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Waiwhatu-Arawhata: Developing English-Te Reo Māori terms for communicating geothermal scientific terms

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ABSTRACT

Māori (the Indigenous peoples of New Zealand), have many traditional terms for geothermal activity and environments. However, the development of geothermal science has resulted in the borrowing or coinage of English and international vocabulary into Te Reo Māori (the Māori language), to keep pace. Words and concepts have been cobbled together with literal translations for parts of words, often making no sense in Te Reo Māori. The Waiwhatu-Arawhata project has been an opportunity to create new kupu (words), that respect Mātauranga Māori (indigenous knowledge) and, in doing so, understand the practice of others. We listened to scientists explain useful technical concepts and then interpreted these through a Māori lens into a shared language, bringing Mātauranga Māori and western science into one space. As the project has matured, some words have moved beyond specific nouns, to adjectives and adverbs that refer to the nature or manifestations of those nouns. One of the first new kupu defined was the noun *Waiwhatu,* meaning geothermal fluid (w*ai* – liquid; *whatu* - stone, core). Thus, *waiwhatu* means fluid from the core (heart of the Earth), not fresh water, but fluid woven through the inside of the Earth to the surface. More recently, the adjective for geothermal was defined as *hanuwhatu* (*hanu* – radiate heat; *whatu* – core) referring to anything relating to geothermal activity, its manifestations and the various sectors involved. In this paper, we share the process for developing, testing and sharing the new kupu, as well as our experiences and learnings.

1 TĪMATANGA KŌRERO | INTRODUCTION

Whaowhia te kete o te mātauranga
Fill the basket of knowledge

Science is often hard to relate to for non-scientists, as scientists use discipline-specific language, and concepts aren't easily aligned to the natural knowledge systems of mātauranga (knowledge). Similarly, scientists find it hard to understand and relate to Māori concepts and thinking. A search for shared understanding was born out of difficulties experienced when trying to source meaningful relevant words in Te Reo (the Māori language), to define scientific terms used in geothermal research.

Māori have many traditional terms for geothermal activity and environments, and a specific geothermal vocabulary that can be used here in Aotearoa, whether speaking Te Reo Māori or English. However, the development of geothermal science has resulted in the borrowing or coinage of English and international vocabulary into Te Reo to keep pace. Words and concepts have been cobbled together with literal translations for parts of words, often making no sense in Te Reo. For example, ngawha means hot spring in Te Reo, but is commonly used to replace the word geothermal. Also, many geothermal terms used are from specific languages, such as lahar from Javanese, pāhoehoe and a'ā from Hawai'ian, geyser from Icelandic 'geysir' and lava from Italian. This adds to the difficulty of sourcing appropriate terms to use as the basis for translation.

The Waiwhatu-Arawhata project has been an opportunity to create new kupu (words) in Te Reo relating to geothermal activity and environments, and, in doing so, to better understand the practice of others. To date, seventeen new words have been developed in two stages:

1. The Waiwhatu model was developed through a pilot project (2022-2023). The project aimed to create five terms / basic concepts in Te Reo Māori that were meaningful and relevant.

2. The Waiwhatu-Arawhata project (2024-2025) applied the Waiwhatu methodology to create an addition 12 kupu. Arawhata means “bridge”, recognizing that the next stage of this journey is transitional. The goal was to use and refine the Waiwhatu methodology in a workflow that sees more development of shared language.

This paper shares the journey, learnings and new kupu, so that others may use the Waiwhatu approach.

2 HE TIKANGA WAIWHATU | THE WAIWHATU MODEL

I orea te tuatara ka patu ki waho
A problem is solved by continuing to find solutions

The Waiwhatu goals and approach are summarized below. For a detailed methodology and learnings from the pilot project, the reader is directed to Blair et al., 2024.

2.1 He aha ai? | Why?

Many Māori are custodians of large tracts of land that have thermal activity. Part of that custodianship would be the enhancement of both geothermal knowledge and the related Māori vocabulary and traditions. Language is a fundamental tool to share knowledge, and a key barrier limiting effective engagement with Māori. The latest tranche of words presented here encourage the future production of educational and informational materials that would, and should, include substantial discourse in Māori beyond the words themselves.

2.2 He pēhea? | How?

This project created an opportunity to understand the practice of others. We listened to scientists explain useful technical concepts, relevant to earth sciences, geothermal and volcanology, and then interpreted these through a Māori lens into a shared language, bringing Mātauranga Māori (indigenous knowledge) and western science into one space. Learning a language is also learning a new culture and discovering new ways of seeing the world. Developing shared language is not the place to contest the relative validity of Western Science and Indigenous Knowledge systems, rather, it is an opportunity to build relationships, seek personal growth, to share understanding, and for innovation.

Whilst English is impacting the evolvement of the Māori language, it was important to be conscious of the need to protect, but not stifle, the scientific understanding as well as the linguistic integrity of either language. For example, English and Te Reo have different language structures – how a word is used in a sentence is different.

The Waiwhatu process can be summarized in the steps below (see Blair et al, 2024):

i. Assemble the team
ii. Select concepts/terms
iii. Explore scientific concepts
iv. Explore potential word use
v. Interpretation through a Māori Lens
vi. Propose and spell new words in Te Reo Māori
vii. Define new words and put them in example sentences
viii. Practice and test new words
ix. Share and communicate the kupu

3 NGĀ KUPU HOU | NEW WORDS

Whāia te mātauranga hei oranga mō koutou
Seek after learning for the sake of your wellbeing

The new kupu are outlined below. Each term is accompanied by a whakamārama (definition), and an example (whakatauira) of the term being used in a sentence (rerenga). The Māori terms are in the English sentence to highlight its use within the discourse. Note that the Māori terms used in that way have no plural forms.

Table 1: New kupu developed in the Waiwhatu pilot project (2022-2023; see Blair et al, 2024)

Magma: Tokarewa	**toka** - rock; **rewa** - to melt, to become liquid
Whakamārama | Definition	Magma is the extremely hot molten or semi-molten rock that exists exclusively underground, it is the source of volcanic eruptions below the surface. Ko te tokarewa, arā, ko te nukutoto ngā toka hanahana rawa e rewa ana rānei, e tūārewa ana rānei i raro tonu i te whenua. Koira te take o ngā hūnga puia o raro rā.
Whakatauira | Example	Scientists use the term magma for molten rock that is underground and lava for molten rock that breaks through the Earth's surface. Whakamahi ai ngā mātanga pūtaiao i te kupu tokarewa, arā, i te nukutoto hei tohu i ngā toka kua rewa i raro i te whenua, ā, ko te kupu 'rangitoto' ina pākaru ake te nukutoto ki runga i te mata o te whenua.
Lava: Rangitoto	Rangitoto - black lava, scoria; said to be the blood from Tamatekapua's nose
Whakamārama | Definition	Lava is the molten rock that has been erupted at the surface of the earth, magma that made its way to the surface. Ko te rangitoto te toka rerewa kua hū ake i te mata o te whenua, arā, ko te nukutoto tērā kua tae ake ki te mata whenua.
Whakatauira | Example	Lava erupted from the most recent volcanic activity in Iceland overflowed the carpark of the Blue Lagoon. I hū ake te rangitoto i ngā mahi puia nōnākuanei i te ūnga waka o te Muriwai Kikorangi i Tiorangi.
Geothermal fluid: Waiwhatu	**Wai** - liquid, oil, etc; **whatu** - stone, core
Whakamārama | Definition	Geothermal fluid is the liquid present inside a geothermal reservoir that can flow to the surface naturally or through wells. Geothermal fluid is the energy carrier that allows the extraction and utilization of heat from the earth. Ko te waiwhatu te wē e mau ana i te māpuna hanawhatu, ā, ka rere noa ake rānei, ka rere rānei ma te pokanga puna ki te mata o te whenua. Ko te waiwhatu hoki he kawenga ngao e tatū ai te tangohanga ake me te whakamahinga atu i te hana o te whenua.
Whakatauira | Example	Geothermal fluid is a hot and concentrated saline solution, having circulated through the very hot rocks of geothermal areas and enriched with minerals. He mehanga kurutai kukū wera te waiwhatu, na te rērere haere i waenga i ngā toka wera rawa o ngā wāhi ahitupua, ā, nā reira hoki i kīkī ai i ngā kohuke.
Reservoir: Māpuna	**Māpuna** - to well up, to form a pool
Whakamārama | Definition	The reservoir is the portion of a geothermal field below ground that is so hot and permeable that fluid can be economically extracted for the production of fluid and heat. This contains: (1) an aquifer or fracture network containing hot fluid, (2) a path through which cold water can flow to recharge the system or an input of magmatic fluid and (3) a source of heat. He wāhanga hana rawa, pōareare rawa te māpuna no te apa hanawhatu e āhei ā-utu nei te tango ake hei wē, hei hana. Kei roto rā, ka tahi ko te mātāwai rānei, ko te whatunga rānei e mau ana te wē hana; ka rua ko te ara e rere iho ai te wai mātao rānei, te rewanga nukutoto rānei hei whakakīkī atu; ka toru ko te pūnga o te hana.
Whakatauira | Example	Reservoirs are geothermal resources of hot fluid that exist at varying temperatures and depths below the Earth's surface. He rawa waiwhatu ngā māpuna e hia nei ngā paemahana, e hia nei te hōhonu iho i te mata o te whenua.
Enthalpy: Ngaohū	**Ngao** - strength, energy; **hū** - still, at rest
Whakamārama | Definition	Enthalpy is the sum of the internal energy and the product of the pressure and volume of a thermodynamic system. Ko te ngaohū te tapeke o ngā ngao katoa o roto me te hua o te pēhanga me te rahi o tētahi pūnaha hana tainekeneke.
Whakatauira | Example	What they're seeking are the ways to convert enthalpy into the forms of energy that will improve the lives of people. Ko tā rātou e whai nei ko ngā tikanga e huri ai te ngaohū hei momo ngao e hīkina ai te oranga o te tangata.

Table 2: New kupu developed during the Waiwhatu-Arawhata Project (2024-2025)

Aquifer: Mātāwai	**mātāwai** – fountainhead
Whakamārama | Definition	An aquifer is a layer of underground rock or sediment that stores water and has enough permeability to enable the water to flow within it. He apa toka rānei, whaipara rānei te mātāwai e mau ana te wai, ā, e rahi ana hoki te pōareare e rērere ai taua wai mā roto.
Whakatauira | Example	In order to build a power station here we first need to determine whether there is enough geothermal liquid and the types of rock that we're seeking within this aquifer. Hei hanga i te punahiko i konei me mātua tautohu mehemea e rahi ana te waiwhatu me ngā momo toka e hiahia nei tātou i roto i te mātāwai nei.
Brine: Kurutaitai	**kurutaitai** - brackish; **tau**- -inter-; **kawekawe** - to affect
Whakamārama | Definition	Geothermal brine is fluid that is enriched in minerals, salts and metals from interaction with rocks in the subsurface. Ko te kurutaitai waiwhatu te wai e kī ana i ngā kohuke, i ngā kurutai, i ngā konganuku no te taukawekawe ki ngā toka o raro tonu i te mata o te whenua.
Whakatauira | Example	According to the advisory committee geothermal brine must be put back into the reservoir to mitigate the effects of subsidence and pressure draw-down. E ai ki te komiti tohutohu me whakahoki te kurutaitai waiwhatu ki te māpuna hei pare atu i te maroro o te whenua me te hekenga o te pēhanga.
Cap-rock: Pātoka	**pā** - screen, blockade; **toka** - rock
Whakamārama | Definition	The cap rock of a geothermal reservoir (or oil and gas reservoir) is the non-porous and impermeable layer that prevents fluid from escaping. Ko te pātoka o te māpuna waiwhatu (hinu rānei, haurehu rānei) te apa hemahema kore, pōareare kore e aukati ana i te rerenga atu o ngā wai.
Whakatauira | Example	Luckily the geothermal system below us maintains its pressure and temperature because the impermeable cap-rock above it keeps the high-pressure fluids contained. Kua waimarie tātou i te mea mau ai te pēhanga me te paemahana o te pūnaha ngāwhā i raro nei i te tāwhitanga o te pātoka pītongatonga o runga.
Extremophiles: Oratiatia	**ora** - alive, safe; **tia** - persistency
Whakamārama | Definition	Extremophiles are the organisms that can thrive in hot, dry, acidic, basic or high-pressure conditions that human life cannot exist within Ko ngā oratiatia he rauropi e tōnui ana i ngā wāhi wera rawa rānei, maroke rawa rānei, waikawa rawa rānei, pēhanga nui rānei e kore ai te tangata e ora.
Whakatauira | Example	There are many kinds of extremophiles to be found in thermal hotpools or fumeroles, including bacteria, algae and fungi. He maha ngā momo oratiatia e kitea ana i ngā ngāwhā me ngā puta puia, ānō he huakita, he kapoke, he hekaheka.
Geochemistry: Nukuraunaha	**nuku** - the earth; **rau** – multitude; **naha** - system [Paekupu]
Whakamārama | Definition	Geochemistry is the study of the chemical composition of the earth and its rocks and minerals. Ko te nukuraunaha te mātai o te hanga matū o Papatūānuku me ōna toka, me ōna kohuke.
Whakatauira | Example	A geochemistry survey of this geothermal well will give us an indication of whether the subsurface reservoir is heating up or cooling down. Ma te mātaitai nukuraunaha i te puna waiwhatu nei e mōhio ai tātou mehemea kua wera ake rānei, kua mātaotao iho rānei te māpuna i raro tonu i te mata o te whenua.
Geothermal: Hanawhatu	**hana** - radiate heat; **whatu** - core
Whakamārama | Definition	Geothermal, as an adjective, refers to anything relating to geothermal activity, its manifestations and the various sectors involved, whatever they may be – including Te Ahi Tupua and Te Tini o Rūaumoko.

	Ko te hanawhatu, hei tūāhua, ka hāngai ki ngā hanga hanawhatu katoa, ki ōna putanga, ki ngā tini peka hoki, ahakoa he aha – ānō hoki, Te Ahi Tupua me Te Tini o Rūaumoko.
Whakatauira | Example	A renowned geothermal specialist will give a dissertation about the benefits and dangers of exploiting the geothermal resources on our tribe's lands Ka kauhau te mātanga hanawhatu i ngā painga me te mōrearea o te whakamahi i ngā rawa hanawhatu o ngā whenua o tō tātou iwi.
Geothermal Gases: Hauwhatu	**hauwhatu** - geothermal gases [Coined word to align with 'waiwhatu']
Whakamārama | Definition	Geothermal gases result from degassing of magma chambers underground and fluid-rock interactions within a geothermal reservoir, these gases are most commonly carbon dioxide (CO_2), hydrogen sulfide (H_2S), and methane (CH_4). Putaputa ake ai te hauwhatu i te tahenga o ngā hau i ngā wāhi nukutoto i raro i te whenua me ngā taukawekawe o ngā wai me ngā toka i roto i te māpuna hanawhatu. Ko te nuinga o aua hauwhatu ko te hauhā (CO_2), ko te hauwai pungatara (H_2S), ko te mewaro (CH_4). * nukutoto - magma [coined word to align with 'rangitoto']
Whakatauira | Example	Hydrogen sulfide (H_2S) is the geothermal gas that we smell in Rotorua particularly around Sulfur Point and Kuirau Park coming to the surface with geothermal fluid in hotpools as well as steam. Rangona ai te hauwai pungatara i Rotorua nei, ā, ka tino rangona taua hauwhatu nei i Motutara me Kuirau e puta ake ana i te waiwhatu o ngā ngāwhā me te korohū hoki.
Permeability: Pōareare	**pōareare** – porous
Whakamārama | Definition	Permeability is how easily fluid or gases can move through the void space in a rock. Tohu ai te pōareare i te rerenga o ngā wai rānei, o ngā hau rānei mā roto i ngā wāhanga hemahema o te toka.
Whakatauira | Example	The refilling of the reservoir here with geothermal liquids is quite quick due to the permeability of the rocks. Kātahi te tere o te whakakī i te māpuna o konei ki ngā waiwhatu i te pōareare o ngā toka!
Porosity: Pae Hemahema	**paenga** - margin, boundary; **hemahema** - void
Whakamārama | Definition	Porosity is the measure of void space in a known volume of rock Ko te pae hemahema te inenga o te wāhanga hemahema o te toka.
Whakatauira | Example	One of the many outcomes of the geothermal activity is the pumice found washed up on the lake shore. Pumice is formed when gas bubbles get trapped in the rapidly cooling magma during a volcanic eruption. Ko tētahi o ngā tini putanga o te hanga hanawhatu ko te pungapunga ka pae atu ki ngā tahatika moana. Ka āhuatia ake i te rarau o ngā mirumiru hau i roto o te nukutoto e mātaotao tere ana i muri i te hūnga puia.
Silica: Takawaiwhatu	**takawai** - quartz; **waiwhatu** - geothermal liquid [previously coined word]
Whakamārama | Definition	Silica is the dissolved quartz found in geothermal systems. He rewanga takawai te takawaiwhatu e kitea ana i ngā pūnaha hanawhatu.
Whakatauira | Example	The Pink and White Terraces were awe-inspiring silica structures formed by geothermal waters that crystalised over hundreds of years. Yet, it took only one volcanic eruption to disappear! He tūāpapa takawaiwhatu whakamīharo a Ōtūkapuarangi me Te Tarata kua āhuatia ake i ngā waiwhatu me te takawaitanga i ngā rautau e hia nei. Engari, kotahi anake te hūnga puia, ā, ka ngaro!
Supercritical: Tuawhiti	**tua** - on the further side; **whiti** - to change, to turn
Whakamārama | Definition	Supercritical is the condition where geothermal fluids are above the pressure and temperature conditions to exist in a state that is neither solid, liquid or gas. Ko te tuawhiti te āhuatanga e piki ai te waiwhatu i tua atu i ngā hanga pēhanga, paemahana e riro tonu ai te hanga ehara i te totoka rānei, i te wai rānei, i te hau rānei.
Whakatauira | Example	Supercritical geothermal liquid can't be seen naturally on the surface as it needs an incredibly high temperature and immense pressure to stay supercritical.

	Kāore te waiwhatu tuawhiti e kitea noatia i te mata o te whenua i te mea me kaha ngihangiha te wera, me taumaha rukiruki hoki te pēhanga kia mau tonu ai te hanga tuawhiti.
Superhot: Pūhanahana	**hana** - radiate heat; **pū** - exceedingly [recalibrated as a prefix]
Whakamārama | Definition	Superhot conditions exist below geothermal reservoirs where the heat in the rocks is higher than traditional geothermal systems, in excess of 350°C. Superhot systems may not have high enough pressure for fluid to exist as supercritical fluid. Mau ai ngā āhuatanga pūhanahana i raro iho i ngā māpuna waiwhatu e wera ake ai te wera i ngā pūnaha hanawhatu māori, arā, i te 350°C (tārau). Tērā pea kāore te nui o te pēhanga o ngā pūnaha pūhanahana e rahi kia huri ai te waiwhatu hei waiwhatu tuawhiti.
Whakatauira | Example	There's a lot of talk about superhot rocks being a valuable resource for electricity in the future. Even politicians have gotten into the act! Ka nui ngā kōrero mō ngā toka pūhanahana hei rawa whaihua mo te mahi hiko i ngā tau e haere mai ana. Hei matapaki hoki ma te hunga tōrangapū!

4 HE KŌRERO | DISCUSSION

Mā mua ka kite a muri, mā muri ka ora a mua
Those who lead give sight to those who follow, those who follow give life to those who lead

We believe that matters related to geothermal (and volcanic) activity already play an important role in Māori traditions, and in some areas, in culture and lifestyle. At the same time, the actual 'mechanics' of geothermal activity are not well understood or commonly discussed. Alongside its traditional and current role, geothermal activity may be a crucial component of meeting our future energy needs as a way to replace the use of fossil fuels. There was a time when Māori knew the most about the geothermal activity manifested in Aotearoa. Like many other aspects of traditional knowledge (mātauranga*)*, geothermal knowledge was appropriated, and largely been misplaced, by Western premises and understandings. This project called upon us all to value and include traditional and evolving Māori knowledge, language, custom and association with all things geothermal.

4.1 Ngā Whakaaro | Lessons & Learnings

Seven key learnings from using the Waiwhatu model (see Blair et al, 2024 for more detail) can be summarised as:

1. *Embrace multiple world views*
   The process of looking at scientific concepts through a different lens helped us to know the concepts better, to be more thoughtful than just using the existing terms. The team had to overcome their own biases, embrace the emotive response to the concepts, and explore the philosophical relationship between humans and the natural environment.

2. *Don't rush*
   It's better to focus on taking time to develop less words/concepts in depth, than rushing through many words lightly. Don't try to translate. Instead, seek the essence of the relevant scientific terminology by discussing concepts and their deeper meanings.

3. *Choose the right people*
   A diverse range of ages, genders and experience meant richer conversations and perspectives influenced the development of shared language. Select team members predisposed to embracing new ways of working and modelling use of the language. Curiosity and commitment are key.

4. *Everyone must be a learner*
   There should be no hierarchy in the team, with everyone's mana (authority) mutually respected. Everyone in the team is both teacher and student, gaining new knowledge. A high-trust environment and safe space allows team members to say something 'wrong' and make mistakes—a prerequisite part of learning a language!—and to challenge each other on definitions, explanations and deeper meanings.

5. *No one owns the words*
   It was important to choose Māori kupu that were not already in use or already associated with a particular region, dialect or place. The new words needed to be usable across Aotearoa New Zealand without any perceived prior 'ownership' or expectation on their use. The new words are not 'owned' by the creators.

6. *Value outcomes, not outputs*
   The true value of this work is the long-term outcomes: opening lines of communication and inviting diverse perspectives, as well as supporting Māori stakeholders to feel more included in the geothermal industry.

7. *Be the leader you wish to see in the world*
   Individuals are on a personal journey, and many people are not ready for work that decolonizes research and welcomes indigenous voices into 'science' discussions. If you think developing shared language is important, then you are the right person to move it forward. Leading this work isn't about expertise, rank, titles or your role within an organization. Believe in yourselves and the project. You don't need permission.

4.2 Kōkiritia ngā kupu hou | Sharing the new words

He matakahi iti e hinga ai te tōtara.
The totara tree is brought down by the smallest wedge.

Te Reo Māori is an ever-evolving language, and the true test of these kupu will be how widely the words and concepts are used by others outside the project team —that is when language truly exists in the world. Also, if the new words are not adopted, we won't be afraid to go back and change them, or to adopt what becomes common use.

It is important to note that our goal was to create new language for expression and use *within Aotearoa New Zealand*, not overseas. The international sharing of this project is intended to be a suitable test case and example for other areas and undertakings. There is no expectation that the Māori words created will replace existing global terms for key scientific concepts. The use of these terms in Te Reo Māori beyond Aotearoa New Zealand could denote the special relationship Māori have with geothermal resources. The associated traditions could further differentiate that relationship that other countries have with their own, especially in the use of metaphor.

It would be easy to keep applying the Waiwhatu model to keep creating an ever-growing list of new words…but the focus of activity must move to sharing the words, and in doing so, encourage their use as a means to enhance relationships and to create greater collaboration through shared understanding. A key next step is exposure to the kupu and the modelling of their use. For modelling, people who know about geothermal science, who communicate well and whom others want or need to listen to. This group needs to acquire many more members who are also proficient speakers of Māori to be available to any audience of proficient learners of Māori.

A digital first (online) communication toolkit has been launched. The soundbites of each kupu and the associated rerenga (sentences) are available to listen to on youtube (www.youtube.com/@waiwhatu) and on the project website: www.waiwhatu.com . Downloadable graphics are also available on this website.

5 WHAKAMUTUNGA | CONCLUSION

Whāia e koe te iti kahurangi, ki te tūohu koe, me he maunga teitei
Pursue excellence – should you stumble, let it be to a lofty mountain

The Waiwhatu model has been successful in demonstrating an effective methodology for developing shared language and the pilot project produced five new kupu. The Waiwhatu-Arawhata project extended and applied the methodology to create an addition 12 kupu relating to geothermal activities and environments. This approach is reproducible and not limited to use in Aotearoa New Zealand. Developing shared language is an opportunity to build relationships, seek personal growth, to share understanding, and for innovation. The discourse and discussion are more important than the words. Our hope is that the geothermal community becomes a welcoming place for indigenous peoples to meaningfully engage, participate and lead discussions, debate and direction for future research and industrial developments.

Ngā mihi | Acknowledgements

Ehara taku toa i te toa takitahi, engari kē he toa takitini
My success should not be bestowed onto me alone,
it was not individual success but the success of a collective

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Kuputaka | Glossary

Te Reo Māori Terms used in this paper.

Term	Description
Kaitiaki, kaitiakitanga	Guardian of natural resources and the act of guardianship; principle of intergenerational sustainability and the practices to achieve it
Kupu	Word
Māori	The Indigenous peoples of Aotearoa New Zealand
Mātauranga Māori	Knowledge, culture, values, and world view held by Māori
Noa	Ordinary, unrestricted (free from the extensions of tapu)
Tangata whenua	People of the land
Rangahau	Research; to seek, search out, pursue, research, investigate.
Reo	Language
Tauira	Student
Tapu	Sacred, prohibited
Te Ao Māori	Māori world views
Te Reo Māori	Māori language

NGĀ TOHUTORO | REFERENCES

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