

6. TRADITIONAL KAITIAKITANGA RIGHTS AND RESPONSIBILITIES

6.1 Kia Tupato

I am conscious that I am walking in sacred territory when I am seeking to draw the attention of the Tribunal to valued traditional knowledge and evidence of customary usages of taonga Maori. It is proper that the Tribunal will seek directly from those who have learned the old wisdom in the old ways some indications of traditional rights and responsibilities of kaitiakitanga. It is my task merely to offer a bare outline of the nature of the understandings of iwi and hapu so that the Crown and other interested parties may be assisted in formulating an appropriate response to the issues raised by Wai 262. I will primarily rely on the words of others in presenting this material. As the claimant Dell Wihongi and others have written:

Historically, the knowledge of indigenous peoples has been the preserve of anthropologists and ethnographers. This paper addresses the need for a Maori perspective on conservation to be seen and heard in the scientific literature. There are however, considerable problems associated with this endeavour, which relate in large part to the training and methodology of western trained scientists that permits objective and testable explanations only of natural phenomena. These constraints, combined with an unfamiliarity with other cultural perspectives (more familiar to the social scientist), make our task of communication a difficult one. What follows is an attempt to provide a Maori perspective in a way that is culturally appropriate for Maori: ...

Maori share with other indigenous peoples a legitimate concern and apprehension when uninitiated enter their cultural world. Not only is there a need for respect, but also for caution about the dangers inherent in 'getting on the bandwagon but starting at the top' without having first served an appropriate apprenticeship in learning about the culture, its history, cosmogony, customs and language. Too often, the lack of these attributes has led to subsequent misuse and even abuse of superficially acquired knowledge, thus reinforcing the reluctance of many Maori to share their knowledge with the uninitiated.

A further caution is a need to accept that there is no single Maori perspective on this subject – nor indeed on any other. ‘Maori’ are in fact composed of discrete groups, each group (iwi or tribe) having its own distinctive, although recognisably similar, ‘perspective’.¹

6.2 Maori Cosmogony and Fundamental Knowledge

In a report prepared for the Ministry for the Environment in 1988, Rev M Marsden presented his whare wananga learnings in this description of the Maori world view:

Like the new physicists, the Maori perceived the universe as a ‘Process’. But they went beyond the new physicists’ idea of the real world as simply ‘pure energy’ to postulate a world comprised of a series of interconnected realms separated by aeons of time from which there eventually emerged the natural world. This cosmic process is unified and bound together by spirit.

Their World of Symbol

The ancient Maori seers, like the later modern physicists, created their sets of symbols to provide them with their maps/models to portray each state in this evolutionary process. These representations were the means by which they could elucidate the various worlds; and grasp what they perceived as ultimate reality.

These symbols were encapsulated in mechanisms of traditional lore and liturgical action. The institution of ancestral genealogy portrayed in minor thematic symbols as the tree developing from seed to fruit or the sexual act culminating in the birth of the child out of the darkness of the womb into the light of the natural world were some of the main ways by which the real world was represented. Just as human genealogical tables denoted successive generations of descent, by analogy every living organism in the natural world, every tree, fish, bird or object is the result of a prior cause, of a chain or procession of events.

Each thing, whether in the real or natural world, had its own root foundations in the ‘cosmic tree’ which was sometimes depicted as having its roots in heaven and its crown on earth. But whatever symbolic representation was chosen, the methodology was to recite first the ac-

1. M Roberts, W Norman, N Minhinnick, D Wihongi, C Kirkwood, *Kaitiakitanga: Maori Perspectives on Conservation*, University of Auckland, 1995, pp 1–2

tual genealogy itself and then to embed it in narrative form. The genealogy was learned by rote and provided the frame or skeleton, and the narrative form clothed it in flesh. This latter provided the explanation.

Genealogy of Creation

Io-taketake, Creator, Root-cause

Void Abyss Night

Shoot Taproot Laterals Rhizome Hairroot

Seeking Pursuit Extension Expansion Energy

Primordial Memory Deep Mind

Sub-conscious Wisdom

Seed-word Breath of Life

Shape Form

Time Space

Heaven Earth (The Natural World)

Narrative Form

Io-taketake, the Ground of Being, Root Cause, Creator; stood alert in his intense and awesome Tapu. Then he stirred himself, uttered his word into eternity and the Void, the Abyss and the Endless Night came together to form the spiritual framework in which the cosmic process could begin to operate. Thus, the seed-bed of creation, the realm of the Potential or Becoming was established.

Io-wananga, uttered his word and the root foundation of all things were established – the seed, the shoot and the various roots. In Te Kakano, the original seed pulsed the life-principle (mauri) impelling the shoot to emerge and branch forth as roots seeking, pursuing, extending, enlarging, spreading, increasing urged on by its mauri from behind in its quest for being. After aeons of time that insentient movement reaching critical mass burst forth into pure energy (hihiri).

How can the potential achieve being and the process assume a meaningful purpose? Out of Te Hihiri was birthed primordial memory, which developing through deep mind, the subconscious, and consciousness achieved wisdom. Thus, definite order, direction and purpose guided the process.

Transition from the world of spirit into the world of the material was now possible. Forces and events were gathering beyond the Veil (Te Arai) which divides Night and Day.

The Breath of Life (Hau-ora) was infused into the Void and the veil was lifted to allow the Dawn light to enter. It shattered the darkness and freed the bounds of Night to release the richness of life conceived in the womb of Te Kore and Te Kowhao to being, to emerge.

Shape and Form came into being in Time (Wa) and Space (Atea). Thus, Heaven and Earth were formed.

Tihe Mauri Ora! Ki te Whaiao, Ki te Ao-marama! The Life-principle emerges into the dawnlight, the broad light of day, Natural World.

Processes of a new order now began to operate in the spacetime continuum in which the world of Sense-perception was located. Out of the Black Hole (Te Kowhao) Rangi and Papa emerged clinging to each other. Dim light alone filtered between them. Into this constricted space were born their seventy children, the lesser gods who, chafing at their incarceration, resolved to part their parents. Under the leadership of Tane their efforts were successful and they too emerged into the broad day, they became the departmental gods over natural resources. From them were descended the myth heroes and from those tupua came our tupuna.

Ultimate Reality (Maori)

That ultimate reality is wairua-spirit;

The Universe is 'Process';

Io-taketake, is First Cause, Ground of Being, Creator and Genesis of the cosmic process;

Spirit is ubiquitous, imminent in the total process;

upholding/sustaining/replenishing/regenerating all things by its Hau or Mauri (Breath of Life-principle);

As a corollary of the above, the All is One and interlocked together;

Man is both human and divine an integral part both of the cosmic process and of the natural order;

The Maori approach to life is holistic. There is no sharp division between culture, society and their institutions.

Because of this holistic approach the Maori avoids the disjunction between the secular and spiritual, the compartmentalisation and isolation of one institution from another. The piecemeal approach as favoured in the present system has one major weakness. It prescribes for the symptoms rather than the real causes. The solutions are temporary

and partial because the real problems are either not understood or simply ignored. Eventually the problem flares up in a more virulent form.²

A somewhat similar account of Maori cosmogony which includes whakapapa references to some of the significant species of flora and fauna is included in the paper by Dr M Roberts, Dell Wihongi and others:

Maori customs, values and attitudes (inadequately described as 'the Maori world view' or belief system) derive ultimately from an indigenous body of knowledge which seeks to explain the origin of the universe. According to Schwimmer, Maori cosmogony has 'the distinction of peering most deeply into the infinite darkness that existed before life began'. Two aspects fundamental to this cosmogony are the whakapapa (genealogy) and the personification of natural phenomena. The latter, combined with metaphorical language enabled Maori to clothe explanations and meanings in poetic imagery. Thus Maori developed complex genealogical constructs to explain both the time before and the time after the origin of the Universe, including the creation of life. Again the reader needs to be cautioned that these cosmogonic 'trees' vary in detail from tribe to tribe, and so the following highly abbreviated account 'creates a perfection which never existed'.

Most versions consist of recitations of creation events arranged in a genealogical order. Some wananga (schools of learning) begin with a description of Te Kore (the realm of 'chaos' or 'nothingness'; of 'potential being'. In this realm dwelt Io, the supreme being from whose iho (essence) the subsequent voids were conceived. Thus from Te Kore arose Te Po (the night realm), and from thence the twilight dawn, then Te Ao Marama (the full light of day). Io then created a single being or ancestor from whence came Rangi and Papa (who after separation, became known as Ranginui e tu iho nei, the male principle, or 'sky father', and Papatuanuku, the female principle or 'earth mother'. From these two primal parents arose many offspring, all supernatural beings, each responsible for, or guardians of, particular natural phenomena. Tane was the most important, hence Tane nui a Rangi (Tane the greatest son of Rangi). Personified as Tane mahuta (god of the standing forest), he engaged in numerous procreation events with supernatural female deities. For example, from Hinewaoriki came the kahikatea (*Podocarpus dacrydioids*) and matai (*P. taxifolia*) trees, and from Mumuhunga the totara (*P. totara*) tree; in all a total of eight wives produced nine species

2. Reverend M Marsden, *The Natural World and Natural Resources: Maori Value Systems and Perspectives*, Ministry for the Environment, Resource Management Law Reform Core Group Working Paper, no 29 part A, 1988, pp 9–11

of large trees. With Punga he produced the insects and other small creatures of the forest, while from Parauri came the tui (*Prothemadera novaeseelandiae*). Further cohabitations produced all the other birds indigenous to Aotearoa.

Tangaroa was god of the sea and all sea creatures. All fishes are descended from one of his grandchildren (Ikaterere) and reptiles from another (Tutewehiwehi).

Tawhirimatea was god ancestor of the winds and all other meteorological aspects while Tumatauenga had authority over warfare, and human affairs. In some tribal whakapapa he is also the progenitor of human beings. Rongomatane, god of agriculture, was responsible for all cultivated foods, especially the kumara (*Ipomea batatas*), also the taro (*Colocasia esculenta*), the hue or gourd (*Laganaria siceraria*), and the ufi or yam (*Dioscorea* sp.). To this function was added that of god of peace. Haumiatiketike was god of the uncultivated foods, eg. the bracken fern root (*Pteris aquilina*), an important food source in Aotearoa.

Because of the close embrace of the Sky father and Earth mother, their children dwelt in darkness. In order to obtain the light, the brothers schemed to separate their parents. This was eventually accomplished by Tane (hence Tane tokorangi, propper-up-of-the-sky) standing on his hands (his 'roots' embedded in the earth mother) and pushing with his feet (his branches) against Rangihirea, who had arched his back against his father's chest and stomach. The other brothers, with the exception of Tawhirimatea, assisted by way of karakia (ritual chants and incantations). Thus were earth and sky separated. War then broke out among the children and Tawhirimatea, who had opposed the separation, joined his father in the heavens. From thence he sent forth strong winds and storms which uprooted the forests of Tane. Tangaroa fled to the sea, while Rongomatane and Haumiatiketike sought refuge in the bosom of their mother. Only Tumatauenga stood firm against the winds and storms of his brother. When these subsided, Tane was able to complete the heavens by locating the sun and moon in the sky and placing the stars (including Rangihirea, who became Paianuiarangi or the Milky Way) on the breast of Ranginui. Yet the grief of the two parents at their separation still remained, and forever after the tears of Ranginui rain down from the skies, while the rising mists express the ongoing love of Papatuanuku for her husband.

One major creation event, the origin of human kind, was yet to be accomplished. Because the offspring of Ranginui and Papatuanuku were all gods possessing *ira atua* (supernatural life) it was necessary for them to find or to create a female of earthly origin from whence *ira tangata* (mortal life) could be brought forth. Tane led the search for the female element from which to create human kind, but eventually the gods were forced to the conclusion that they themselves would have to create the female essence. So they moulded a human form from the red clay of Kurawaka at Hawaiki (the ancestral homeland of Maori). Tane then breathed into his nostrils the *Ha* or breath of life, whereupon the eyes opened, the mouth gasped, and a sneeze broke forth; (hence the saying 'Tihei mauri ora' – I breath, I am alive!). Thus was Hineahuone, the earth-formed maiden, created from the substance of Papatuanuku, from the *whenua* (earth) and imbued with the *mauri* (life force) of the gods. Hineahuone and Tane then produced Hinetitama (the Dawn Maid) who Tane took to wife so that the human species might continue.

Several points important to the subject of this paper emerge from this abbreviated account. Firstly, the three cosmological realms (*Te Kore* – the realm of potential being; *Te Po* – the realm of becoming; *Te Ao Marama* – the realm of being) are linked (by the great path of Tane). Along this pass, in opposite directions, the departing spirits descending to Hawaiki, and 'that which is in the process of becoming', ascending to the world of being. Thus the universe is holistic and dynamic; there is within it in ongoing process of continuous creation and recreation.

Secondly, everything in the Universe, inanimate and animate, has its own *whakapapa* or genealogy, and all are ultimately linked via the gods to Rangi and Papa. There is no distinction or break in this cosmogony, and hence in the *whakapapa* between supernatural and natural. Both are part of a unified whole. 'The bond this creates between humans and the rest of the physical world is both immutable and unseverable'. Every Maori shares this descent from gods, goddesses, guardians and superhumans. Furthermore, as Hohepa remarks, 'these multi-god/ess guardians and responsibilities, these ties with humans who have the divine spark of descent from gods, are not compatible with ... the Christian belief of an independent God who has no genealogical connection, and who exists in splendid isolation somewhere in heaven'.³

3. M Roberts, W Norman, N Minhinnick, D Wihongi, C Kirkwood, *Kaitiakitanga: Maori Perspectives on Conservation*, University of Auckland, 1995, pp 3–5

Of course, it is entirely plausible to adopt a position of scepticism about these accounts especially in the versions recorded by early Pakeha ethnographers. Thus Te Rangi Hiroa (Sir Peter Buck) when Professor of Anthropology at Yale University in the United States of America writes of the 'manufacture of gods' and the 'creation of creators':

'In the creation myth, the gods created man. Later, to meet the needs of an expanding population, man created gods in addition to those which had created him. However, as man had composed the creation myth, it stands to reason that he had created all the gods. Early man knew that human beings were reproduced by the mating of male and female, but the production of the first human beings was a problem. It required some power beyond the human to produce the first of the human species. With the principle of human sex reproduction in mind, he supplied that superhuman power by personifying the sky as a male, the earth as a female, and then mating them. They produced offspring who were endowed by man with the miraculous powers which he desired but could not acquire.

It was the easier, as well as more blessed, to give than to receive. Man's theoretical ignorance concerning the first sexual act was also transferred to the gods, and the dilemma it created among them has been a source of amusement to subsequent generations. Thus, according to the classical myths, the primary gods were created by the process of personification which paved the way for theoretic sexual reproduction.

In New Zealand, as well as in Polynesia, personification was a convenient process to apply to natural phenomena or the physical features of the country, and such personifications were also mated to produce other personifications. They were endowed with a spirit by the very fact of personification. However, most of them remained as abstract conceptions, and such tribal gods as have been deemed personifications were probably deified ancestors who were provided with a natural phenomenon as a symbol or *aria*. Thus, Kahukura was a deified ancestor in Rarotonga, and the god of the same name in New Zealand was probably imported. In New Zealand, the symbol allotted to him was the rainbow, the common name of which is *aniwaniwa*. However, when people regarded the appearance of a rainbow as the symbol of the god, they were likely to exclaim, '*Ko Kahukura*' (It is Kahukura). In time, *Kahukura* and *aniwaniwa* would become synonyms. Thus Kahukura was not a per-

sonified rainbow, but originally a deified ancestor who gave his name to his symbol. A similar argument applies to Uenuku, another deified ancestor with the rainbow symbol, and to Rongomai, with the comet symbol. ...

The discovery of a supreme god named Io in New Zealand was a surprise to Maori and *pakeha* alike. For years we had accepted the pattern of a number of co-equal gods, each attending to his own department. Though references to Io had been made in the literature, the extent of his claims was not fully realised until an extraordinary amount of detail was furnished by Percy Smith and Elsdon Best through the publication of copious extracts from the Matorohanga manuscript. Both Smith and Best were enthusiastic in their acceptance of the Io material, but many others were doubtful because the Io version of the separation of light from darkness, the division of the waters, and the creation of the earth, were too reminiscent of similar episodes in the first chapter of Genesis. The doubt grew when it was considered that both Te Matorohanga and his scribe Te Whatahoro had been converted to Christianity before the detailed story of Io was committed to manuscript. The New Zealand discovery of a supreme creator led to a search for the same or similar creators in Polynesia, and it is amazing what a mass of secret information was alleged to have been locked away in the minds of cautious Christians who but awaited the inquiry of sympathetic seekers to unloose the floodgates of memory.⁴

Yet the academic's scepticism is not particularly relevant to the continuing significance of myth and legend in understanding the importance of kaitiakitanga principles for iwi and hapu today. It is not a question necessarily of religious belief, or of truth or falsity, or of sensible or silly understandings of the world. It is, as M Marsden and T A Henare explain, a matter of 'fundamental knowledge':

Myth and legend are an integral part of the corpus of fundamental knowledge held by the philosophers and seers of the Maori and indeed of the Polynesian peoples of the Pacific from ancient times. Indeed, there are remarkable parallels and similarities between the extant myths and legends held by the various Polynesian groups who have been separated from each other for time spans ranging from eight hundred to two thousand five hundred years.

4. Te Rangi Hiroa (Sir Peter Buck), *The Coming of the Maori*, Wellington, 1949, pp 511–512, 526

For instance Maui as a myth hero, Tangaroa as the God of the sea, Tane, Rangi, Papa and the stories that revolve around them have a common thread or theme running through them. The concepts which underlie the various legends also exhibit a common motif and focus. Modern man has summarily dismissed these so called myths and legends as the superstitious and quaint imaginings of primitive, pre-literate societies. That assumption could not be further from the truth.

Myth and legend in the Maori cultural context are neither fables embodying primitive faith in the supernatural, nor marvellous fireside stories of ancient times. They were deliberate constructs employed by the ancient seers and sages to encapsulate and condense into easily assimilable forms their view of the World of ultimate reality and the relationship between the Creator, the universe and man.

Cultures pattern perceptions of reality into conceptualisations of what they perceive reality to be; of what is to be regarded as actual, probable, possible or impossible. These conceptualisations form what is termed the '*world view*' of a culture. The World view is the central systematisation of conceptions of reality to which members of its culture assent and from which stems their value system. The world view lies at the very heart of the culture, touching, interacting with and strongly influencing every aspect of the culture.

In terms of Maori culture, the myths and legends form the central system on which their holistic view of the universe is based.

Western culture whose major focus is on the natural universe assumes that it is comprised of indestructible atoms of solid matter and conforms to strict mechanical laws in an absolutely predictable manner go on to further assume that it can be understood and scientifically describable. It therefore applies scientific methodology to understand and describe cause and effect etc.

Other cultures start from other assumptions concerning the universe and arrive at different conclusions. Their logic may be just as good or as bad as Western cultures and the way that they reason from assumption or hypotheses to conclusion may be very similar particularly in regard to the natural world but their basic assumptions may be very different. Other cultural assumptions may be just as valid but focussed on a part of the data that western cultures may ignore. For instance westerners may focus on the 'how' or 'immediate why' of events but seldom concern themselves with the 'ultimate why' of such occurrences.

The 'legend' of Tane ascending to the highest heaven in a bid to obtain the '*Baskets of Knowledge*' from Io the creator demonstrate the principles outlined above.

The legend relates how Tane after he had successfully organised the revolt that led to the separation of their parents Rangī (Father Heaven) and Papa (Mother Earth) having concluded the various purification rites wended his way through the heavens until he arrived at the penultimate heaven. He was again sanctified by Rehua the Priest God of exorcism and purification who then allowed Tane entrance into the twelfth heaven the abode of Io. There he received the three Baskets of knowledge together with two small stones one white and the other a predominantly red coloured stone. The former white stone was named Hukatai (Seafoam) and the latter red stone called Rehutai (Seaspray).

He descended to the seventh heaven where his brothers had completed the Whare Wanganga (House of Learning or Wisdom). After the welcome, he had to undergo more purification rites to remove the intense '*tapu*' ingested from his association with the intense sacredness of Io. Having completed the purification rites, Tane entered the Whare Wananga named Wharekura and deposited the three Baskets of Knowledge named Tuauri, Aronui and Tua-Atea above the '*taumata*' – the seat of authority where the seers and sages sat and then deposited the stones Hukatai and Rehutai, one on either side of the rear ridge pole.

On the surface, such a story may be regarded as a fairytale, a fantasy, to tell to children by the fireside in the evenings. Nothing could be further from the truth for this legend is part of the corpus of sacred knowledge and as such was not normally related in public. Its inner meaning could not be understood without the key to unravel it. And unless all the parts were known and understood it was impossible to make sense of it.⁵

A specific example of the continuing paramountcy of Maori thinking in the context of practical activity is presented by J Patterson in describing the philosophy of work of the weaver Erenora Puketapu-Hetet:

The most commonly used material in traditional Maori weaving is *harakeke* or flax. To a Pakeha *harakeke* is simply a plant. To a Maori, it is a descendent of the great god Tane-mahuta. The myths recorded his exploits; how he separated his father Rangī-nui (the sky) from his

5. M Marsden and T A Henare, *Kaitiakitanga: A Definitive Introduction to the Holistic World View of the Maori*, paper prepared for the Ministry for the Environment, 1992, pp 2–4

mother Papa-tuanuku (the earth), clothed his mother with trees and other plants, fought with and was defeated by his brother Tu-mata-uenga, the warlike ancestor of man. Tane proceeded to form and breathe life into the first woman and with her produced the Maori race. Thus today's Maori are related to *harakeke* and all the other plants: Tane is their common ancestor. Indeed a Maori will refer to plant life simply as Tane, and in that respect regards the trees and other plants as ancestors, requiring respect. On the other hand, as a descendent of the victorious Tu, a Maori is able to make use of the descendants of Tane. Use is permitted, sanctioned by Tu's defeat of Tane, but it must be respectful use, for Tane too is an ancestor of the Maori people.

This need to respect the materials used is often expressed in terms of the concept of *mauri* or life force:

It is important to me as a weaver that I respect the *mauri* (life force) of what I am working with. Once I have taken it from where it belongs, I must give another dimension to its life force so that it is still a thing of beauty.

This is the central idea, and it applies to all sorts of work. The materials used are seen as having a life of their own, not simply as means to the worker's ends. The materials are available for use, but must never be regarded as mere means. The project must be directed towards some worthwhile outcome. In the case of weaving, the outcome must be a thing of beauty, even if it is a simple food basket, used only once.

The Maori idea of a life force is a radical one. All manner of things have *mauri*: not only plants and animals and humans – the obviously living things – but also houses, meetings, harbours, and ancestral canoes. A partial translation of '*mauri*' is 'character'. A weaver has to respect the character of the material being used and must inject new character into the work. Another aspect of this respect consists in making sure that the use to which the materials are put is a worthy one. Using good materials to produce an inferior product is absolutely ruled out.

Mrs Puketapu-Hetet learned to weave from her aunts: 'They were totally Maori in the things they did. They had a deep understanding and a way of caring for natural things. Any 'waste' is returned to the flax plantation, and deposited at the base of the plants from which it was taken to help the plants in their growth. The same is done with a basket

or other woven item that has been worn out with use: 'It is then deemed to have died a natural death and is allowed to go back to where it first began – back to Papa-tuanuku [the earth] to begin a new life cycle'. Thus decay leads to growth, as expressed in the saying '*Ka mate he teetee, ka tupu he teetee*' – As one frond dies, another frond grows.

Respecting the natural environment does not require us to leave it in a state of wilderness, though. Maori traditions give man a degree of dominance over nature. Ranginui Walker reminds us that Tu-mata-uenga alone of the sons of Rangi and Papa withstood the attacks of Tawhiri-matea, god of winds:

As the personification of the fierce and warlike nature of man he won an exalted place in the cosmogony as the god of war. The revenge of Tu-mata-uenga on his brothers for their desertion during Tawhiri-matea's attack justifies man's superordinate position in nature. Tu-mata-uenga debased his brothers by turning them into food for common use.

Thus the victory of Tu over Tane and the other brothers does in a sense give man a superior position. But man is also kin to the rest of nature, in the strict sense of genealogical connection. Remember though that there are kin and kin. You might treat your younger sister with little respect and get away with it, but the forest is seen as Tane himself, a god of awesome power to be treated with the respect due to an ancestor of the highest rank. The key concept here as so often in Maori thought is that of balance.

And there are other reasons why the Maori do not regard themselves as having absolute dominion over the natural environment. First, everything has a *mauri* which must be respected. If the *mauri* of a forest or river is not respected it will not flourish, it will lose its vitality and fruitfulness. The life of the forest or river must not be dominated by that of man. The natural, healthy and proper state is a state of balance. Second, everything has its protecting guardian spirits (*patupaiarehe*). These will allow reasonable use of the plants and animals and minerals, provided the correct rituals are performed. Being under the protection of supernatural beings, the natural environment is *tapu* or restricted. Use is sanctioned, as long as permission is sought, through ritual, from the guardians who have mana over the environment, and provided that the use is reasonable, respectful.

Weaving is a practical craft, and the products feature in daily activities. But the weaver sees her craft as more than just a necessary practical activity:

Weaving is more than just a product of manual skills. From the simple *rourou* food basket to the prestigious *kahu kiwi* [kiwi-feather cloak], weaving is endowed with the very essence of the spiritual values of Maori people.

Part of this is the connection with the past, found in the traditional weaving patterns that are handed down from generation to generation within a tribe, and regarded as tribal property, as *tapu* or protected knowledge. And many of the patterns themselves represent Maori spiritual values.

The spiritual aspect of weaving is summed up in the remark that art is sacred and interrelated with the concepts of *mauri*, *mana* and *tapu*). Like anything else, weaving and weavers have *mauri*, which must be protected and treated with respect. Otherwise the activity loses its vigour and dies. Weaving is a traditional activity, passed down from the ancestors. That is why it has *mana* and *tapu*; that is why it demands respect.⁶

The extracts quoted thus far in this chapter give an indication of the nature of Maori understandings and the general approach which is likely to be presented in the oral evidence of kuia and of kaumatua in hearings of this claim. I turn now to the question of customary uses of flora and fauna, including specific examples of known traditional practices, and some evidence relating to each of the species named in the Wai 262 claim.

6.3 Sources of Information

In addition to oral evidence from claimants and others who will support this claim, there is a substantial body of knowledge recorded by Pakeha on the basis of information (of varying reliability) gleaned from Maori informants (often un-named) in the early years of colonisation. Often this information is presented in writings imbued with the Eurocentric and racist assumptions which were a seldom-questioned feature of much academic and popular writing about Maori by Pakeha. Thus Dr R Firth's influential thesis and text on economic anthropology originally was enti-

6. J Patterson, 'Maori Work Ethics and the Environment', Whakahokia te Mauri conference paper, Massey University, 1 June 1990, pp 1-4

tled 'Primitive Economics of the New Zealand Maori', his chapter on tapu, rahui, mauri and hau are described as 'Magic in economics', and he discusses the general function of 'magic' in the control of nature, protection, production, art, etc including the use of 'spells' – as he describes karakia.⁷ Then there are the well-known and oft-cited writings of Elsdon Best, a long time staff member of the Dominion Museum. For Best 'the brown-skinned folk with whom I have foregathered for nearly five decades'⁸ were 'a barbaric race', a 'neolithic people' with 'quaint' ideas though with an 'amazing genius for personification'.⁹ And yet his writings contain much information which confirm the detailed and intimate relationship of Maori peoples with all aspects of the world about them, and Maori terminology and traditional practices relevant to agriculture and forest lore.¹⁰

In previous chapters I have drawn attention to Maori as an 'ecosystem people' in their traditional practices. Although the Wai 262 claim is species specific, the claimant Dell Wihongi along with a number of other 'Maori environmentalists' – including M Te Whiti Love of Te Atiawa, now Director of the Waitangi Tribunal – all agreed in 1993 with the need to focus conservation strategies on the management of ecosystems rather than the management of species.¹¹ However, given the manner in which the research commission is set out it seems appropriate in this chapter to give some emphasis to available evidence relating to the actual species mentioned in the claim.

In addition to the older published sources of information there have been some recent publications which contain detailed compilations of information on Maori traditional uses of economic native plants¹² and on rongoa Maori and Maori healing practices of the past and present.¹³ It may well be that the kaitiaki of matauranga Maori are not at all pleased to see these published compilations of information – especially of the medicinal properties of plants – which are now broadcast to the world and available for pharmaceutical scientists to scrutinise without any necessity of even consulting with tangata whenua before engaging in research and development of patentable medicines. However, as the information is now published and pharmaceutical companies and others already have access to it, the Tribunal needs to be aware of the published material. Certainly there are important issues which will arise in the future if intellectual property laws are relied upon by non-Maori in this country or

7. R Firth, *Economics of the New Zealand Maori*, Wellington, 1959, ch VII

8. E Best, *The Maori As He Was*, Wellington, 1952, p xv

9. See, for example, E Best, *Spiritual and Mental Concepts of the Maori*, Wellington, 1954; E Best, *The Maori School of Learning*, Wellington, 1986

10. E Best, *Forest Lore of the Maori*, Wellington, 1977; E Best, *Maori Agriculture*, Wellington, 1976

11. Te A C Royal, *A Report Based Upon Interviews With Maori Environmentalists For The Project Entitled 'Ecosystems In Crisis'*, Department of Conservation, 1993

12. R C Cooper and R C Cambie, *New Zealand's Economic Native Plants*, Auckland, 1991

13. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, 1994

overseas to claim property rights over products, designs, etc. which derive from matauranga Maori. This is a matter the Tribunal may expect to receive submissions on.

6.4 Traditional Usages

6.4.1 Kumara

There is an abundance of evidence of the huge importance of kumara to iwi and hapu of Aotearoa. Despite its tropical origins, Maori learnt how to tend to its cultivation and storage as far south as Banks Peninsula. One indication of the importance of kumara is the fact that there are so many iwi and hapu variations and alternative versions of the mythological origins of this precious taonga. One version is set out in the Wai 262 Statement of Claim:

The kumara was treasured by Maori as an integral part of Te Wao Nui a Tane.

The kumara was introduced by Maori to Aotearoa (New Zealand) from tropical Polynesia.

Kumara were carried by Kupe, who is traditionally recognised as the earliest explorer of Aotearoa. Kupe sailed from Rangiataea in his canoe Matahaorua. He visited his wife's people at Motutapu in the Cook Islands and then sailed on to Aotearoa. The people of Hokianga relate how Kupe explored Te Ika A Maui (North Island) and Raukawa (Cook Strait) and then settled for a time at Hokianga. He planted the first kumara garden at Whiria, north of Opononi.

Later Kupe left Hokianga (Hokianga-atu-a-Kupe, the leaving place of Kupe) to return to Hawaiki. The kumara, however, remained behind and has been cultivated in the region around Hokianga ever since.

The claim recognises of course that:

The Kupe tradition is but one of many telling of introductions of kumara by Maori migrating to Aotearoa from different parts of Polynesia.

Dr M Orbell gives a succinct description of a number of other versions:

Nearly every tribe claimed that their ancestors had brought the kumara first. Often a woman named Whakaotirangi was held responsible for its introduction: when other people had eaten their seed kumara on the way, she had prudently kept hers tied in a corner of her kete. Many tribal areas claimed Whakaotirangi as an ancestor, and altogether she was said to have come in five different canoes. According to Tainui tradition she was the principal wife of the captain, Hoturoa. During the journey the captain's second wife, Marama, disgraced herself by having an affair with a slave, and because of this her plants went wrong: her seed kumara grew up as bindweed, her gourd seeds came up as a weed known as mawhai, or the bur cucumber, and her paper mulberry tree turned into the whau, which resembles the paper mulberry but has bark that is useless for cloth. The seeds brought by Whakaotirangi, however, flourished in Aotearoa.

Some of the ancestors acquired the kumara by making their way to Hawaiki from this country, then returning with their prize. Pourangahua, for example, sailed there in a canoe of bark and albatross skins, then flew back on a great bird owned by Tane. The Horouta canoe, also on the East Coast, made a voyage which was re-enacted each spring during the elaborate rituals that accompanied the planting of the seed kumara. According to this story the Horouta set out from Aotearoa, reached Hawaiki and sailed alongside the cliffs of that land, which are composed entirely of kumara; a tohunga on board the vessel recited a karakia, the kumara tumbled down into the canoe, and then they returned. The hidden meaning of this myth becomes apparent when one learns that in the kumara storehouse the heaped-up baskets of seed kumara were sometimes called 'the cliffs of Hawaiki', and that each year in the planting season a tohunga re-enacted this story by making his way ceremonially to the storehouse to acquire the kumara from the cliffs of Hawaiki, just as the crew of the Horouta did in the beginning.¹⁴

One text of the Horouta story, and the tikanga appropriate to kumara, has been published recently in te reo Maori as told by Pita Kapiti and written by Mohi Turei.¹⁵ In a quite different tradition again, originally written by Wiremu Hoeta at Kawhia in 1864, the foods taro and kumara were brought up from Te Reinga in the underworld.¹⁶

14. M Orbell, *The Natural World of the Maori* (revised ed), Albany, 1996, pp 63–64

15. W and Te O Kaa, *Mohi Turei: Ana Tuhinga I Roto I te Reo Maori*, Wellington, 1996, pp 111–124

16. M Orbell, *Traditional Maori Stories*, 1992, pp 72–82

Best, of course, has a huge amount of information on the kumara and its cultivation including its whakapapa, proverbial sayings, an identification of some 82 names in Maori for varieties of kumara, archaeological and other evidence concerning cultivation patterns, ritual chants for planting, then for digging operations, karakia recited by tohunga, and much other information.¹⁷ H Leach's archaeological work has dated kumara gardens to very early periods of Maori occupation in Aotearoa – the so-called 'archaic' period in the centuries before the 'classic' period.¹⁸ Amongst the information in Riley on kumara are these two paragraphs:

Maori mythology gives a different view on the origin of the kumara from those espoused by the plant geneticists. It is said that the germs of the kumara were stolen by Rongomaui from the star Vega (Whanui) and brought to Earth. This act was the beginning of theft in this world. Rongomaui caused his wife Pani to give birth to many varieties of the sweet potato, the kumara children. Bearing in mind this legend, the Maori planted kumara when certain stars rose in the sky and the moon was at a certain phase. Kumara cultivations were believed to be under the protection of Pani, and known as 'the belly of Pani'. Her full name is Pani-tinaku, 'Pani the germinator'. She is usually described as a member of the tribe of Rongo-ma-Tane, provider of all cultivated foods, a tribe which was almost annihilated following a fierce war between two sons of Rangi and Papa (Sky Father and Earth Mother). Pani and Rongo must be treated with respect. As the ancient proverb says: 'Rongo tapu hanga hanga' (Rongo makes sacred at will) – the kumara is tapu when growing in the field and when being taken from the soil. Noa, or free from tapu, when being taken to the storehouse, but tapu while stored there; noa again when being cooked. Many were the rituals of old relating to the planting, the tending and the cooking of different varieties of 'kumara Maori', as distinct from the 'waina' and other sweet potato strains introduced last century to Aotearoa. Waina, a trans-literation of the English word 'vine', refers to the method of propagation, by vine cuttings, rather than by traditional root plantings.

In Maori lore the interests of members of the tribe of Rongo-ma-Tane, ie kumara, representing peace, were considered incompatible with those of Ariki-noa-noa, ie rahurahu or fernroot, one of the children of Tumatauenga, representing war. The ill feeling between the two parties will never end. Hence kumara tubers may never [be] stored with

17. E Best, *Maori Agriculture*, Wellington, 1976, pt 4

18. H Leach, *1,000 Years of Gardening in New Zealand*, Wellington, 1984, ch 3 and 4

fernroot rhizomes, nor may either be prepared for food in the same way, nor kumara cooked with common food. It is perhaps appropriate that since war is no longer the scourge of our land it once was, and that fernroot has been found to be carcinogenic, or encouraging of cancer, it is no longer an article of daily diet. In the old days a grower of kumara was regarded as a man of peaceful intent. The fernroot, which grew in the wild, represented spontaneity not cultivation like the kumara. It could be dug at any time, and was eaten by the men of war on the march. There are many tales of warriors eating a great meal of fernroot in an enemy's territory just prior to battle to ensure success in the coming forays. On the other hand, both warriors and other travellers took along smoked or sun-dried kumara, kao, as a convenience food. A cooked kumara was carried in the hand by travellers out at night as magical protection to prevent evil spirits from wreaking their mischief. These spirits were supposed to dislike coming into contact with cooked food, you had only to offer it to them and they would disappear. The village tohunga or expert of a village used the kumara as a medium to deter an enemy war party. He would recite a karakia, or incantation, then bury kumara under the common path along which the party was expected to pass. If the war party trod on this ground they were said to feel a burning sensation rising from their feet and through their limbs. This was taken as an ill omen, an intimation that the atua concerned did not approve of their venture, and that they should return to their home territory. A more direct approach was sometimes possible. If the points or edges of the weapons carried by members of a war party could be smeared with cooked food, the warriors would lose their mana and be defeated. The appropriate Maori proverb being: 'Kia tupato kei tamaoka te mata o te tao i te kai maoa' 'Beware of contaminating the point of the spear with cooked food.'¹⁹

A substantial selection of articles relating to myths about the kumara and archaeological evidence concerning various types of kumara storage pits are to be found in the *Journal of the Polynesian Society*. Obviously the kumara's importance to Maori is reflected in the substantial amount of academic work published in *JPS* over many years.

The great significance of the kumara in its many varieties, including the remnants of pre-contact varieties, is very close to the heart of the claimant Dell Wihongi. Her efforts to return kumara varieties from Japan

19. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, 1994, pp 249–250

to Aotearoa involved her in some controversy with the Prime Minister, Mr Lange, in 1988.²⁰ She will tell her own story to the Tribunal when hearings commence.

6.4.2 Pohutukawa

The Statement of Claim includes these statements:

The Pohutukawa was treasured by all Maori as an integral part of Te Wao Nui a Tane.

Its place and importance to Maori is retold in history as recorded by (among others) Tainui and Te Arawa.

The Pohutukawa was known by all Iwi as a harbinger of seasonal change, but its wood also had practical uses – in carving, as fernroot beaters, mauls, paddles, patu tuna, ko and spinning tops.

Its inner bark and nectar were also used medicinally.

Some further information on the importance of pohutukawa is recounted by Orbell. One story concerns an ancient tree at Kawhia:

There were trees that had rituals performed before them, such as an ancient pohutukawa at Kawhia which was employed in ceremonies relating to warfare, and had under its arching roots a shallow cave where the tohunga used to sit. And sometimes a tree or rock was thought to be inhabited by a spirit, and people passing by would pluck a twig or fern frond as an offering. Strangers were especially careful to do this, but usually everyone did so, as there would otherwise be rain. As they threw their twig before the tree, they humbly addressed the spirit of the place:

Ka u ki Mata-nuku, ka u ki Mata-rangi,

Ka ki tenei whenua, hei whenua.

He kai mau te ate o te tauhou.

I come to Point-of-earth, I come to Point-of-sky,

I come to this land for it to be my land.

The stranger's heart is food for you.²¹

Riley also cites from a source concerning another pohutukawa at Kawhia – known to be a mooring tree of the Tainui canoe.²²

Another curious custom in connection with Tangi-te-Korowhiti (an ancient pohutukawa tree of Kawhia) was a practice which persisted for generations and probably for centuries. After the birth of any child of note the placenta was suspended in the branches of the tree. This pre-

20. C Painter and J Egan, *The Kumara Story*, Centre for International Development Education and Action, Wellington, 1991

21. M Orbell, *The Natural World of the Maori* (revised ed), Albany, 1996, p 93

22. P Simpson, *Pohutukawa and Biodiversity*, Project Crimson Trust, Science and Research Division, Department of Conservation, 1994

caution was considered necessary alike in the interests of the health of the new-born babe and also to bring about the speedy recovery of the mother. So implicit was the confidence placed by Maoris in the strict observance of this custom that it continued until quite recent years and there are many alive today who attribute their health and well-being to their parents' conformity with this ceremony. (Schnackenburg)²³

Unsurprisingly, pohutukawa overhanging the sea at Te Reinga have attracted particular attention:

On a hill near Te Reinga the souls paused to gaze back and weep,
sending a last farewell to their kinsmen and the world:

E tae ki Te Rerenga, tahuri mai ki muri, mihi mai i kona

Te riu ki te whenua, e. Tenei, e te hoa,

A taua kura i waiho i muri i to tua.

Ma wai hoki ra e pupuri ringa rua?

E here ana mai te taura o te po hai kukume ki raro ra e.

When you come to the Leaping Place, turn back and greet

The vale of the land. Friend, these are our treasures

Which you are leaving behind your back.

Who can hold them forever in his hands?

The rope of night binds us, and will drag us below.

They left all their tears on this hill. Then they passed along the steep narrow ridge, and down to the pohutukawa tree that clung to the cliff above Te Reinga. Perched upon its branches they looked down into the watery cave below, waiting until the waves washed aside the long seaweed growing about its entrance. Then they made their descent:

Tirohia iho ra te timunga o te tai:

Ka mawhe nga rimu, ka tuku ai i a koe

Ki te rua e mutu ai to kite mai i te iwi,

I te toka tu iho i runga i Tirau,

I te wai kaukau i Taupo raia,

He tiherunga hoe na Tuwharetoa.

Look down, and wait for the tide to ebb.

When the seaweed subsides, it will take you down

To the abyss where you will no more see your people,

The rocky peak high up on Tirau

And the waters of Taupo where the people bathe

And Ngati Tuwharetoa bail their canoes.²⁴

23. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, 1994, p 355

24. M Orbell, *The Natural World of the Maori* (revised ed), Albany, 1996, pp 44–45

A short summary of the mention of pohutukawa in the Te Arawa story is this:

When its crew were approaching the shore after their voyage from Hawaiki, they saw ahead of them groves of pohutukawa in full bloom. The immigrants mistook these scarlet masses for red feathers, and thought in their excitement that in this new land such wonderful things were obtainable everywhere. No longer would they need the red plumes that they possessed – so taking them from their hair and ears, they cast them into the sea. Too late they discovered it was flowers they had seen. The real treasures had floated away.²⁵

Myths of course have meaning at a variety of levels of understanding and it may be that a response to this story would be that the adornments of the pohutukawa in flower can be seen as representing the process of identifying with a new home as the old home is left behind. On the other hand, the red flowers of this tree, like those of the rata, are also associated with the blood of Tawhaki when that mythical hero fell to his death from the sky.²⁶

The use by Maori of the inner bark and nectar for a number of medicinal purposes mentioned in the statement of Claim is confirmed by several authors and published sources cited by Riley.²⁷

Pohutukawa is now the focus of a significant programme known as 'Project Crimson' which seeks to apply the holistic concept of biodiversity to understand and to manage pohutukawa as a coastal forest ecosystem. It is evident that Maori traditional associations with pohutukawa are recognised by those working for Project Crimson in the paper on 'Pohutukawa and Biodiversity'. It is not at all clear that the continuing role of iwi and hapu as kaitiaki is recognised. The paper's conclusion seems to show an awareness of the Maori dimension:

The biodiversity approach identifies and brings together the many strands of action required to save a species and its ecosystem. It identifies the processes that underlie daily life, processes that started long ago in the biogeographical 'Hawaiki' that became New Zealand; processes that have been encapsulated by human reverence, yet disrupted by lack of awareness. Biodiversity conservation translates basically into community action to restore the feeling of belonging to the land, restore health in the landscape, its spirit, its mauri, its ecology. Pohutukawa is its ecology, and our management of it, the mauri.²⁸

25. Ibid, p 96

26. P Simpson, *Pohutukawa and Biodiversity*, Project Crimson Trust, Science and Research Division, Department of Conservation, 1994, p 8

27. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, 1994, pp 355–356

28. P Simpson, *Pohutukawa and Biodiversity*, Project Crimson Trust, Science and Research Division, Department of Conservation, 1994, pp 10–11

Yet it appears from an advertisement for Project Crimson in the most recent issue of *New Zealand Geographic* that 'our management' turns out to involve Carter Holt Harvey in partnership with the Department of Conservation, and they work with 'community groups, schools, councils and individuals'.²⁹ As usual, kaitiakitanga is notable for its invisibility.

Certainly when it comes to genetic modification of indigenous flora, it is evident that the requirements of intellectual property laws do not involve any partnership arrangements or even consultation, let alone a recognition of tino rangatiratanga rights. All that is required is the technical requirements of being a cultivar or cultivated variety of a plant (and not a botanical variety of such a plant) and the property rights under the Plant Varieties Act 1987 may be obtained. The Statement of Claim makes reference to a variety of pohutukawa (Var. 195 'Carousel') which has recently been granted intellectual property protection under that Act.

The Statement of Claim refers to the introduction of the opossum and its subsequent protection under the Animals Protection Act 1880. I have already pointed out that the special status accorded to the opossum in the Animals Protection Act 1907. With respect to the 1880 act it is relevant to note the section which enabled the Governor to extend the operations of the Act in terms of protecting animals and birds – including extending protection to the opossum – also stated that the Governor had no power to deem any indigenous animals or birds as game (s 19). Thus 'native game' was narrowly restricted to the few species listed in the Fourth Schedule of the 1880 Act whilst the opossum was beginning its tragic devastation of pohutukawa and many other species in the indigenous flora. Project Crimson also identifies the opossum as a particular threat to pohutukawa.³⁰

6.4.3 Koromiko (and tohunga suppression laws)

The Statement of Claim states:

The Koromiko was treasured by Maori as an integral part of te Wao nui a Tane.

Even more than the Pohutukawa, the Koromiko was highly prized for its rongoa or medicinal qualities.

Its anti-peristaltic action made it valuable as a remedy for diarrhoea and other ailments.

29. 'We Should All Be Seeing Red', *New Zealand Geographic*, no 32, Oct–Dec 1996, p 85

30. P Simpson, *Pohutukawa and Biodiversity*, Project Crimson Trust, Science and Research Division, Department of Conservation, 1994, pp 9–10

As such, and as a gift of Papatuanuku, Koromiko came under the protective temporal authority of te tino rangatiratanga o te Iwi Maori.

In whakapapa terms koromiko is identified with Tuna-rangi, son of Haumia tiketike. One of the important aspects of koromiko as taonga was the traditional use of the shrub in many ceremonies and rituals along with green twigs and small branches of other trees or shrubs such as mapou, rangiora, karamu and kawakawa. In addition, because koromiko sometimes grew alongside houses, Orbell cites a traditional proverb to describe a person who was a 'stay at home' – a koromiko standing by the wall of the house.

The most valuable aspect of koromiko, however, was in rongoa Maori as a remedy for a variety of ailments. The medicinal uses recorded by Riley cover several pages.³¹ Cooper and Cambie note the plant's international significance, including its role in the Maori war effort in the last world war:

One of the most important of the 'bush cures' is the use of *Hebe* species, particularly koromiko (*Hebe salicifolia*, *H. stricta*, and allied species), which is a well-known and authenticated remedy for dysentery. Koromiko is the only native plant to have received recognition in British medicine, being listed as a remedy for diarrhoea in the 1895 Extra Pharmacopoeia, London. It is still valued as a remedy for dysentery and diarrhoea and, during World War II, quantities of the dried plant were sent to the North African front, where it was used effectively by Maori troops. The value of the plant has been traced to its anti-peristaltic action. The active principle was originally suggested to be the tannins which are present in the plant, but more recent work by Martin-Smith has indicated that it is a phenolic glycoside. Even so, it is somewhat surprising that so little work has been carried out on this plant.

There has been a debate as to when tohunga first made use of rongoa Maori as internal medicine. Rolleston reports that modern tohunga are unanimous and adamant that uses of indigenous flora as rongoa Maori for internal complaints is knowledge that goes all the way back to classic pre-contact iwi and hapu societies. This is one of those matters upon which the accounts by Elsdon Best are fiercely rejected. He asserted that tohunga of old did not use concoctions for internal use but that Maori very enthusiastically engaged in experimentation and use of native plants for such medicines from the earliest period of contact in the 18th century.

31. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, 1994, pp 233–238

Riley points out that Best was very selective in his quotation from the source he relied upon. In any case Riley's book is testimony to the immense variety of plants used by Maori as rongoa in the period since the written accounts of early explorers, traders and missionaries – many years prior to 1840. Even if Best's view were right, there can be no doubting the fact that the intimate knowledge about indigenous flora learned by Maori over many centuries living here was the basis of the use of plants as rongoa as used at least for 200 years.

Whilst little scientific research work has been carried out in relation to medicinal values, the koromiko has travelled far from the shores of Aotearoa and been the subject of plant experimentation and hybridisation for garden purposes since about 1840:

From about 1840 to 1884, Isaac Anderson, later known as Anderson-Henry, an Edinburgh lawyer and amateur gardener, conducted pioneer experiments in grafting and hybridization. His aim apparently was to unravel the laws of genetics, and he corresponded with Charles Darwin. He succeeded in crossing two New Zealand species of *Hebe* with each other, and with another species from the Falklands. The New Zealand species were then known as *Veronica speciosa* and *V. salicifolia*. The Falkland Islands plant was known as *Veronica decussa*, now *Hebe elliptica*. He obtained several fine hybrids such as *Veronica 'Purple Queen'*, *V. lobelioides*, and *Hebe x andersonii*. By the 1890s there were about forty New Zealand species of *Hebe* at the Royal Botanic Gardens, Edinburgh, as well as many hybrid forms.

A recent British *Hebe* grower is Mr Graham Hutchins of the County Park Nursery at Hornchurch, Essex. He exhibited 120 species, varieties and hybrids of *Hebe* and *Parahebe* at the Royal Horticultural Society's Show at Westminster in 1976, and he was awarded the Lindley Silver-Gilt Medal. In 1979, he published a sixty page booklet, discussing topics such as the propagation, pruning, pests, and hardiness of each kind of *Hebe* in his collection. He recommended them for rock gardens, sink gardens, cavity walls, window boxes and tubs, and noted that, when they are planted 30–60cm apart, they will completely smother all but the most vigorous of weeds. He recorded their medicinal virtues and added that they are much preferred by donkeys to oats.

In February 1985, a Hebe Society was formed in Great Britain; its aims are to contact members and issue newsletters, to promote wider interest in the use of Hebes and allied plants, to improve and increase

the plants available, and to control naming and assist identification. The Society is forming a National Reference Collection at Trewidden, Cornwall, with the aid of Lawrie Metcalf of Invercargill who has prepared a checklist of cultivars. At the beginning of 1987, the Society had 150 members in Great Britain, Ireland, USA, New Zealand etc.; it is the first British or international society devoted to a group of New Zealand plants.

More recently koromiko has been included in DSIR research studies and it appears that it has very significant potential in export markets:

In 1989, Linda N. Kristensen, a Danish scientist from the Institute of Glasshouse Crops at Aarsley, collaborated with Dr Julie Plimmer of the Department of Horticultural Science, Massey University, and Dr Ian Warrington of Plant Physiology Division, DSIR, Palmerston North, in growth-chamber experiments on some fifty species, 200 clones and 150 cultivars of *Hebe*. In Denmark, annual sales of a New Zealand cultivar known as *Hebe x franciscana* total about 1,500,000 pots, worth about NZ \$15,000,000. Linda Kristensen is looking for other Hebes suitable for the Danish market. Preliminary results from the growth-chamber experiments indicate that, before they will flower, high-altitude *Hebe* species need far more exposure to cold than low-altitude species.

In 1989, Dr Warwick Harris, then Director of Botany Division, suggested in an article in *Commercial Horticulture* that New Zealand nurserymen should have an advantage as this country is the centre of the *Hebe* genetic resource. Efforts should be made to locate and protect remaining *Hebe* populations in the wild. Communication and cooperation between growers and scientists should be the aim. He urged growers to use the names *Hebe* and *Veronica* correctly, to ignore pressure to market plants as Veronicas, and to try the Maori name 'koromiko' for promoting sales.³²

The research work of DSIR and even the suggestion of using the Maori name koromiko 'for promoting sales' is an obvious instance of research and development based originally on indigenous flora and matauranga Maori, and being furthered by appropriation of the name of a taonga without apparently any concern for the rangatiratanga of iwi and hapu. Indeed the excellent work of Cooper and Cambie in gathering information on 'economic native plants' provides striking evidence relevant to the

32. R C Cooper and R C Cambie, *New Zealand's Economic Native Plants*, Auckland, 1991, pp 118, 33 and 56

hearing of this claim. As all species discussed in the book are by definition of actual or potential economic value the question of Maori Treaty rights is again remarkable by its invisibility. Every chapter on the utilisation of flora, timber uses, fibres and paper, grasses, food and beverages, potions and poisons, chemical products, fragrances and flavours, etc contains information on traditional Maori usages in all these various aspects. Having described traditional Maori usages there are then discussions of scientific studies, description of DSIR and University-based experiments, international collaborative work, and proposals for market research. All of this is firmly based on the implicit assumption that economic use of plants is the common domain of humankind and may be appropriated by anyone anywhere in the world. That information derived from observations of Maori traditional uses – developed over centuries of information gathering by Maori living in this land – may be used and marketed by others is not even an agenda item for discussion.

It is in relation to koromiko that the Statement of Claim raises the issue of the important role of tohunga in Maori life, including the role of those who were tohunga with expertise in rongoa Maori and suffered denigration and criminalisation as a result of the Tohunga Suppression Act 1908. The first explicit policy relating to tohunga on the statute book was a provision in the Maori Councils Act 1900 section 16, empowering councils to make by-laws respecting health, cleansing of houses, common nuisances, drunkenness, meeting houses, dogs, eel-weirs, burial grounds, etc and including this power:

(5) For regulating the proceedings of tohungas, and the punishment by fine of those (whether European or Maori) who practise upon the superstition or credulity of any Maori in connection with the treatment of any disease.

The underlying assumption of the Maori Councils legislation was that 'self-governing' councils would act against Maori habits and traditions that were seen by the Government to be undesirable. The ideal was to prompt Maori leadership to promote the adoption of Pakeha ways, or, to quote the words of the 1900 Act's preamble,

whereas it would conduce to the higher civilisation and contentment of the Maoris themselves if they were authorised and encouraged in such laudable desires.

Shortly afterwards, however, Crown policy moved from indirect regulation to direct suppression with the enactment of the Tohunga Suppression Act 1907.

The preamble referred to 'designing persons, commonly known as tohungas, [who] practise on the superstition and credulity of the Maori people by pretending to possess supernatural powers in the treatment and cure of disease, the foretelling of future events, and otherwise, and thereby induce the Maoris to neglect their proper occupations and gather into meetings where their substance is consumed and their minds are unsettled, to the injury of themselves and to the evil example of the Maori people generally.'

The debates in Parliament concerning the suppression of tohunga exhibit evolutionary theories of race and claim that tohunga are impeding Maori advance to a state of civilisation, in other words Europeanisation. Although mention is made of tohunga in the sense of doctors applying traditional cures, the Act was also designed to counter the influence of Rua Kenana and other prophets. There were no members who spoke in open opposition to the Bill, although Heke said that it should also be made to apply to Pakeha tohunga (i.e. doctors, preachers, and sly-groggers!)³³

These debates show absolutely no understanding, and, of course, no desire by Parliamentarians to understand the diverse important roles of tohunga in Maori society. Best was concerned to portray tohunga in a more accurate light:

The term *tohunga*, as understood by the average European resident, denotes a shamanistic humbug; but the word simply means an expert or adept, and not necessarily in sacerdotal matters. Thus a *tohunga matatuhi* is a seer, but a *tohunga whaihanga* is a carpenter or canoe-maker, and a *tohunga ta moko* a tattooing-artist. The higher class of priests were *tohunga ahurewa* and *tohunga tuahu*. Other terms were *tohunga puri* and *tohunga kiato*; while *tohunga makutu* and *ruanuku* denoted a wizard – dealer in black magic. The title of *pouwhiro* was applied in some parts to a high-class priest, and that of *horomata* to one of the third grade. Those engaged in learning the higher type of oral traditions, and in acquiring sacerdotal lore, were known as *pia*, *taura*, and *tauirā* at different stages of their progress. These *tohunga* of the highest class did not indulge in shamanistic jugglery or black magic.

33. NZPD, 1907, vol 139, pp 510–525; NZPD, 1907, vol 140, pp 372–384

Thaumaturgic performances were the province of the *tohunga kehua* (a charlatan, an empiric and impostor).

The upper orders of *tohunga* were the conservers of all superior versions of tribal lore, and transmitted such knowledge orally down succeeding generations. Youths of superior intelligence and memorizing-power were selected to be trained as *tohunga*. The teaching of matters pertaining to religion, cosmogony, the origin of man, & c., was an extremely *tapu* business, and such men as these *tohunga* remained *tapu* for life.³⁴

These remarks were first published in 1924 but the law's blanket denigration of *tohunga* and its explicit attempt to undermine the *tino rangatiratanga* in favour of Europeanisation remained in force until repealed by the Maori Welfare Act 1962, section 44. A review of the literature and thinking relating to suppression of *tohunga* has been written up in a MA thesis,³⁵ but little has been done to honour the important role of *tohunga* and their *matauranga* Maori, especially with respect to *rongoa* Maori. A research report by S. Rolleston for the Department of Health in 1988–89 is a rare exception. His report included these comments:

9.1.5 Continuation of Tohungaism

It was not until 1963 that the Act was repealed. However, from comments heard and discussions held during the course of the project, it is clear that a form of *tohungaism* has operated continuously throughout the intervening period, albeit in an underground manner. In many of the more isolated pockets of Maori settlement especially, *tohunga* have always received training and practised their skills. Maori communities have been aware of how to contact *tohunga* and utilise their knowledge despite the attitudes of officialdom.

These are only some of the points that background the *tohunga* and the work that is done today.

9.2.0 The Tohunga Today

In the course of this project contact was made with a number of *tohunga* in healing and the prevention of illness. Some of them were interviewed and observed in their work. Some of those observations and the results of those discussions are recorded, and gives some idea of the work done by the modern *tohunga* and some of the difficulties and problems that they face.

34. E Best, *The Maori as He Was*, Wellington 1952, pp 79–80

35. R T Lange, 'The Revival of a Dying Race: A Study of Maori Health Reform, 1900–1918, and its Nineteenth Century Background', MA thesis, University of Auckland, 1972

9.2.1 *A Tohunga Register: Rejection of the Idea*

(1) One of the ideas discussed in the planning stages of this project was the possibility of locating and identifying tohunga and placing their names on a national register. It was hoped that with this register it would be possible to form links with western health practitioners and to better inform the public as to where tohunga can be contacted. The idea was first explored with kaumatua and with tohunga and then abandoned for a number of reasons.

Some tohunga were happy to be identified but of those spoken to during the research for this project most rejected the idea outright. There were a variety of reasons for the rejection.

(2) *Becoming Known*

Most tohunga are already well-known amongst their own tribal groups and some enjoy a nationwide reputation. For Maori people, it is not too difficult to learn who the tohunga are and how to make contact if their services are required. Most tohunga are happy to use this informal oral method of becoming known. Self-promotion, as a register would imply, was not considered appropriate and there was discomfort with the idea of dealing with an unknown clientele.

(3) *Place of Koha*

No tohunga contacted would consider charging a fee for their services, although people who visited them were always conversant with the principle of koha (reciprocity by way of gift). Commodification of their skill was seen as similar to self-promotion, demeaning and to do so was to risk losing that skill altogether.

(4) *Knowledge from a Particular Locality*

In many cases the tohunga has received training in a particular geographical location using herbs and methods peculiar to just that area. A register that was circulated throughout the country would be pointless for those tohunga who acknowledged that there are many cures for the one ailment, and different knowledge would be needed in different environments. Often, tohunga have a number of fields of expertise, and these have been learned tribally and regionally too and again that expertise could be inappropriate in other areas. Some kinds of knowledge such as whakapapa (genealogy) and history are often of special significance to a tribe and is retained strictly within the group.

(5) Other Experts

Some people are viewed by others as 'tohunga' but do not view themselves as such. Their skills have been acquired in an informal manner and they do not wish to be identified along with tohunga that they see as being very special. However much others may consider that they are tohunga they do not wish to be part of a register.

9.2.2 *Negative Attitudes Towards Tohunga*

The cause for most reluctance to be named in a register lies in the awareness that negative attitudes toward tohunga and their work remain and these attitudes are a long way from being dispelled in the minds of the bulk of society. Tohunga are still sometimes referred to in a denigratory manner, as 'witch doctors' and their work is described as 'black magic'. Tohunga are painfully aware of the move exemplified by the 1907 Tohunga Suppression Act, to outlaw tohungaism. Many are aware of the amount of existing literature that is aimed at discrediting their work. Despite the increase in the incidence of tohunga practising in conjunction with western health care programmes, most tohunga prefer to work with a Maori clientele and operate from within a familiar environment.

With the resurgence of interest in traditional forms of knowledge and the widening acceptance that the tohunga has much to offer in modern health care, the time may come when tohunga will feel comfortable with allowing their names to be placed on a register system. However, it appears that there are still attitudinal barriers to overcome before that situation will occur.³⁶

Koromiko is one of the species identified by Rolleston as playing an ongoing role in the medicinal use of plants in a chapter commencing with a proverb directly supportive of the kaupapa of the Wai 262 claim:

'Tino maha nga rongoa wai raka o Te Wao-nui-a-Tane'

There are many herbal remedies in the great realm of Tane.³⁷

D Quin is another who has identified continuing use of koromiko as a medicinal plant. One of the uses she notes is that a 'decoction of the bark with the hot aromatic leaves of the horopito, *Drimys axlaris* was once known as 'Maori painkiller'.³⁸

36. S Rolleston, *He Kohikohinga: A Maori Health Knowledge Base*, Wellington, undated, pp 21–22

37. *Ibid*, p 26

38. S G Brooker, R C Cambie and R C Cooper, *Economic Native Plants of New Zealand*, Christchurch, Botany Division, DSIR, 1988, p 18

6.4.4 Puawananga

The Statement of Claim notes:

Puawananga, like Koromiko, has been the subject of extensive commercial and scientific exploitation.

A collaborative project has existed since 1986 between the Department of Scientific and Industrial Research (Botany Division) and the National Institute of Agricultural Research in France.

As part of this project Puawananga has been the focus of genetic studies aimed at introducing the shrub form genes of the native *clematis recta* and/or *clematis marmoraria* into standard climbing *clematis*. The objective is to produce a more 'showy' or commercially attractive cultivar.

The project began, and continues today, with no Maori sanction or input. Indeed the only consultation is with the French equivalent of the New Zealand Nurserymen's Association, underlining the commercial thrust of the project.

As well as Puawanganga, Pohutukawa, and Koromiko at least 23 species of native genera are subject to experimentation in France: all taken without the consent, sanction or involvement of Maori.

This ongoing process not only removes from Maori (and New Zealand) whole plants, but also access to those of their genes which control commercially desirable characteristics. The profits from this process are shared by the French laboratory (through royalties), commercial nursery interests in France and ultimately world-wide (through subsequent propagation and sales) and DSIR. Nothing accrues to Maori.

Riley's comment on puawananga reads as follows:

While the flowers of many New Zealand plants are inconspicuous, those of the largest and loveliest of the *clematis*, the white flowered puawananga, provide an exception. It was known to the Maori as the child of two stars of the heavens : Rehua, the father, whose appearance was the sign of summer coming, and Puanga, the mother, a star whose twinkling foretold the kind of season in prospect. She was the food bringer: if her rays twinkled towards the north, a plentiful year was in prospect; if towards the south, a lean year for products of the forest, field and sea would follow. When puawananga's star-shaped flowers

were seen festooning the treetops, the people took it as a sign that some activity or other should be undertaken.³⁹

The beauty of puawananga meant that specimens left Aotearoa as early as 1840 and plant breeders have won awards for their work:

The best of our climbers was introduced into Britain as *Clematis indivisa* about 1840, and the variety 'Lobata', now known as *C. paniculata* 'Lobata', has been a collector's item ever since. Outdoors in Britain it is destroyed in cold winters, and it must be grown under glass. A cultivar of it, named 'Stead's Variety', won a First Class Certificate when shown at the Royal Horticultural Society by Lord Aberconway on 1 May 1934.⁴⁰

Whilst Lord Aberconway may have been pleased with his effort in 1934, the Wai 262 claimants still await recognition of their rights. Further research on the role of puawananga is required.

6.4.5 Indigenous forests

The next item in the Statement of Claim is the compendious heading 'indigenous forests'. The claim reads:

The indigenous forest was, and is treasured by all Maori as an integral part of Nga Taonga o Papatuanuku.

All Iwi maintain traditions of its creation, and its continued well-being was seen as part of the need to nurture Papatuanuku.

It was protected by atua as a source of spiritual sustenance, and as a physical resource it fell within the kaitiakitanga of Iwi as exercised within the authority of te tino rangatiratanga o te Iwi Maori.

Earlier chapters of this report have given an indication of the close mythological and practical interconnectedness of iwi and hapu and the realms of Tane. An immense amount of information is contained in Elsdon Best's *Forest Lore of the Maori*. He speaks of the manner in which forests were prized, the limited role of fire to burn off a tawaha aruhe, the variety of terms for forest, the mauri of forests, appropriate karakia, and so on. A lengthy list covering nine pages of printed text lists Maori terms employed to denote forests, trees and parts of trees.⁴¹ Again the intimate and detailed knowledge of Maori about the natural environment is

39. M Riley, *Maori Healing and Herbal: New Zealand Ethnobotanical Sourcebook*, Paraparaumu, p 369

40. R C Cooper and R C Cambie, *New Zealand's Economic Native Plants*, Auckland, 1991, p 30

41. E Best, *Forest Lore of the Maori*, Wellington, 1977, pp 15–23 (more generally, the entire section pp 1–111)

clearly apparent in the names not only of trees but fungi, edible herbs, bark and its uses, oils and gums, berries and the great variety of food supplies obtained from the forest in former times.

Of course not everything written by Best can be relied upon, but there can be no doubt about the general thrust of his information. Modern scholars have more techniques available to test the information people like Best and Colenso gathered. On the topic of Maori use of timbers some fascinating research has been done recently which is described by Cooper and Cambie:

In the previous version of this book readers were referred to the writings of authors such as Colenso and Best for information regarding traditional Maori use of wood.⁴² From these sources it seemed that the Maori preferred totara (*Podocarpus totara*) for large carvings, canoes, and the framing of their hoes, although north of Thames they used kauri (*Agathis australis*). Matai (*Prumnopitys taxifolia*) and pukatea (*Laurelia novae-zelandiae*) were also chosen for carving, while mairetawhake (*Syzygium maire*), maire (*Nestegis cunninghamii*), ake (*Dodonaea viscosa*) and manuka (*Leptospermum scoparium*) or kanuka (*Kunzea ericoides*) provided tough woods for implements and weapons. Straight stems of manuka and tawa (*Beilschmiedia tawa*) served as battens in house-building, and lengths of kareao (*Ripogonum scandens*) were used to tie pieces of framework together and to hold thatch in place.

We remarked that it would be of interest to check the identity of woods in museum collections of Maori artefacts, using the services of a competent wood technologist. Since 1967, R.N. Patel, Botany Division, DSIR, has published a series of papers on the anatomy of indigenous conifer and dicotyledon wood. In 1978, B.A. Meylan, Physics Engineering Laboratory, DSIR, and B.G. Butterfield, Botany Department, University of Canterbury, Christchurch, completed DSIR Bulletin 222 containing 805 scanning electron micrographs showing the structure of 115 New Zealand woods. The two lines of research provided a basis for Rod Wallace, an Otago-trained archaeologist, to identify the woods used in Maori wooden artefacts from Museum collections.

In his first paper, Wallace identified eight conifer and four hardwood species used in forty-four adze hafts and twelve adze sockets. The artefacts belonged to six collections. A small slip of wood was removed

42. S G Brooker, R C Cambie and R C Cooper, Economic Native Plants of New Zealand, Christchurch, Botany Division, DSIR, 1988

from each artefact for sectioning and light-microscope identification. All the hafts and sockets were made from branches of trees rather than from the more familiar trunk wood. From the results it was clear that the old-time Maori preferred light flexible wood for hafts and heavy wood for sockets. The results did not agree with the ethnographic records, indicating that these records only poorly reflect the prehistoric situation.

Wallace discussed the wood used in 762 Maori artefacts from five museums. Results from these papers and more recent work are summarised below:

Wood	Maori Use
1. Kauri (<i>Agathis australis</i>) trunkwood branch wood	carvings, house timbers, canoes, wakahuia fern root beaters, mallets, tapa, beaters, weapons, one piece spades.
2. matai (<i>Prumnopitys taxifolia</i>) trunkwood branch wood	carvings, bowls, house timbers, wakahuia, spade handles. fern root beaters, mauls, adze handles, spinning tops.
3. totara (<i>Podocarpus totara</i>) trunkwood branch wood	carvings, house timbers, canoes, bowls. adze handles, beaters
4. rimu (<i>Dacrydium cupressinum</i>) tanekaha (<i>Phyllocladus trichomanoides</i>) kawaka (<i>Libocedrus plumosa</i>) Hall's totara (<i>Podocarpus hallii</i>) Dacrycarpu Kahikatea (<i>Dacrycarpus dacrydioides</i>) Trunkwood branch wood	house timbers, bowls, canoes. fern root beaters, adze handles
5. 'mapara' or 'kapara'	spinning tops, hair combs.
6. manuka (<i>Leptospermum scoparium</i>) kanuka (<i>Kunzea ericoides</i>) maire (<i>Nestegis</i> sp) rata (<i>Metrosideros</i> sp) pohutukawa (<i>Metrosideros excelsa</i>), puriri (<i>Vitex lucens</i>), k owhai (<i>Sophora microphylla</i>), akeake (<i>Dodonaea viscosa</i>).	fernroot beaters, mauls, paddles weapons, spade blades, weeders, digging sticks, bird spears (kanuka and maire).
7. mapou (<i>Myrsine</i> sp) porokaiwhiria (<i>Hedycarya arborea</i>), ramarama (<i>Lophomyrtus bullata</i>), and other small broad-leaf trees	digging sticks, composite adze handle sockets (mapou)
8. tawa (<i>Beilschmiedia tawa</i>)	light house timbers, paddles, battens
9. pukatea (<i>Laurelia novae-zelandiae</i>)	bowls, palisade posts.

*resinous heart of rimu and kahikatea, found in the centre of rotton logs in the bush.

It is notable that unlike modern commercial timber use, Maori exploitation of wood involved branch wood and other parts of the tree. This wood often differs from trunkwood in its properties. Kauri branchwood, for example, is heavily resin-impregnated and is very hard, heavy, and tough.

Wallace also reports that the study of a collection of wooden artefacts from a wet archaeological site is showing evidence of a prehistoric exchange network involving wood. The site is located south of the kauri line (the southern limit of kauri is c. 38 degrees south) but contains significant amounts of this species used in making artefacts.⁴³

As an aside it would be of interest to know who made the decisions to remove a 'small slip of wood' from hundreds of taonga held in five museums and what protocols were observed in the process of dealing with these taonga for scientific research.

The Statement of Claim goes on to refer to the forest felling policies of colonial governments and the lack of tangata whenua control (or even input into) most aspects of conservation or non-conservation of the remnant indigenous forests. These matters have been covered in earlier chapters of this report.

6.4.6 Pupū harakeke

Of the three species of fauna itemised in the Statement of Claim the first is the rare snail pupū harakeke. The claim says:

The Pupū Harakeke was treasured by Iwi in whose rohe it was found as an integral part of Te Wao nui a Tāne.

For the people of Ngāti Kuri, the Pupū Harakeke is an especial spiritual and cultural taonga, linking the present with over a thousand years of occupation ahi ka roa.

In the history of Ngāti Kuri, the Pupū Harakeke are a kaitiaki.

Instances are cited of advancing war parties crushing Pupūharakeke underfoot, whereupon the creatures gave warning to Ngāti Kuri with their death-wails.

As Ngāti Kuri exercised access and control over the flora (Harakeke) which nurtured the Pupū, so they were able to exercise the protective authority of kaitiakitanga in relation to the Pupū.

43. R C Cooper and R C Cambie, *New Zealand's Economic Native Plants*, Auckland, 1991, pp 60–62

The Pupuharakeke was also recognised at certain times as a food source for the people of Ngati Kuri.

There is a small collection of articles on pupu harakeke. Most of the evidence is of a scientific nature concerning the current habitat of pupu harakeke. However a paper by B W Hayward and J J Brook does demonstrate Maori customary usage and indeed the transportation of the pupu harakeke from the mainland to Tawhiti Rahi in the Poor Knights group probably by Maori long ago, and at any rate before 1823.⁴⁴ It seems evident from the statement by Saana Murray⁴⁵ that Ngati Kuri as kaitiaki of pupu harakeke are 'excluded, barred and locked out' of the scientific reserve in which a remnant pupu harakeke population survives. This aspect of the claim requires further oral and written evidence.

6.4.7 Tuatara

There is an abundance of information on tuatara and traditional associations with iwi and hapu. For example, Orbell writes:

The tuatara was not regarded with quite so much dread and awe [as the gecko], though there are a few accounts of spirits in the form of tuatara that guarded tapu places. This ancient reptile is much larger than the geckos, up to 60 centimetres in length, and has rows of spines on its head and back which it can erect in an alarming manner. So it could well have seemed more terrifying than the geckos. But at the same time its size made it well worth eating, and it was in fact eaten regularly; by assigning the major role in religious belief to the small gecko, the Maori were able to control their fear of the tuatara sufficiently to make use of it as a food item. However, there were restrictions placed upon their approach to these creatures. When men went out with baskets to capture them, the people left behind in the village had to refrain from eating, as the tuatara would otherwise become angry and attack the hunters. And women never ate tuatara, presumably because they did not have the mana to allow them to do so with safety. It was said that if a woman ignored this prohibition, all the tuatara would come and kill her.

In a few passages in poetry a chief is spoken of as a tuatara, and once or twice there is even an identification with a lizard, or *moko*, probably

44. Bruce H Hayward and F J Brook, 'Exploitation and Redistribution of Flax Snail (*Placostylus*) by the Prehistoric Maori', *New Zealand Journal of Ecology*, vol 4, 1981, pp 33–36

45. S Murray, 'He Taonga te Pupuharakeke', fax to Moana Jackson, 25 July 1991

because this word, a general term for lizards, was also used of tattoo patterns: in some way the two were connected. Since the nature and extent of a man's tattoo patterns depended upon his status, this adornment must have been felt to possess a fearsome aspect, and so to be associated with the lizard.

According to a well known story, geckos and tuatara are the descendants of Punga, whose children are all ugly. At first they lived in the sea, then they become dissatisfied and they moved to their present home. Before going, they discussed their situation with other inhabitants of the ocean. There were two versions of these dialogues, which were chanted by the story-tellers. In one of them, the shark and the gecko debate as to which is the safer place, the land or the sea; they disagree, and go their different ways. In the other dialogue, the debate is between the tuatara and the gurnard:

tuatara:	<i>E te kumukumu, ka haere taua ki uta.</i>
kumukumu:	<i>Kahore, haere koe ki uta.</i>
tuatara:	<i>E, haere mai, ka pau koe i te tangata.</i>
kumukumu:	<i>Kahore, e kore au e pau.</i>
	<i>Ko koe anake te pau!</i>
tuatara:	<i>E kore au e pau!</i>
	<i>Tuku aku tara, rarau aku peke,</i>
	<i>Mataku te tangata, oma ki tawhiti!</i>
tuatara:	Gurnard, let us go to the shore.
gurnard:	No, you go to the shore.
tuatara:	Come with me, or men will destroy you.
gurnard:	No, they will not destroy me,
	It's you who will be destroyed!
tuatara:	I will not be destroyed!
	I will erect my spines and stick out my claws
	And men will be frightened, they will run far away!

Such tales helped to explain why the tuatara and the gecko looked so disturbingly like four-legged fishes. The gurnard must have been seen as the tuatara's counterpart because it has feeler-like processes associated with its side fins, its two dorsal fins look rather like the tuatara's rows of spines, and its head is somewhat similar in shape to that of the tuatara.⁴⁶

46. M Orbell, *The Natural World of the Maori* (revised ed), Albany, 1996, p 91

However, it is my understanding that the Takapourewa (Stephens Island) aspect of this claim concerning tuatara and Ngati Koata may be within the scope of a Deed of Settlement agreed to in November 1994. That Deed was reported and commented upon by the editor of the Maori Law Review as follows:

The island, gifted by Ngati Kuia to Ngati Koata in 1824, was taken by the Crown for a lighthouse site in 1891. Compensation was ordered to be paid to the native owners in 1895. This deed records the settlement of a claim to the Waitangi Tribunal (Wai 95) complaining about that taking.

Ngati Koata and the Crown agree that the protection of the island and the conservation interests of Ngati Koata will be best achieved by declaring the island (currently a wildlife sanctuary) a reserve under the Reserves Act 1977. The Crown undertakes to consult Ngati Koata over management of the reserve. A remnant area of lighthouse reserve remains outside these consultation arrangements. In exchange, Ngati Koata, in exercise of their mana over the island and their role as kaitiaki, 'as a free gift and symbol of partnership with the Crown' agree that their claim is satisfied by the deed and will withdraw it from the Waitangi Tribunal. The Crown does not admit the claim, but entered the deed to protect threatened species living on the island and to acknowledge Ngati Koata mana.

[ed: this settlement has been represented as 'in effect' the return of the island to Ngati Koata who have gifted it to the Crown. The wording of the deed suggests something quite different. The Crown has agreed to create a nature reserve of what was formerly a wildlife sanctuary. The Crown will consult Ngati Koata about the management – something it would have done in any event. Under the Reserves Act 1977, Ngati Koata preferences for management may not, as of right, be given any greater weight than those of, say, the Royal Forest and Bird Protection Society. In addition, the deed greatly simplifies future Crown consultation with Maori over the island. It is therefore difficult to see that Ngati Koata have gained from the Crown any tangible legal rights to better protect their interest in the island in exchange for relinquishing the legal right to pursue their claim].

Of course there are other iwi and hapu with a particular interest in kaitiakitanga concerning tuatara. Ngati Wai and their issues concerning

Hauturu (Little Barrier Island) – mentioned in an earlier chapter of this report – would certainly involve tuatara. However, without a clear understanding of the relationship between the Wai 95 settlement and the Wai 262 claim, it seems appropriate merely to indicate that further research will be required in respect of the tuatara element of the claim.

6.4.8 Kereru

The kereru, also known as kukupa or simply kuku in Tai Tokerau, has already been mentioned in earlier chapters. It is an 'icon specie' which has been the subject of much of the heat generated by the biosphere/ecosystem people and preservationist v customary and Treaty rights debates. NZ Conservation Authority materials draw attention to the strength of feeling both by Maori and by Pakeha concerning the kereru. Of one thing though there can be no debate. The kereru was, and is, a taonga of utmost significance to Maori throughout the centuries of pre-contact occupation, throughout the post-contact and colonisation era and right up to the present day. It is clear beyond any doubt that the future of kaitiakitangi in respect of kereru is at the forefront of the Treaty issues which the Wai 262 claim raises.

The traditional method of hunting kereru is described briefly by Orbell as follows:

But the most important of the game birds, because they were taken in great numbers, were now the placid, heavy-winged pigeons and the noisy kaka, which grew fat on drupes and berries in the autumn and winter. At this time of year they were taken by men perched in the trees where they were feeding, trees so tall and wide-branching that the fowlers used long, slender, bone-tipped spears as much as 9 metres in length and only about 3 centimetres in diameter. These spears took many months of patient skill to make. The wood used was tawa, which is straight-grained and light. A log would be very carefully split into two or perhaps three lengths, and these would be painstakingly chipped and scraped, then rubbed smooth with pumice. Workmen who were restless to complete some task might be reminded, in the words of an old proverb that:

Kahore he tarainga tahere i te ara.

You cannot make yourself a bird-spear as you go.

When the pigeons had been gorging themselves on the fruit of the miro they became very thirsty, and they were then taken in rows of nooses placed alongside streams and cunningly positioned water-troughs; the birds caught their necks in the nooses as they lifted their heads from drinking, and the fowlers returned and collected them at their leisure.

There are many legendary stories concerning kereru:

Their gorgeous plumage was said to be due to the mischievous hero Maui, who wanted to find where his mother went each day at dawn, so one night delayed her departure by hiding her loincloth and belt. In the end she fled down the underworld without them. Maui became a pigeon and flew after her, still carrying her garments, and the bird wears them today. Its white breast and purple-green ruff are the mother's loincloth and belt.

Another story tells of a man named Rupe who is identified with the pigeon, being claimed as its first parent. Rupe had a sister, Hinauri, whose mythic role was that of a wife and mother; in this respect she provided a pattern for all women to follow. Rupe's role was that of a woman's brother – for in Maori society a man has a special relationship with his sister, often having a claim upon the children she produced. Asserting this relationship, Rupe turned himself into a pigeon and went seeking his sister, who was living with her husband. He found her on the very day that she had given birth to a son and after greeting her he swooped down and carried off both sister and nephew; some story-tellers said that he later restored the boy to his father, others that he did not. In real life also a pigeon's behaviour could indicate a special concern with the fate of an infant boy, for an early missionary tells us that if a pigeon should coo 'at the moment when a man-child is born, it is a prognostication that by him some great things are to be brought about'. Probably this pigeon was thought to be Rupe himself.⁴⁷

Oral evidence will disclose many more legendary and practical stories of Maori relationships with kereru. Best, of course, has information too including his usual lists of words used – in this case a two page list of names for 'snares and sundry appurtenances thereto'.⁴⁸ The inter-relationship of person, bird and atua is evident from this snaring charm (for

47. Ibid, pp 15, 104

48. E Best, *Forest Lore of the Maori*, Wellington, 1977, pp 226–270; list of snares etc at pp 232–233

which, on this occasion, Best names his informant as 'Hori Ropiha in the early 'nineties'):

Nga manu i Tarawera te takina mai wairua o manu
Ko manu te kutikuti, ko manu te heihei
Kutikuti o te rangi pekapeka o Tane
Tane i wai inu, i wai inu ki te puna, Tane i hakune.⁴⁹

One of the major omissions in this report is information about ongoing Maori uses and developments in the technology of uses since colonisation. Pakeha writers show much interest in recording the ways of the 'Maori As He Was' to quote Best's title for one of his books. Much less interest is shown in how Maori iwi and hapu adapted and responded to modern technologies. There will be a great deal of information about such topics in archival materials and further research is necessary to unearth that information. I will make some further observations on this point in the last chapter when discussing the Treaty right of development. Meanwhile, however, there is one item of information relating to Maori rights to control over the hunting of birds which is highly relevant to this claim. This is the list of resolutions passed by the Maori Parliament that met at Orakei in 1879.

The Parliament at Orakei included a widely representative gathering of Maori leaders at that time, though drawn mainly from the iwi and hapu who had tended to be neutral during the then recent wars, or had fought alongside the Crown forces. In resolutions passed on 4 March 1879 it is interesting to note that all the debates and the resolutions favourable to the principle of loyalty to the Treaty of Waitangi and to the Crown are reproduced in English translation. Only resolutions 6–11 are left in the original Maori in the record of proceedings tabled in the House of Representatives. The full text as tabled read:

1. That this Parliament will always remain friendly to the Europeans – Carried unanimously.
2. That the chiefs and people here assembled will always remain loyal to the Queen forever – Carried unanimously.
3. If any trouble arises – if war should break out – the chiefs and people of this Parliament will not have anything to do with it – Carried unanimously.

49. Ibid, p 244

4. That the chiefs and people of this Parliament will adhere to the terms of the Treaty of Waitangi and the Conference of Kohimarama forever.

Hori Tauroa: There are some things that I agree to; but I do not agree with all.

The rest of the Natives present voted in the affirmative.

5. The chiefs and people of this meeting will always adhere to the terms of that treaty, and will endeavour to carry them out – Carried unanimously.

The following resolutions were also passed:

6. Ma tenei runanga e whakamana kia tuturu tonu te mana rangatira o nga iwi o enei motu kei ngaro i o tatauri.
7. Ma tenei runanga e whakamana ko nga mahinga ika mo nga kopua mango ki nga iwi Maori ano te mana.
8. Ma tenei runanga e whakamana ko nga mahinga patiki, tuna ki nga iwi Maori ano te mana.
9. Ma tenei runanga e whakamana ko nga tahuna pipi, toka tio, kutai, paua, kina, tipa ki nga iwi Maori ano te mana.
10. Ma tenei runanga e whakamana ko nga parera, kuaka, titi me tahi atu ki nga iwi Maori ano te mana, kua te raihana ki nga whenua Maori.
11. Ma tenei runanga e whakamana ko nga peihana, kukupa tui me tahi atu, ki nga iwi Maori ano te mana, kua te raihana ki nga takiwa Maori.⁵⁰

The language of resolutions 6–11 is not far removed from the language of Wai 262. Resolution 6 puts great emphasis on te mana rangatira o nga iwi. Resolutions 7–9 claim the mana of fishing grounds, shark, flounder, eels, varieties of shellfish and other seafoods rests with nga iwi Maori. Resolutions 10 and 11 are of direct relevance to this claim in insisting that the mana of parera/ducks, kuaka/godwits, titi/shearwaters, kukupa/pigeons, tui and other birds, lies with nga iwi Maori. One non-indigenous specie is included. Peihana/pheasant is included, no doubt because Rewiti of Ngati Whatua at Kaipara had complained about the prohibition against shooting pheasants which damaged Maori cultivations.⁵¹

It is suggested that the 1879 assertion of mana and rangatiratanga by iwi in respect of kukupa and other birds is important evidence for this hearing. It seems sometimes to be thought in Pakeha circles that the term

50. 'Paora Tuhaere's Parliament at Orakei', AJHR, 1879, sess 2, G-8, p 30

51. AJHR, 1879, sess 2, G-8, p 29

taonga and claims relating to tino rangatiratanga under the Treaty are expanding categories to bring in modern issues which could never have been contemplated as Treaty issues in days gone by. There can be no doubt at all that exercising rights to harvest bird species have always been an absolutely essential element of rangatiratanga and the loss of rights to do so lawfully has always been a matter of grievance. Further research would I am sure unearth important information about the insistence by people of Urewera, and other 'native districts' excluded from the prohibition on hunting native game, that they would not accept the impositions of the Animals Protection Acts. As those exclusions were lost, I would strongly suspect that archival material will include protests.

One particular case that I happen to be aware of concerns a wildlife sanctuary at the north head of the Kaipara Harbour on Pouto Peninsula. The land in question was a large block of Maori land, much of it drifting sand which was compulsorily sold by the Tokerau Maori Land Board on the grounds that it was 'unproductive' land under the provisions of the Native Land Settlement Act 1907. The land was however an important bird hunting area for Te Uri o Hau people, including kuaka (godwit), and contained lakes which were a vital source of food for the tribe, especially eels. A research report prepared for Te Uri o Hau claimants contains this information:

On 12 April 1913 the Minister of Internal Affairs, Henry Dillon Bell, arrived at Dargaville on private business but agreed to meet a delegation of locals which included members of the Acclimatisation Society. The Society sought the establishment of bird sanctuary in the sand country at the base of the Pouto peninsula owned by the Marine Department (the 3,333 acres of Pouto No.2D acquired in 1898). 'Wholesale slaughter' of birds in the area was claimed to be occurring. After establishing that the Society had yet to consult what it alleged were 'the few Maoris residing in the neighbourhood', Bell expressed conditional support for the declaration of a sanctuary, 'subject, of course, to non-interference with Maori rights'. He then told the Dargaville audience that he was ready to proclaim the sanctuary 'contingent only on the possible old rights of the Maoris not being interfered with', a conclusion greeted with applause by those present; the Hobson Acclimatisation Society appear to have assumed that Te Uri o Hau's 'old' rights could be readily disposed of. In fact, as will be seen below, these rights were quite

contemporary and the area remained an important mahinga kai area for the people of Pouto, as it had been for many generations.

Faced with the Government's determination to proceed with proclamation of the area as a wildlife sanctuary, the leadership of Te Uri o Hau decided that regaining lawful access to the lakes was the most important issue for them, and they had a struggle to retrieve even that:

In December 1916 Internal Affairs Under Secretary Hislop contacted Kawhi Kena with regard to the purchase of Pouto land for the sanctuary and reminded him of his promise to Bell to have Te Uri o Hau's adjoining lands and lakes also declared a sanctuary, if he would just mark them on a plan sent to him. On 30 December Kawhi replied from Pouto and expressed gratitude to Hislop for consulting with him, clearly something that was a novelty for Te Uri o Hau. He wrote:

'I am very glad that you take notice of me when I met you at Broughton's house. However, dear friend I got the plan of lake and your note. Now first of all, that is our promise to the Hon. Sir F. Bell when he promise us the right to fish eel [in] the whole of Moukino [sic] Lake. Now, friend, I am asking you to let us have a right on the whole of Moukino Lake or any other lake. There is eel in it, so [we] fish [for] eel only, not for anything else. Give me in writing, black and white. I am asking you this on behalf of my people and I will mark on the plan the area of the lake what we promise and I am asking you, I am [to] be the ranger for that part of the lake. I will look after that lake, what I did before'.

Lake Mokeno is well within Pouto No.2E10, so clearly Kawhi Kena and indeed the other Te Uri o Hau who had been with Bell and Coates during their 1914 tour, had indicated they were willing to have their adjacent land included in the sanctuary, provided that their traditional role as kaitiaki over what was now the Crown's land was recognised and they could continue to fish for eels in their lakes.

The details of the story may well differ from one place to another, but I am confident that detailed archival research in Internal Affairs archives and elsewhere will indicate a very consistent pattern of iwi and hapu doing their utmost to continue to carry out their traditional roles as kaitiaki. Meanwhile, Maori who sought to continue bird hunting rights ran the risk of criminal law penalties.

On 14 July 1922 two Maori appeared in the Dargaville Court charged with shooting game on the Pouto sanctuary. The Hobson Acclimatisation Society secretary claimed that:

‘there was a good deal of illegal shooting going on at Pouto, but the trouble was that they could not get sufficient evidence to bring the miscreants to Court. He said that there were only two or three white people there, and these were at the Lighthouse, while the others at Pouto were either Maoris or Dalmatians’.

The two unnamed Maori were fined £10 each with costs of £1/12/6 each.⁵²

It may be added that these ‘miscreants’ were living in an area without road access and without the provision of even the barest minimum of Government services most of the time. But still the criminal law could operate to penalise these ecosystem people who had lived around these sand dunes for centuries, yet no-one thought to take action against local settlers whose cattle roamed into the unfenced sanctuary causing significant problems of erosion.

The Tribunal hearing of Wai 262 will no doubt require actual evidence of the population levels of kereru to take into account when considering appropriate recommendations on this aspect of the claim. This will be important for the claimants too. On the kaitiakitanga responsibilities being restored to iwi and hapu, then iwi and hapu leadership will have to implement management plans for sustainable relationships between people, birds, and habitats. To conclude this chapter, I extract some of the conclusions from a recently completed M.Sc thesis which studied the impact of human settlement on the kukupa, based on field research undertaken on Hauturu (Little Barrier Island).⁵³

CHAPTER VI CONCLUSIONS: CONSIDERATION OF CUSTOMARY USE AS AN OPTION FOR THE FUTURE MANAGEMENT OF KUKUPA (*HEMIPHAGA NOVAESEELANDIAE*) POPULATIONS.

Abstract: Assessment of the conclusions arising from literary and scientific research regarding the impact of human settlement on kukupa (*Hemiphaga noveseelandiae*) populations indicates that survival of the species requires further interdisciplinary research as well as cooperative management. The New Zealand Conservation Authority draft paper and ensuing submissions on customary use reveal the existence of a

52. B Stirling, ‘The Lands of Te Uri o Hau o te Wahapu o Kaipara’, vol 3, pp 193–201, research report for Wai 271 Inquiry

53. J R Taylor, ‘The Impact of Human Settlement on the Kukupa (*Hemiphaga noveseelandiae*)’, MSc thesis, University of Auckland, 1996

cultural bias in the current management of New Zealand's wildlife; recognition of the positive contribution of iwi Maori management, and potential customary use of kukupa populations, is considered to offer positive health benefits to future conservation initiatives aimed at the enhancement of this species.

Introduction

Recent concerns over the status of kukupa populations have arisen due to scientific research and anecdotal observations which indicate declines in population abundance combined with an inability of these populations to successfully replace themselves. An evaluation of the succession of impacts that have accompanied human settlement of New Zealand reveals that this decline is not recent or sudden, but part of a long-term process. For many of New Zealand's more vulnerable species human settlement has led to extinction; the ongoing impacts of settlement now appear to be affecting the surviving and perhaps more 'ecologically robust' species such as kukupa.

Clearance of the few remaining tracts of native forest continues despite the fact that only 23 per cent of the indigenous forest present prior to human settlement remains. Of this, 18 per cent is State-owned and 4.9 per cent is privately owned; some of which could potentially be logged in the future. Despite legislative controls that mandate sustainable logging practices on private land, some areas, including Crown-owned West Coast forests, are exempt. Subsistence of kukupa populations within the majority of the remaining forests is further compromised by the presence of introduced species. Many of these continue to directly predate kukupa eggs, chicks and adults and compete for food and nesting space. In addition, some species indirectly compromise kukupa populations by diminishing the productive base of the environments that kukupa inhabit. Circumstantial evidence and anecdotal accounts also suggest that despite 'absolute protection', kukupa are still hunted in some areas.

In an attempt to gain greater insight into the factors that currently threaten mainland kukupa populations, aspects of the ecological niche of kukupa inhabiting a relatively 'pristine' environment was assessed; this was based on the null hypothesis that there is no difference between the ecological niche of Little Barrier ('non-impact') and previously studied mainland ('impact') kukupa populations. There are a number

of characteristics from this research that may be of benefit to the conservation of kukupa on the mainland.

'Field' Conclusions

Clearly, there are difficulties in gaining meaningful data regarding the ecological niche of any species from studies that span only one year. For example, determining population density or species richness requires several years to allow for natural and/or unusual fluctuations. This influence was particularly apparent during the field component of this research; plant species monitored on the island exhibited (a presumably) unusually 'sparse' fruiting episode. This affected many aspects of the ecology of the island's kukupa during the sampling period and this was taken into consideration when determining the conclusions that could be drawn from the field research.

i) Evaluation of the validity of using Little Barrier Island to represent a 'pristine' environment that can be used as a comparative baseline for other ecological studies, led to the following conclusions:

- ▶ different areas on the island have experienced different levels of human impact; this is reflected in the composition of bird species (native and introduced) present in each area;
- ▶ compared to the mainland, the island retains relatively pristine areas despite human occupation and associated impacts on its biota;
- ▶ parts of the Tirikakawa Valley appears to have potential use as a baseline for comparative studies into bird species which occupy lowland broadleaved forests on the mainland; however, other less accessible (unstudied) parts of the island may better serve this purpose;
- ▶ aspects of the ecology of kukupa utilising impacted areas on the island may also provide information useful in conservation of the species; however, if Little Barrier is to continue to be used as an ecological baseline, reliable systems for monitoring trends in the phenology of the island's plant species need to be established.

ii) Assessment of the diet of kukupa in different habits on Little Barrier, and monitoring of the fruiting phenology of tree species known *a priori* to be important kukupa food sources, led to the following conclusions:

- ▶ kukupa 'flock-feed' on particular ground plant species in open areas despite the presence of predatory hawks; kukupa appear to 'choose' to feed in such areas despite the availability of a limitless supply of forest foliage that is known to be consumed by mainland kukupa;
- ▶ utilisation of ground food sources possibly provides specific dietary requirements and/or sustains populations through periods of sparse fruiting; such sources are seldom utilised on the mainland possibly due to predatory pressure from introduced mammals;
- ▶ the high number of endemic bird species that consume fruit may provide significant 'competition' for fruit food sources on the island; although co-evolution would have favoured reduced levels of competition, it may be possible that kukupa populations on Little Barrier have restricted diets compared to their mainland counterparts who may have 'out-survived' other endemic bird species and expanded into their vacated dietary niches;
- ▶ the possible lack of breeding activity on Little Barrier during the sampling period may be a consequence of capacity population status or alternatively reflect sparse fruit availability/accessibility; this suggests that even 'pristine', pre-human environments would have imposed constraints on kukupa breeding as a consequence of natural fruit crop fluctuation.

iii) Comparison of the relative abundance of bird species in the Tirikakawa Valley on Little Barrier and at Wenderholm Regional Park on the mainland, with kukupa as a focus, led to the following conclusions:

- ▶ the penetration of exotics into 'mainland islands' is significant though their actual impact in terms of competition with kukupa for food sources appears to be relatively limited;
- ▶ forest competition and seasonal fluctuations in fruiting phenology can have substantial effects on the abundance of frugivorous birds; this needs to be taken into account in monitoring population status;
- ▶ protected 'mainland island' areas can offer environments where the impacts of human settlement can be partially rectified; such sites can potentially act as 'stocking sites' or 'breeding refuges' for highly mobile species such as kukupa;

- ▶ due to their crucial role in the regeneration of New Zealand's low-land forests, the management of 'mainland island' restoration areas may need to initially focus on the establishment of stable kukupa populations; this is particularly relevant when assessing the re-introduction of critically endangered bird species which are 'seed-predators'.

Implications

Conservation of species such as kukupa which have experienced adverse impacts leading to a decline in their distribution and abundance following human settlement necessitates the implementation of long term goals such as forest restoration and multi-species predator and competitor control. Short term initiatives, can, however, also aid in kukupa conservation. From the conclusions reached in this research further implications for the conservation of mainland kukupa populations have become evident.

- ▶ to effectively evaluate population status in different areas, monitoring methodology needs to be (and is being) systematised; for example, the dependence of kukupa populations on fruit availability necessitates the inclusion of phenological monitoring of sampling areas and surrounds;
- ▶ intensification of 'mainland island' style management with continued localised predator and competitor control programmes would be directly beneficial to kukupa populations and also aid in regeneration of tree species reliant on kukupa for seed dispersal;
- ▶ provision of adequate funds for the protection and enhancement of forest remnants of all sizes should be a priority; in combination with 'mainland islands', this will directly support existing kukupa populations and will also provide regional linkages aimed at enhancing forest regeneration
- ▶ the vital role of kukupa as dispersers of the seeds of many native tree species should be considered when determining the timing and location of releases of species such as kaka which void non-viable seeds and may be dominant over kukupa when foraging for fruit.

Kukupa are often regarded to have in common with many of New Zealand's critically endangered species, relatively low reproductive rates and a high vulnerability to predation; for this reason it has been

suggested that kukupa are a potentially useful indicator of the effectiveness of mainland island restoration programmes. That is, long term monitoring of their population trends could be a useful indicator of the likely success of any proposed reintroduction of critically endangered species to a particular area. However, the results of this research indicate that the difficulties inherent in accurately monitoring highly mobile and 'fruit dependent' species such as kukupa may invalidate this suggestion. Assuming such difficulties could be alleviated by systemisation of methods for monitoring bird abundance and fruiting phenology, kukupa may then act as a coarse 'biological indicator' based on the premise that they possessed adaptations that have allowed populations to 'out-survive' now extinct or endangered bird species. Being volant (flighted), with arboreal feeding and nesting habits, as well as nesting and roosting in the open canopy (as opposed to nesting in cavities), minimises vulnerability to predators. In addition, kukupa appear to be a particularly adaptable species; for example, they are able to utilise a wide range of food species as well as ground sources when predators are absent. Further, kukupa have exhibited the ability to increase reproductive output by re-laying clutches and by re-nesting after initial nest failure.

An Option for Future Management

As with all 'threatened' species, the future conservation of kukupa populations is reliant on an array of interventions including public awareness, inter-disciplinary research and adequate funding. However, kukupa present an additional challenge. Claims for the restitution of harvest rights by iwi Maori who assert that these rights were guaranteed under the Treaty of Waitangi, as well as the ensuing New Zealand Conservation Authority (1994) draft paper on customary use, have intensified concerns regarding the future of kukupa conservation. In contrast to the concerns held by those who oppose restitution of customary use rights, the NZCA draft paper proposes that sustainable management of kukupa populations incorporating customary use where possible, could actually enhance kukupa and ecosystem conservation. Accordingly, a greater understanding by all those involved in kukupa conservation of the background and potential benefits of customary management/use is necessary.

