupled with the traditional North Hokianga communities, have been perceived as an environment that could offer a unique and genuine taste of the region to outsiders.

'In 1996, Tai Tokerau Māori made up 30 percent of the region's total population, but they also had the highest unemployment rate in the country, with almost one in four unemployed' (FRST, n.d.: 1). In response to this situation, the James Henare Māori Research Centre at the University of Auckland headed a programme called 'A Sustainable Māori Tourism for Tai Tokerau', with the overall goal of enhancing iwi and hapū well-being within Tai Tokerau through alternative tourism (FRST, n.d.). As a result, the iwi of the North Hokianga – Ngāpuhi and Te Rarawa – decided to operate a tourism industry using concepts of sustainability based on local values, customs and practices. 'The idea of sustainability extended not only to the environment but also their preferred way of social organisation, economic management and cultural presentations' (Cloher & Johnston, 1999: 46). It was hoped that establishing a tourism operation in North Hokianga based on local values, customs and practices would generate a source of revenue to the community that in turn would enable the people to govern and sustain themselves, empowering them with autonomy and independence (Cloher & Johnston, 1999; FRST, n.d.).

Table 5 Tourism and Tai Tokerau

What is the specific goal?
To create a sustainable local economy that generates employment income and autonomy for the community, whānau, hapū and iwi while reinforcing traditional cultural practices.
What has been achieved?
The James Henare Māori Research Centre (at the University of Auckland) undertook to run the programme 'A Sustainable Māori Tourism for Tai Tokerau' to assist in achieving a tourism industry that was authentically Māori (Cloher & Johnston, 1999; FRST, n.d.).
The strategic plans of both Te Rūnanga-Ā-Iwi-O Ngāpuhi and Te Rūnanga o Te Rarawa incorporate a sustainable economic base (TRAION, 2007; TROTR, 2008). Te Rūnanga o Te Rarawa stipulates that this will be achieved through promoting initiatives that create employment for iwi members (TROTR, 2008).
A series of hui, followed by workshops, were held to decide how resources within each rohe could best be utilised (FRST, n.d.).
Connections have been made between groups and external organisations to assist in the development of a sustainable operation (FRST, n.d.).
Current status
A Tai Tokerau Tourism Board is elected annually by the Tai Tokerau Māori and Cultural Tourism Association. The Board continues to work to provide a unique tourism experience that supports the local economy and community (Tai Tokerau Māori and Cultural Tourism Association, 2009).

4.4 The Geothermal Resource and Ngātoro-i-rangi

In the central North Island, the warm ground emits a sulphuric smell that penetrates the atmosphere. The constantly steaming holes, the hot-water jets penetrating the air and the embedded pools are credited to the tupuna priest Ngātoro-i-rangi and his sisters. Ngātoro-i-rangi, ancestor of Te Arawa, Ngāti Tahu and Ngāti Tuwharetoa, is said to have been responsible for acquiring the geothermal resource (Tutua-Nathan, 1992). According to tribal stories, Ngātoro-i-rangi voyaged in the waka of Te Arawa to Aotearoa. Once onshore he began an expedition up the mountain Tongariro, claiming a land for his people. However, during the expedition the weather turned severely cold. In need of warmth, he summoned through karakia the help of his sisters in Hawaiki. In response to their brother's call, Kuiwai and Haungaroa sent him the geothermal resource. From this point Ngātoro-i-rangi and his descendants (including Ngāti Tuwharetoa, Ngāti Tahu and Te Arawa) were given the responsibility of kaitiakitanga to ensure the ongoing use and maintenance of the mauri of the geothermal resource for future generations (taonga tuku iho). Through tau utuutu, or reciprocity, the resource in turn provided for these people, being used for cooking, bathing, healing and as wāhi tupu (Tutua-Nathan, 1992).

The arrival of Europeans and the assertion of a European law system over Aotearoa/New Zealand in the 1800s saw the geothermal resource removed from the care of the descendants of Ngātoro-i-rangi. The Geothermal Energy Act 1953 gave the Crown sole right to a geothermal energy resource, and the 1967 Water and Soil Conservation Act gave the government and its agencies management and allocation rights over the resource (Tutua-Nathan, 1992: 196). These two Acts excluded any protection of tribal taonga, which is guaranteed under te Tiriti o Waitangi (ibid.). The geothermal resources within the Ngāti Tuwharetoa, Ngāti Tahu and Te Arawa regions have never been sold to the Crown. Importantly, the iwi are not considered to be fundamentally against the development of the resource provided such develpments are carried out to meet the needs of local iwi and hapū. Kaitiaki requires the utilisation and development of the resource in a manner that ensures its preservation and protection, and that respects the areas of wāhi tapu (ibid.).

In 1993 representatives of Te Arawa made a claim to the Waitangi Tribunal seeking the return of ownership of the geothermal fields. The Tribunal found that Te Arawa asserted an undisputed mana whenua over the resources, and that there was 'no doubt as to the extent of the Arawa people's rangatiratanga and that the geothermal resource over which it was exercised was, for them, a taonga of the highest value' (Waitangi Tribunal, 1993: 13).

In 2003 Ngā Kaihautu o Te Arawa Executive Council was mandated by 11 hapū, and it was formally recognised by the Crown in 2004. An Agreement in Principle was signed between the Executive Council and the Crown in 2005, settling over 50 registered claims by Te Arawa and hapū. The Crown intended to then explore transferring the 45-hectare Whakarewarewa thermal resource to iwi and hapū.

In June 2009 the Central North Island (CNI) Treelords Settlement was implemented. This settlement involved a collective of eight iwi throughout the CNI, including Te Arawa and Ngāti Tuwharetoa. The settlement includes 170,000 hectares around the Bay of Plenty and Taupo (including land around Whakarewarewa) with around 0.5 gigawatts of undeveloped geothermal generation capacity. This equates to around 8% of the country's future power demand. The CNI group is looking at creating a collectively owned geothermal power generation company, which reports indicate could achieve a cash-flow of $170–$200 million per year. The CNI iwi aim to take a strong collective approach rather than being dominated by partnerships with existing geothermal power companies (Donoghue, 2009).

Table 6 The Geothermal Resource and Ngātoro-i-rangi

What are the individual goals?
For affected iwi and hapū to regain rangatiratanga and to be able to exercise kaitiakitanga over the geothermal resource.
For the mauri of the geothermal resource to be restored and maintained.
Specifically, representatives from hapū of Te Arawa seek the return of customary geothermal ownership of the geothermal fields – the Rotokawa baths, the Whakarewarewa geothermal area, the Waitangi soda springs and the associated Rotorua geothermal field.
What has been achieved?
Outcomes of the 1993 Waitangi Tribunal claims saw the following recommendations: – Amending the Resource Management Act 1991 'to take account of the Treaty of Waitangi'. – A suspension of resource consents, and the creation of regional plans concerning the geothermal resource. – Discussion between Crown and claimants about resource rentals and royalties. (Waitangi Tribunal, 1993)
An Agreement in Principle was signed between Ngā Kaihautu o Te Arawa Executive Council and the Crown in 2005, settling over 50 registered claims by Te Arawa and hapū.
The Crown's intention to explore transferring the 45-hectare Whakarewarewa thermal resource to iwi and hapū.
Current status
The June 2009 Central North Island Treelords Settlement included the Whakarewarewa geothermal area and 170,00 hectares of untapped geothermal resources (Donoghue, 2009).

4.5 Lake Horowhenua and Muaupoko

Between the west coast of the lower North Island and the Tararua Ranges sits Lake Horowhenua. It has always remained in Māori ownership, which is remarkable when considered against many other lakes in Aotearoa/New Zealand (White, 1998: 88). The Muaupoko iwi that resided in this area received sustenance from a land brimming with resources. The forest carpet of the ranges provided shelter to the occupiers of the land converging on the lake and swamplands (MfE, 2001). Lake Horowhenua was supplied by nearby swamps, streams and springs, and drained by the Hokio stream (White, 1998: 63). The local people were able to source tuna (eel), kōura (freshwater crayfish), kākahi (freshwater mussels), inanga (whitebait), pātiki (flounder) and water birds from the lake. The diversity and abundance of all life was a sign of a healthy and well-sustained mauri.

The Muaupoko iwi have been the long standing occupants of the lake and the surrounding land. In the 1820s, Te Rauparaha and the Ngati Toa people migrated to the Kapiti Coast during which time the two island pā on the lake were successfully attacked. Despite this, the Muaupoko people maintained their rights to the lake due to their continual occupation of the land (Anderson & Pickens, 1996: 11–13). However, this unrest led to a period of uncertainty and dispute surrounding ownership including legal action through which other local tribes (including Ngati Raukawa and Ngati Apa) laid claim to areas of Horowhenua (ibid.: 24, 213– 235). The Horowhenua Commission 1896 finally resolved many of these issues by dividing up the land blocks and naming 82 Muaupoko owners of the lake (ibid.: 275). Over time, Levin grew and the non-Māori population increased; both of which led to growing concerns over shared use and lake access. Notably, the Reserves and Other Lands Disposal Act 1956 acknowledged that the lake belonged to the Muaupoko, but at the same time legislated that the public had free right of access over and the use and enjoyment of the lake, as described in the Act[7] (ibid.: 281–308).

Over the last two centuries a remarkably altered landscape has emerged (MfE, 2001). A majority of the native forest on the lake margin was milled, which affected the abundant birdlife the forest had previously brought (White, 1998). In addition, draining and farming the swamplands that fed the lake, as well as 35 years of sewage discharged directly into it, have all contributed to its deteriorating health (MfE, 2001). The lake and the surrounding area can no longer provide sustenance, even for a small population, and although recreational activities on the lake have been notified as safe, the water is deemed not suitable for drinking (MfE, 2001).

[7] S18 (4): Notwithstanding the declaration of any land as being in Māori ownership under this section, there is hereby reserved to the public at all times and from time to time the free right of access over and the use and enjoyment of the land fourthly described in subsection thirteen of this section.

The descendants of the original 82 Muaupoko owners are the current beneficiaries of the lake and the Lake Horowhenua Trust exists to protect and represent their interests. The Lake Horowhenua Trust's role is to care for the land, including the administration of the fishing easements of the lake. (J. Procter, personal communication, November 10, 2009). The Lake Horowhenua Trust and the beneficiaries are working towards restoring the mauri of the lake and surrounding areas. As a part of this initiative, the Lake Horowhenua Trust and Lucas Associates established a Waipunahau (Lake Horowhenua) restoration plan (MfE, 2001). This is a long-term plan, mapping out revegetation strategies and areas of priority. The aim of the restoration is not to bring back the past state, but to 'kick start nature' again, to 'replant and repair the ecological health of the lake and its surrounds sufficient for it to be self-sustaining, to regain its mauri' (MfE, 2001).

In 2001, an individual initiated a review of the Trust by the Maori Land Court (J. Procter, personal communication, November 10, 2009). This led to a period of uncertainty around the future of the Trust during which issues such as a lack of strong guidelines and allegations of misappropriation of funds were raised (Torrie, 2009a). Following this review, 10 new Lake Horowhenua Trustees were appointed in July 2009 by the Māori Land Court. The judge who appointed them required the group to create a charter for the Trust and hold a hui with beneficiaries for approval of the charter within three months of their appointment (ibid.). The trustees have completed a draft Trust Order (or charter) and have presented it to the beneficiaries. It will be presented to the Māori Land Court at the next Levin sitting (J. Procter, personal communication, November 11, 2009).

The Horizons Regional Council has recently ceased collecting and testing water samples from the lake due to harassment of staff. These issues are independent of the Lake Horowhenua Trust and the Muaupoko iwi (J. Procter, personal communication, November 10, 2009). However, the new trustees and the council desire to work together to resolve this issue and to work towards improving the state of the lake (Torrie, 2009b; J. Procter, personal communication, November 10, 2009). There are currently three cases filed with the Māori Land Court associated with the lake.[8] These cases have contributed to the delay in the restoration of the lake and to the considerable changes that have occurred within the Trust (J. Procter, personal communication, November 10, 2009).

[8] The three cases before the Māori Land Court are (i) An injunction to stop the dredging of the lake, (ii) Whether to make the lake a Maori reservation that is wāhi tapu, and (iii) Determining the ownership of the Horowhenua Sailing Club building. These cases are all lodged by individuals and are independent of the Lake Horowhenua Trust. These cases are not yet resolved and are yet to be heard by the court. (Torrie, 2009a).

Table 7 Lake Horowhenua and Muaupoko

What is the specific goal?
To restore the mauri of Lake Horowhenua (Waipunahau).
What has been achieved?
The Lake Horowhenua Trust has developed a long-term strategic plan.
Assistance (such as consultation and financial contributions) has been given by outside parties.
Current status
The Muaupoko iwi, the Lake Horowhenua Trust and the Horizons Regional Council are working together to improve and sustain the environment of the lake. New Lake Horowhenua Trustees were appointed in July 2009 by the Māori Land Court (Torrie, 2009b). There are currently three cases associated with the Lake to be heard by the Māori Land Court.

4.6 The Development of a GMO Policy by Ngāi Tahu

The Ngāi Tahu iwi reside in the southern islands of Aotearoa/New Zealand, and the iwi is a signatory to te Tiriti o Waitangi (TRONT, 2001a). Te Rūnanga o Ngāi Tahu is the organisation that services the statutory rights of the Ngāi Tahu iwi. The Rūnanga has a strong focus on the future, taking a strategic approach to ensuring sustainability for future generations (TRONT, 2009). Ngāi Tahu's strategic plan states that one of its goals is to increase the ability of iwi to:

> exercise rangatiratanga and kaitiakitanga over wāhi tapu, mahinga kai and other taonga tuku iho … which are of paramount importance, being the cornerstone of the spiritual, historical, cultural, social and economic well-being of Ngāi Tahu.
>
> (TRONT, 2001b: 9)

One issue that Ngāi Tahu are concerned about in relation to this goal is genetic modification. As a result of the Crown's commitment under te Tiriti, both iwi and the Crown have the right and the responsibility to protect iwi taonga. Taonga include, among other things, flora and fauna and their traditional uses. As Ngāi Tahu hold mana whenua status, they also practise kaitiakitanga over flora and fauna within their rohe. To allow alteration of this taonga through genetic modification is to fundamentally affect the cultural and spiritual relationship Ngāi Tahu have with those taonga, and Ngāi Tahu's role as rangatira (TRONT, 2001a). For example; native flora and fauna may become genetically altered, creating a new species that might not be recognised as taonga. Furthermore, contamination may lead to a loss of economic opportunities and ownership. This response is perhaps best understood in the context that all things come from the land, belong to it, and return to it, and we should not interfere with the whakapapa of nature (TRONT, 2001a).

One step in working towards the goals of achieving the protection and preservation of native flora and fauna has been Te Rūnanga o Ngāi Tahu's submission to the Royal Commission on Genetic Modification in 2001. The Rūnanga's submission outlined the key concerns of Ngāi Tahu about the use of genetic modification in Aotearoa/New Zealand, and how this could affect iwi and their rights as tangata whenua under te Tiriti (TRONT, 2001a). The Royal Commission did take into account some of the issues raised by Ngāi Tahu; this led the Commissioners to recommend the increased involvement of relevant iwi in the genetic modification decision-making process, and the amendment of the Hazardous Substances and New Organisms Act (HSNO) to 'give effect' to the principles of te Tiriti. However, currently only one of these recommendations has been implemented by government; this is the recommendation that Institutional Biological Safety Committees include at least one Māori member, appointed on the nomination of the hapū or iwi with mana whenua in the locality affected by an application (MfE, 2003).

Another important step in working towards the goal of protecting Ngāi Tahu taonga in relation to genetic modification has been the establishment of the Te Rūnanga o Ngāi Tahu (HSNO) Committee, which has compiled the document *The Hazardous Substances and New Organisms Policy Statement 2008.* This document outlines the concerns and policy objectives of Ngāi Tahu in relation to the HSNO Act 1996, and is designed to assist Te Rūnanga o Ngāi Tahu in providing tribal responses to HSNO matters (TRONT, 2008).

Table 8 The Development of a GMO Policy by Ngāi Tahu

What are the individual goals?
To protect the taonga of indigenous flora and fauna from genetic modification.
To protect and foster customary rights/ownership.
To increase the iwi's ability to exercise rangatiratanga and kaitiakitanga over taonga.
To influence policy in a way that aids the realisation of these goals.
What has been achieved?
A space was created for Ngāi Tahu to have influence in the genetic modification decision-making process.
Working relationships were established between Te Rūnanga o Ngāi Tahu, the Environmental Risk Management Authority (ERMA), applicants and other relevant stakeholders.
Following recommendations from the Royal Commission on Genetic Modification, Institutional Biological Safety Committees are now required to include at least one Māori member, appointed on the nomination of the hapū or iwi with mana whenua in the locality affected by an application (MfE, 2003).
Current status
As indicated by the HSNO Policy Statement prepared in 2008 by the Te Rūnanga o Ngāi Tahu HSNO Committee, Ngāi Tahu continues to take an active interest in issues surrounding genetic modification in New Zealand (TRONT, 2008).

5. Interconnections Between Kaupapa

While this report has attempted to briefly describe each kaupapa individually, they do not exist in isolation; rather, each exists because of the whole. This can be seen in the six case studies, where there is no mention of kaupapa in the singular; it is the interconnected combination of kaupapa working together that creates a picture of how each kaupapa is at play within a particular project or strategy.

It is the intricate and forged relationships that iwi and hapū have with their customary lands, and the obligations they must uphold, that give reasoning to the goals. Specifically these goals relate to natural and physical resources. Maintaining the kaupapa of ahi kā and mana whenua also endorses other kaupapa such as rangatiratanga, kaitiakitanga, tau utuutu, mauri, tapu, mahinga kai, and taonga tuku iho, all of which underpin the goals. However, they also interrelate and help to promote other priorities that are acknowledged in iwi and hapū strategic plans, such as kotahitanga; retaining and using mātauranga that is iwi- and hapū-specific; using tikanga specific to iwi and hapū; promoting the use of te reo and sharing of ancestral knowledge; guiding sustainable development; forming partnerships with other agencies and entities, and strengthening the people. Although six case studies do not provide a comprehensive review of the landscape, they do show parts of this landscape and serve to demonstrate the interconnections between kaupapa.

Awareness of these interconnections makes clear the difficulty of understanding aspects of kaupapa Māori when they are compartmentalised or separated out from the whole. For example, it would not be appropriate to discuss or use the term ‘mauri’ without understanding, acknowledging and incorporating the terms ‘rāhui’, ‘tapu’, ‘kaitiakitanga’, ‘rangatira’ and ‘mana whenua’. The existence of these interconnections perhaps helps explain the holistic approach and world view that tāngata hold not only with regard to the environment, but to life and everyday regulation.

6. Three Main Goals

Drawing upon the six iwi- and hapū-based case studies and the individual goals identified within each summary table, some common themes became apparent. In particular, three shared goals stood out:

1. The revival and protection of taonga, such as fauna, flora, and their marine, freshwater, and terrestrial ecosystems.
2. The wise, sustainable use of resources in order to sustain their mauri and that of the people.
3. To achieve tino rangatiratanga rights and kaitiakitanga responsibilities relating to iwi and hapū resources.

The nature of these shared goals derives from case studies, which in turn draw from a 'te ao Māori' view, which incorporates mātauranga Māori and tikanga Māori and the responsibilities iwi and hapū have to the spiritual and physical world. When summarised, the goals of iwi and hapū are to protect, use and gain authority over their resources, stemming from the fact that they are tangata whenua and have obligations to fulfil.

Taking these shared goals into consideration provides some insight into what an NSDS might incorporate. However, we are by no means suggesting that this preliminary research represents what iwi and hapū want to see in an NSDS, and in no way have we tried to speak on behalf of iwi and hapū. Rather, this report is a preliminary exploration of iwi and hapū goals, developed principally from a review of published material. Proper and full consultation with iwi and hapū is still the best way forward. The challenge for government, iwi and hapū is to engage effectively, so that Māori and non-Māori New Zealanders can co-exist in a way that respects the rights and responsibilities of all New Zealanders. Once this challenge has been met, we may begin to experience an increase in the well-being of the people of Aotearoa/New Zealand, where a common respect and understanding is held for the unique world view of iwi and hapū; a world view that has sustained them and the land for nearly a thousand years.

Glossary

Note: We have primarily used the online version of the *Te Aka Māori-English, English-Māori Dictionary and Index* to source these definitions (Moorfield, 2009). Where this was not possible we have used alternative sources, which are referenced within the glossary.

Term	Definition
ahi kā	burning fire; rights to land by occupation (Mead, 2003: 359)
Aotearoa	the Māori name for New Zealand
atua	ancestor with continuing influence, god, demon, supernatural being, deity, ghost, object of superstitious regard, strange being, god
aua	yellow-eyed mullet
awa	river, stream, creek
hapū	kinship group, clan, tribe, subtribe – section of a large kinship group
Haumia-tiketike	one of the offspring of Rangi-nui and Papa-tū-ā-nuku and atua of fernroot and uncultivated food
Hawaiki	ancient homeland – the places from which Māori migrated to Aotearoa/New Zealand
hui	gathering, meeting, assembly, seminar, conference
inanga	whitebait
iwi	extended kinship group, tribe, nation, people, race – often refers to a large group of people descended from a common ancestor
kahawai	an edible greenish-blue to silvery-white schooling coastal fish with dark markings and spots, an elongated body and a high front dorsal fin
kaio	freshwater mussel (HMTB, 1999: 16) (see also kākahi)
kaitiaki	trustee, minder, guard, custodian, guardian
kaitiakitanga	guardianship, trusteeship, resource management (Kawharu, 2002: 399)
kākahi	freshwater mussel (see also kaio)
kanae	grey mullet
karakia	incantation, prayer, grace, blessing, service, church service, ritual chant, chant, intoned incantation – chants recited rapidly using traditional language, symbols and structures
kaumatua	adult, elder, elderly man, elderly woman
kaupapa	topic, basis; guiding principles (MAI Review, n.d.)
kaupapa Māori	Māori ideology
kauri	the largest forest tree, found only in the northern North Island; it has a large trunk and small, oblong, leathery leaves
kotahitanga	unity

Term	Definition
kōura	freshwater crayfish
kōwhai	small-leaved native tree common along riverbanks and forest margins, and noted for its hanging clusters of large yellow flowers in early spring
kūkupa	New Zealand pigeon (northern dialects), kererū, *Hemiphaga novaeseelandiae* – a large green, copper and white native bush pigeon
mahinga kai	seafood gardens and other traditional sources of food (Mead, 2003: 362)
mana	prestige, authority, control, power, influence, status, spiritual power, charisma – mana is a supernatural force in a person, place or object. Mana goes hand in hand with tapu, with one affecting the other
mana Atua	Gods of the Māori world; spiritual authority (Mead, 2003: 362)
mana whenua	separate identity, autonomy – 'mana' through self-determination and control over one's own destiny
Māori	aboriginal inhabitant of Aotearoa/New Zealand
marae	courtyard – the open area in front of the wharenui, where formal greetings and discussions take place. Often also used to include the complex of buildings around the marae
mātauranga	education, knowledge, wisdom, understanding, skill
mātauranga Māori	Māori knowledge (MAI Review, n.d.)
maunga	mountain
mauri	life force (Kawharu, 2002: 399)
motu tapu	sacred island
ngārara	insects, reptiles
pā	fortified village
Papa-tū-ā-nuku	Earth mother, wife of Rangi-nui
pātiki	flounder
rāhui	a temporary ritual prohibition, closed season, ban, reserve – traditionally a rāhui was placed on an area, resource or stretch of water as a conservation measure or as a means of social and political control for a variety of reasons
rangatira	chief, noble (Kawharu, 2002: 399)
rangatiratanga	customary authority and control, sovereignty (Kawharu, 2002: 399)
Rangi-nui	atua of the sky and husband of Papa-tū-ā-nuku, from which union originate all living things
rohe	boundary, district, region, territory, area, border (of land)
Rongo-mā-Tāne	atua of the kūmara and cultivated food and one of the offspring of Rangi-nui and Papa-tū-ā-nuku

Term	Definition
Rūaumoko	atua of earthquakes, volcanoes and the youngest child of Rangi-nui and Papa-tū-ā-nuku
rūnanga	council, tribal council, assembly, board, boardroom
take	claim (Williams, 2005: 52)
Tāne-mahuta	atua of the forests and birds and one of the children of Rangi-nui and Papa-tū-ā-nuku
Tangaroa	atua of the sea and fish, he was one of the offspring of Rangi-nui and Papa-tū-ā-nuku and fled to the sea when his parents were separated
tāngata	people, men, persons, human beings
tangata whenua	local people, hosts, indigenous people of the land – people born of the whenua, i.e. of the placenta and of the land where the people's ancestors have lived and where their placenta are buried
taonga	property, goods, possessions, effects, treasure, something prized
taonga tuku iho	gift of the ancestors, precious heritage (Mead, 2003: 367)
tapu	under the influence of atua protection, sacred, prohibited, restricted (Ka'ai et al., 2005: 239)
tau utuutu	reciprocity (Water & Cahn, 2007: 341)
Tāwhiri-mātea	atua of the winds, clouds, rain, hail, snow and storms
te ao Māori	Māori world view (MAI Review, n.d.)
te reo Māori	the Māori language
te Tiriti o Waitangi	the Māori version of the Treaty of Waitangi
tiaki	to guard, keep, look after, nurse, care, protect, conserve
tikanga	correct procedure, custom, habit, lore, method, manner, rule, way, code, meaning, reason, plan, practice, convention
tikanga Māori	Māori customs and practices (MAI Review, n.d.)
tino rangatiratanga	self-determination
Tūmatauenga	atua of war
tuna	eel
tupuna	ancestors, grandparents
wāhi tapu	sacred spots [places] (Mead, 2003: 367)
waiata	song, chant psalm
waka	canoe, vehicle, conveyance, spirit medium, medium (of an atua), long narrow receptacle, box (for feathers), water trough
whakapapa	genealogy (Mead, 2003: 370)
whānau	extended family, family group, a familiar term of address to a number of people

Term	Definition
whānaungatanga	relationship, kinship, sense of family connection – a relationship through shared experiences and working together which provides people with a sense of belonging. It develops as a result of kinship rights and obligations, which also serve to strengthen each member of the kin group. It also extends to others to whom one develops a close familial, friendship or reciprocal relationship
wharenui	meeting house, large house – main building of a marae where guests are accommodated
whenua	land, country, ground, placenta, afterbirth

Abbreviations

ERMA	Environmental Risk Management Authority
FRST	Foundation for Research, Science and Technology
HMTB	Hauraki Māori Trust Board
HSNO	Hazardous Substances and New Organisms
MfE	Ministry for the Environment
NSDS	National Sustainable Development Strategy
SFI	Sustainable Future Institute
TRAION	Te Rūnanga-Ā-Iwi-O Ngāpuhi
TRONH	Te Rūnanga o Ngāti Hine
TRONT	Te Rūnanga o Ngāi Tahu
TROTR	Te Rūnanga o Te Rarawa

References

Anderson, K., & Pickens, K. (1996). *Rangahaua Whanui District 12: Wellington District*. Wellington: Waitangi Tribunal. Retrieved 12 November 2009 from http://www.waitangi-tribunal.govt.nz/resources/researchreports/rangahaua_whanui_reports/district_reports/whanui_disctrict12.asp

Barlow, C. (2004). *Tikanga whakaaro: Key concepts in Māori culture*. Melbourne: Oxford University Press.

Cloher, D., & Johnston, C. (1999). Maori sustainability concepts applied to tourism: A North Hokianga study. *New Zealand Geographer*, *55*(1), 46–52.

Donoghue, T. (2009). Treelords deal leads to power plant plant. *The Dominion Post*, 29 July. Retrieved October 30, 2009 from http://www.stuff.co.nz/national/politics/2547469/Treelords-deal-leads-to-power-plant-plan

Durie, M. (2006). *Measuring Maori wellbeing*. Presented at the New Zealand Treasury Guest Lecture Series, Wellington, 1 August 2006.

Foundation for Research, Science and Technology (FRST) (n.d.). *A sustainable Māori tourism for Tai Tokerau: Auckland Uniservices Ltd*. Retrieved February 10, 2009 from http://www.frst.govt.nz/files/Maori.pdf

Harmsworth, G., Barclay-Kerr, K., & Reedy, T. (2002). Maori sustainable development in the 21st century: The importance of Maori values, strategic planning and information systems. *Journal of Maori and Pacific Development*, *3*(2), 40–68.

Harris, G., & Tipene, P. (2006). Māori land development. In M. Mulholland (Ed.), *State of the Māori nation: Twenty-first-century issues in Aotearoa* (pp. 67–79). Auckland: Reed.

Hauraki Māori Trust Board (HMTB) (1999). *Hauraki customary indicators report to Ministry for the Environment.* Wellington: Ministry for the Environment. Retrieved February 10, 2009 from http://www.mfe.govt.nz/publications/ser/tech-report-57-maori-jun99.pdf

Hauraki Māori Trust Board (HMTB) (2009). *Hauraki welcome infrastructure investment*. Media release. Retrieved October 30, 2009 from http://www.scoop.co.nz/stories/AK0907/S00400.htm

Hazardous Substances and New Organisms Act (1996). Retrieved July 29, 2009 from http://www.legislation.govt.nz/act/public/1996/0030/latest/DLM381222.html?search=ts_act_hazardous_resel&p=1&sr=1

Innes, J., Graham, N., Prime, K., & Spurr, E. (2004). Responses of kukupa *(Hemiphaga novaeseelandiae)* and other birds to mammal pest control at Motatau, Northland. *New Zealand Journal of Ecology, 28*(1), 73–82.

Ka'ai, T. M., & Higgins, R. (2005). Te ao Māori: Māori world-view. In T. M. Ka'ai , J. C. Moorfield, M. P. J. Reilly & S. Mosley (Eds.), *Ki te whaiao: An introduction to Māori culture and society* (pp. 13–25). Auckland: Pearson Education New Zealand.

Ka'ai, T. M., Moorfield, J. C., Reilly, M. P. J., & Mosley, S. (2005). *Ki te whaiao: An introduction to Māori culture and society*. Auckland: Pearson Education New Zealand.

Kawharu, M. (2000). Kaitiakitanga: A Maori anthropological perspective of the Maori socio-environmental ethic of resource management. *Journal of the Polynesian Society, 109*(4), 349–370.

Kawharu, M. (2002). *Whenua: Managing our resources*. Auckland: Reed.

Kilvington, M., Horn, C., Campbell, J., & van Meeuwen-Dijkgraaf, A. (2004). *Plight of the Kereru: Supporting material for approaching iwi regarding kereru management*. Wanganui: Landcare Research and the Department of Conservation. Retrieved November 11, 2009 from http://www.landcareresearch.co.nz/research/sustainablesoc/social/documents/finalplightofKereru.pdf

MAI Review (n.d.). *Glossary of Māori words and terms*. Retrieved July 13, 2009 from http://www.review.mai.ac.nz/info/glossary.php

Marsden, M. H. (2003). Kaitiakitanga: A definitive introduction to the holistic world view of the Māori. In *The woven universe: Selected writings of Rev. Māori Marsden.* Masterton: Estate of Rev. Māori Marsden.

Mead, H. M. (2003). *Tikanga Māori: Living by Māori values*. Wellington: Huia.

Mihinui, H. (2002). Hutia te rito o te harakeke: A flaxroots understanding of resource management. In M. Kawharu (Ed.), *Whenua: Managing our resources* (pp. 21–33). Auckland: Reed.

Ministry for the Environment (MfE) (2001). *Case study 3: Waipunahau (Lake Horowhenua): Restoring the mauri.* Wellington: Ministry for the Environment. Retrieved February 10, 2009 from www.mfe.govt.nz/publications/water/managing-waterways-jul01/case-study-3-jul01.pdf

Ministry for the Environment (MfE) (2003). *Government response to the Royal Commission on Genetic Modification: Legislative changes for new organisms — Paper 8: Changes to more appropriately reflect the Treaty of Waitangi relationship under the HSNO Act*. Wellington: Ministry for the Environment. Retrieved March 30, 2009 from http://www.mfe.govt.nz/issues/organisms/law-changes/index.html

Moorfield, J. C. (2009). Te Aka Māori-English, English-Māori dictionary and index. Retrieved February 10, 2009 from http://www.maoridictionary.co.nz/

Morgan, T. K. K. B. (2005). An indigenous perspective on water recycling. *Desalination, 1–3*(187), 127–136. Retrieved February 10, 2009 from http://www.desline.com/articoli/6963.pdf

Panelli, R., & Tipa, G. (2007). Placing well-being: A Māori case study of cultural and environmental specificity. *EcoHealth, 4*(4), 445–460.

Prime, K. (1999). *Tribal management of natural resources.* Draft for presentation at Second International Wildlife Management Congress in Godollo, Hungary, 1 July 1999.

Reserves and Other Lands Disposal Act (1956). Retrieved November 13, 2009 from http://www.legislation.govt.nz/act/public/1956/0053/latest/DLM304359.html

Resource Management Act (1991). Retrieved June 29, 2009 from http://www.legislation.govt.nz/act/public/1991/0069/latest/DLM230265.html

Roberts, R. M., & Wills, P. R. (1998). Understanding Māori epistemology: A scientific perspective. In H. Wautischer (Ed.), *Tribal epistemologies – essays in the philosopy of anthropology* (pp. 43–77). Brookfield, VT: Ashgate Publishing Company.

Smith, S. M. (2007). *Hei whenua ora: Hapū and iwi approaches for re-instating valued ecosystems within cultural landscape*. Palmerston North: Massey University.

Sustainable Future Institute (SFI) (2007). *A national sustainable development strategy: How New Zealand measures up against international commitments*. Report 1. Wellington: Sustainable Future Institute. Retrieved July 10, 2009 from http://sustainablefuture.info

Sustainable Future Institute (SFI) (2009). *Project 2058 methodology: Version 3.* Wellington: Sustainable Future. Retrieved July 29, 2009 from http://sustainablefuture.info

Sustainable Future Institute (SFI) (in press). *Exploring the shared goals of Māori: Working towards a National Sustainable Development Strategy*. Report 7. Wellington: Sustainable Future Institute. Retrieved July 29, 2009 from http://sustainablefuture.info

Tai Tokerau Maori and Cultural Tourism Association (2009). *About us*. Retrieved November 11, 2009 from http://www.taitokerau.co.nz/about_us.htm

Te Rūnanga-Ā-Iwi-O Ngāpuhi (TRAION) (2007). *Te Rūnanga-Ā-Iwi-O Ngāpuhi: Strategic plan 2007*. Kaikohe: Te Rūnanga-Ā-Iwi-O Ngāpuhi. Retrieved February 13, 2009 from: http://www.ngapuhi.iwi.nz/index.php?option=com_content&view=article&id=25&Itemid=46

Te Rūnanga o Ngāti Hine (TRONH) (2008). *Ngāti Hine iwi environmental management plan.* Retrieved March 30, 2009 from http://www.wdc.govt.nz/agendas_online/MA_11112008/nga_tikanga_mo%27te_taiao_o_ngati_hine.pdf

Te Rūnanga o Ngāi Tahu (TRONT) (2001a). *Te Rūnanga o Ngāi Tahu submission to the Royal Commission on Genetic Modification*. Christchurch: Te Rūnanga o Ngāi Tahu.

Te Rūnanga o Ngāi Tahu (TRONT) (2001b). *Ngāi Tahu 2025*. Christchurch: Te Rūnanga o Ngāi Tahu. Retrieved March 30, 2009 from http://www.ngaitahu.iwi.nz/Publications/Governance/#2025

Te Rūnanga o Ngāi Tahu (TRONT) (2008). *Hazardous substances and new organisms policy statement 2008*. Christchurch: Te Rūnanga o Ngāi Tahu. Retrieved March 30, 2008 from http://www.ngaitahu.iwi.nz/Ngai-Tahu-Whanui/Natural-Environment/Environmental-Policy-Planning/HSNO/

Te Rūnanga o Ngāi Tahu (TRONT) (2009). Website. Christchurch: Te Rūnanga o Ngāi Tahu. Retrieved March 30, 2009 from http://www.ngaitahu.iwi.nz/

Te Rūnanga o Te Rarawa (TROTR) (2008). *Strategic plan, Te Rūnanga o Te Rarawa*. Kaitaia: Te Rūnanga o Te Rarawa. Retrieved February 10, 2009, from http://www.terarawa.co.nz/organization.html

Torrie, B. (2009a, September 8). Lake trustees told strict guidelines needed on funds. *Manawatu Standard*. Retrieved October 30, 2009 from http://www.stuff.co.nz/manawatu-standard/news/2843393/Lake-trustees-told-strict-guidelines-needed-on-funds

Torrie, B. (2009b, October 10). Pollution tests stop at lake. *Manawatu Standard*. Retrieved October 30, 2009 from http://www.stuff.co.nz/manawatu-standard/news/2951524/Pollution-tests-stop-at-lake

Tunks, A. (2002). Rangatiratanga, partnership and protection. In M. Kawharu (Ed.), *Whenua: Managing our resources* (pp. 322–340). Auckland: Reed.

Tutua-Nathan, T. (1992). Māori tribal rights to ownership and control: The geothermal resource in New Zealand. *Applied Geography 12*(2), 192–198.

Waitangi Tribunal (1993). *Preliminary report on the Te Arawa representative Geothermal Resource Claims.* Wellington: Brooker and Friend. Retrieved March 10, 2009 from http://www.waitangi-tribunal.govt.nz/reports/downloadpdf.asp?reportid=F777365D-DA9C-4C06-B4AB-641071C346C2

Water, E., & Cahn, M. (2007). Mahinga kai. *International Journal Business Performance Management, 9*(3), 338–343.

White, B. (1998). *Rangahaua Whanui National Theme q: Inland waterways: Lakes*. From the Rangahaua Whanui Series. Wellington: Waitangi Tribunal. Retrieved February 10, 2009 from http://www.waitangi-tribunal.govt.nz/doclibrary/public/researchwhanui/theme/q/white/Chapt03.pdf

Williams, J. (2005). Papa-tūā-nuku: Attitudes to the land. In T. M. Ka'ai, J. C. Moorfield, M. P. J. Reilly & S. Mosley (Eds.), *Ki te whaiao: An introduction to Māori culture and society* (pp. 50–60). Auckland: Pearson Education New Zealand.

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