

***Title:*** The Influence of Māori Indigenous Knowledge on Environmental Sustainability in New Zealand

***Research Question:*** How is Māori indigenous knowledge enhancing environmental sustainability in New Zealand?

***Subject:*** World Studies: Environmental Systems & Societies and Anthropology

***Word Count:*** 3930

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## 1. Introduction

Humanity's existence has always been highly dependent on a close relationship with the natural environment. While there has consistently been a degree of concern for environmental preservation and restoration, it has recently gained significant momentum. Environmental sustainability is now a widely understood concept, defined as "responsible interaction with the environment to avoid depletion or degradation of natural resources and allow for long-term environmental quality".<sup>1</sup>

Following major environmental disasters such as the Chernobyl nuclear accident in 1986, Kuwaiti oil fires in 1991, and the Deepwater Horizon oil spill in 2010, there has been a global awakening regarding the value and fragility of our environment. This growing awareness has sparked a more holistic and inclusive approach to achieving environmental sustainability, including recognising the importance of indigenous knowledge. According to Rajasekeran, this knowledge is defined as people's accumulation of experience, informal experiments and intimate understanding of local environments within a given culture<sup>2</sup> and it has provided a systematic body of information and resourcefulness that has allowed indigenous groups to sustainably manage natural resources for millennia.

This extended essay illustrates how knowledge systems of the Māori indigenous population of New Zealand are being incorporated into national environmental management and policy, providing an example of how similar approaches could be applied elsewhere in the

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<sup>1</sup> "Environmental Sustainability: Definition and Application." Study.com. Accessed September 6, 2020. <https://study.com/academy/lesson/environmental-sustainability-definition-and-application.html>.

<sup>2</sup> Rajasekaran, Bhakthavatsalam. "A Framework for Incorporating Indigenous Knowledge Systems into Agricultural Research and Extension Organizations for Sustainable Agricultural Development in India." Accessed September 20, 2020. <https://doi.org/10.31274/rtd-180813-9576>.

world to help inform local environmental strategies for sustainability. My research question is: **How is Māori indigenous knowledge being used to enhance environmental sustainability in New Zealand?**

To tackle this question, the essay approaches the topic through two interdisciplinary lenses: Anthropology; and Environmental Systems and Societies. The anthropological perspective examines the Māori relationship with the environment through an evolutionary and ecological approach, while the environmental systems & societies perspective uses core environmental philosophies to explore reasons for environmental protection in New Zealand. Using an interdisciplinary approach allows a deeper understanding of the Māori worldview – *Te Ao Māori* – and its application to enhance environmental sustainability.

## **2. Global Context**

Our world is facing an environmental crisis, but not enough is being done to confront the devastating future effects it will have on humans and all other life on Earth. Responsible interaction with our environment is essential to sustain our natural resources for future generations, and this is where indigenous knowledge (IK) can play a key role.

In the past, IK has been perceived as ‘backward’ and primitive – associated with uneducated peoples who did not have access to so-called superior western knowledge<sup>3</sup> or exposure to rapidly evolving global economic and social progress. A colonial past nurtured the concept of western-style science as a basis for growth and development and IK fell outside this realm and was undervalued. The lack of empirical evidence and rigorous scientific methodology

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<sup>3</sup> “Indigenous Knowledge and Implications for the Sustainable Development Agenda .” unesdoc.unesco.org. UNESCO. Accessed June 16, 2020. <https://unesdoc.unesco.org/ark:/48223/pf0000245623>

within IK (in contrast to western knowledge) contributed to its neglect.<sup>4</sup> However, more recently, there is an increased recognition and growing admission of the importance of IK in advancing environmental sustainability. Indigenous communities have, after all, managed over the years to adapt to invasion, oppression and adverse climate conditions while maintaining sustainable lifestyles using limited local resources.

Māori have an ecocentric worldview where intrinsic value is placed on all living organisms, regardless of their use to humans.<sup>5</sup> This is embodied in the concept of *kaitiakitanga*, or guardianship of natural resources to protect, conserve and ensure their sustainable use. Similar examples of this concept from other parts of the world include: Mundurucu tribes of the Amazon who practice 'counter-mapping' which entails mapping their own territorial boundaries to defend their land from industrial agriculture, mining, dams and logging;<sup>6</sup> Australian Aboriginals who use '*middens*' (seafood garbage dumps) so ensuing fisherfolk know what species to leave to allow recovery;<sup>7</sup> and Masaai tribes in Kenya who observe the behaviour of specific insects and birds, which indicate the nearness of rains and therefore the best time to plant certain crops. These examples show there is variation in global indigenous knowledge systems, but the common theme of promoting sustainable practices to protect local environments applies.

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<sup>4</sup> George Nicholas Professor of Archaeology. "It's Taken Thousands of Years, but Western Science Is Finally Catching up to Traditional Knowledge." *The Conversation*. June 09, 2020. Accessed June 22, 2020. <https://theconversation.com/its-taken-thousands-of-years-but-western-science-is-finally-catching-up-to-traditional-knowledge-90291>.

<sup>5</sup> Rutherford, Jill, and Gillian Williams. "Environmental Perspectives." Essay. In *Environmental Systems and Societies: for the IB Diploma*, 19–21. Oxford: Oxford University Press, 2016.

<sup>6</sup> Jos Barlow Professor of Conservation Science, Alexander C. Lees Lecturer in Tropical Ecology, Erika Berenguer Senior Research Associate, James A. Fraser Lecturer in Political Ecology, and Joice Ferreira Researcher in Ecology. "Only Local Amazonians Can Bring True Sustainable Development to Their Forest." *The Conversation*. January 29, 2020. Accessed June 20, 2020. <https://theconversation.com/only-local-amazonians-can-bring-true-sustainable-development-to-their-forest-83326>.

<sup>7</sup> "Reflecting on 'Indigenous Sustainability Practices and Processes'." Sydney Environment Institute. May 20, 2020. Accessed June 20, 2020. <http://sydney.edu.au/environment-institute/opinion/reflecting-indigenous-sustainability-practices-processes/>.

### 3. Local Context

In the early 19th century, European colonisation of New Zealand drastically affected Māori activities, customs and knowledge. Māori culture was continually undermined through constitutional and legislative oppression.<sup>8</sup> For example the Tohunga Suppression Act (1907) banned the practice of traditional Māori healing, replacing it with western medicine.

In 1840, the Treaty of Waitangi was signed by representatives of the British Crown and Māori chiefs, framing the relationship between the New Zealand government and the Māori people. On signing, both Māori and the Crown made promises: Māori gave the Crown rights to govern their country and develop British settlements, and the Crown granted Māori full protection of all natural resources. The Treaty was open to interpretation though and in 1975 the government created the Waitangi Tribunal, to voice Māori claims and breaches of the Treaty, and to ensure future legislation would align with the Treaty's intentions.<sup>9</sup> The establishment of the Waitangi Tribunal and the ensuing claims against the Crown caused Māori to "revisit their history and identity".<sup>10</sup> This spurred the government into creating new natural resource legislation, requiring the strong ecocentric relationship between Māori and the environment, which is explained in more detail later in the essay, to be duly considered.

In New Zealand, there has been an indigenous renaissance, and with it a willingness for traditional knowledge and values to be set equally with western concepts and values, as a

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<sup>8</sup> Garth Harmsworth. "Indigenous Concepts, Values and Knowledge for ..." Accessed June 24, 2020. [https://www.researchgate.net/publication/228742301\\_Indigenous\\_concepts\\_values\\_and\\_knowledge\\_for\\_sustainable\\_development\\_New\\_Zealand\\_case\\_studies](https://www.researchgate.net/publication/228742301_Indigenous_concepts_values_and_knowledge_for_sustainable_development_New_Zealand_case_studies).

<sup>9</sup> "Waitangi Tribunal Created." RSS. Accessed July 7, 2020. <https://nzhistory.govt.nz/waitangi-tribunal-created>.

<sup>10</sup> Hutchings Jessica et al. "Enhancing Māori Agribusiness through Kaitiakitanga Tools." ResearchGate. Accessed July 3, 2020. [https://www.researchgate.net/publication/323227912\\_Enhancing\\_Maori\\_agribusiness\\_through\\_kaitiakitanga\\_tools](https://www.researchgate.net/publication/323227912_Enhancing_Maori_agribusiness_through_kaitiakitanga_tools).

basis for living.<sup>11</sup> The revitalisation of Māori IK, as Māori struggled to retain rights over land and resources, has resulted in an increase in Māori representation and participation in natural resource management and legislation.

#### **4. Research Methodology**

In response to the research question, primary data was collected through an open-ended questionnaire sent to the 10 largest regional councils in New Zealand with respect to Māori population (Figure 1). This line of research was taken because regional councils manage environmental, natural resource and transport planning issues in New Zealand, and by law must consult local Māori in their decision-making processes. The survey covered three key lines of enquiry, including: recognition of Māori IK; measures taken by councils to ensure Māori have the opportunity to provide inputs in regional planning; and examples of Māori IK impacting proposed policies/projects/plans. The survey requested informed consent and consisted of four questions (see Annex 1). Qualitative findings from my primary research are integrated throughout the essay.

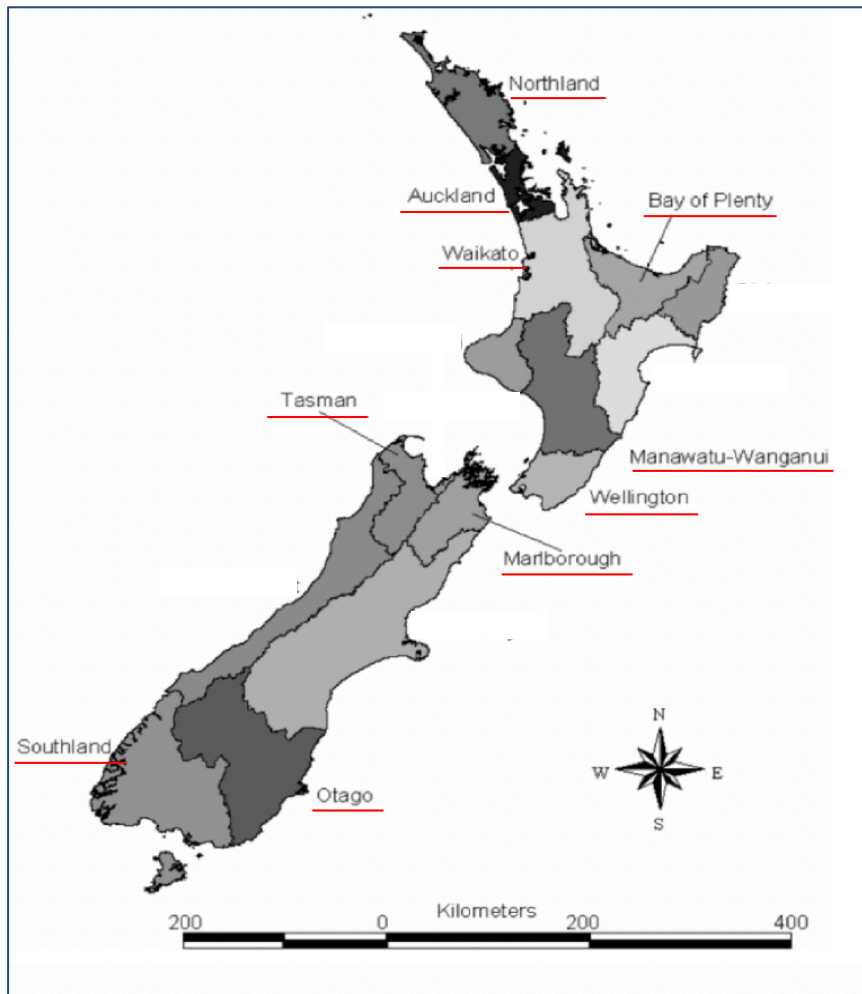
While the primary research was time consuming and contains inherent bias due to the fact that respondents naturally want to shed a positive light on their region, it provided insightful knowledge from a regional council perspective on local promotion and application

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<sup>11</sup> Garth Harmsworth. "Indigenous Concepts, Values and Knowledge for Sustainable ..." ResearchGate. Accessed July 3, 2020.  
[https://www.researchgate.net/publication/228742301\\_Indigenous\\_concepts\\_values\\_and\\_knowledge\\_for\\_sustainable\\_development\\_New\\_Zealand\\_case\\_studies](https://www.researchgate.net/publication/228742301_Indigenous_concepts_values_and_knowledge_for_sustainable_development_New_Zealand_case_studies).

of Māori IK. It also enabled triangulation of knowledge generated from secondary sources and reinforced my findings accordingly.

**Figure 1: New Zealand Regional Councils Surveyed<sup>12</sup>**



<sup>12</sup> Lowry, Thomas. *Map of New Zealand Showing Regional Council Boundaries*. . Accessed September 19, 2020. [https://www.researchgate.net/figure/Map-of-New-Zealand-showing-regional-council-boundaries\\_fig1\\_234839644](https://www.researchgate.net/figure/Map-of-New-Zealand-showing-regional-council-boundaries_fig1_234839644)



## 5. Anthropological Perspective - Māori and the Natural World

Māori have a holistic and interconnected relationship with the natural world and its resources, which is grounded in their ancestral knowledge that has matured over time.<sup>13</sup>

Using an anthropological lens, we can unpack Māori cultural meaning, including the norms and values that have shaped the Māori worldview, and which have been fundamental in promoting a more holistic appreciation of environmental sustainability in New Zealand.

Much of *mātauranga* Māori (Māori knowledge) is sourced from *whakapapa* – described by Barlow as “the genealogical descent of all living things from the gods to the present time”.<sup>14</sup>

By applying an anthropological evolutionary approach, which is diachronic and encompasses both the biological and cultural evolution of human beings and societies,<sup>15</sup> we appreciate that *mātauranga* Māori is historical knowledge that continues to evolve and adapt to the ever changing world.<sup>16</sup> This evolutionary belief system is derived from cosmology, mythology, religion and anthropology, but importantly is constantly evolving, as contemporary Māori continue to reposition themselves in a changing world.

Understanding the cosmology and traditional concepts that shape the Māori worldview provides an insight into the deeply rooted relationship that Māori have with the environment.<sup>17</sup> *Mātauranga* Māori, firmly places Māori in an environmental context, with

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<sup>13</sup> “Indigenous Māori Knowledge and Perspectives of Ecosystems.” Accessed July 13, 2020. [https://www.landcareresearch.co.nz/\\_data/assets/pdf\\_file/0007/77047/2\\_1\\_Harmsworth.pdf](https://www.landcareresearch.co.nz/_data/assets/pdf_file/0007/77047/2_1_Harmsworth.pdf).

<sup>14</sup> Barlow, C. 1987. The scope of Māori genealogy. *New Zealand Genealogist*, 18:34-36.

<sup>15</sup> “Ecological Anthropology.” *Anthropology*, April 24, 2017. <https://anthropology.ua.edu/theory/ecological-anthropology/>.

<sup>16</sup> “Environment Guide.” Māori and Biodiversity • Environment Guide. Accessed July 14, 2020. <http://www.environmentguide.org.nz/issues/biodiversity/maori-and-biodiversity/>.

<sup>17</sup> Harmsworth GR, Awatere S 2013. “Indigenous Māori Knowledge and Perspectives of Ecosystems” In Dymond JR Ed. *Ecosystem Services in New Zealand – Conditions and Trends*. Manaaki Whenua Press, Lincoln, New Zealand. Pp 274 – 286.” ResearchGate. Accessed July 15, 2020. [https://www.researchgate.net/publication/258423762\\_Harmsworth\\_GR\\_Awatere\\_S\\_2013\\_Indigenous\\_Maori\\_knowledge\\_and\\_perspectives\\_of\\_ecosystems\\_In\\_Dymond\\_JR\\_ed\\_Ecosystem\\_services\\_in\\_New\\_Zealand\\_-\\_conditions\\_and\\_trends\\_Manaaki\\_Whenua\\_Press\\_Lincoln\\_New\\_Zealand](https://www.researchgate.net/publication/258423762_Harmsworth_GR_Awatere_S_2013_Indigenous_Maori_knowledge_and_perspectives_of_ecosystems_In_Dymond_JR_ed_Ecosystem_services_in_New_Zealand_-_conditions_and_trends_Manaaki_Whenua_Press_Lincoln_New_Zealand).

all the living and non-living placed in a hierarchical genetic assemblage.<sup>18</sup> While clearly not embedded in empirical evidence, this belief system starts with creation, including *Ranganui*, ‘the Sky Father’, and *Papatuanuku*, ‘the Earth Mother’. Their offspring are *atua* (gods) of various parts of the natural world, with only one line of descent leading to humankind. Examples include; *Tāne*, god of the forests, and *Tangaroa*, god of the sea.<sup>19</sup> Humans and natural elements are all traced back to *Ranganui* and *Papatuanuku*, indelibly connecting Māori to the natural world. According to Hayes “interconnectedness by way of *whakapapa* explains why Māori relate to the environment from a position of parity rather than ascendancy”<sup>20</sup> suggesting Māori from their perspective of the ecosystem as equals or guardians, and not just as consumers.

Viewing Māori values through this evolutionary perspective is fundamental in understanding their motives for protecting and conserving the environment, but as a belief system, wholly faith-based, its legitimacy within a dominant western scientific context, was not always fully recognized or valued. It is therefore essential for Māori IK to be interpreted by those familiar with it. Forcing Māori IK into Western scientific frameworks has resulted in misinterpretations. To overcome this, the New Zealand Environmental Protection Authority established a Māori advisory committee, Te Herenga, to help decision-makers examine the

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<sup>18</sup> “Indigenous Māori Knowledge and Perspectives of Ecosystems.” Accessed July 13, 2020.

[https://www.landcareresearch.co.nz/\\_data/assets/pdf\\_file/0007/77047/2\\_1\\_Harmsworth.pdf](https://www.landcareresearch.co.nz/_data/assets/pdf_file/0007/77047/2_1_Harmsworth.pdf).

<sup>19</sup> New Zealand Ministry for Culture and Heritage Te Manatu Taonga. “Māori Creation Traditions.” Te Ara Encyclopedia of New Zealand – Te Ara Encyclopedia of New Zealand. Ministry for Culture and Heritage Te Manatu Taonga, February 21, 2019. <https://teara.govt.nz/en/maori-creation-traditions>.

<sup>20</sup> Hayes Selwyn, “Defining kaitiakitanga and the Resource Management Act.” Auckland University Law Review. Accessed July 14, 2020.

accuracy and reliability of Māori IK provided to support or oppose environmental consent applications.<sup>21</sup>

Coexisting with this evolutionary approach is the ecological approach, which focuses on the materialist relationship between humans and the environment. The ecological approach views human societies in the context of a larger natural system and looks at how humans respond to this system.<sup>22</sup> This corresponds to the Māori worldview – understanding how to live within the bounds of the natural world and optimising its resources.

*Mātauranga* Māori is underpinned by kinship relationships between humans and the natural world, allowing them to consider the impacts a specific change will have on a greater natural system. For Māori, the way in which they interact with this system is governed by certain values.

- *Whakapapa* describes the genealogy between humans and ecosystems.
- *Kaitiakitanga*, or guardianship of natural resources, protects them for future use. As stated by Henare and Marsden “the resources of the earth did not belong to man but rather, man belonged to the earth”.<sup>23</sup> This is echoed by Mead, who notes: “for Māori the land has been handed down the *whakapapa* line from generation to

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<sup>21</sup> Esvelt, Kevin. “Weaving Indigenous Knowledge and Science in Environmental Decision Making.” MIT Media Lab. Accessed September 10, 2020. <https://www.media.mit.edu/events/weaving-indigenous-knowledge-and-science-in-environmental-decision-making/>.

<sup>22</sup> Upadhyay, Prakash. “[PDF] Anthropological Perspectives on Natural Resources Management, Climate Change and Global Warming: From Quandary to Actions: Semantic Scholar.” undefined, January 1, 1970. <https://www.semanticscholar.org/paper/Anthropological-Perspectives-on-Natural-Resources-Upadhyay/dd689c0dd9bd61459d3edf4c90ba2f9238335fbb>.

<sup>23</sup> Marsden, Māori. “Kaitiakitanga : a Definitive Introduction to the Holistic World View of the Māori / M. Marsden & T.A. Henare.: National Library of New Zealand.” Kaitiakitanga : a definitive introduc... | Items | National Library of New Zealand | National Library of New Zealand. [Wellington, N.Z. : Ministry for the Environment, 1992], January 1, 1992. <https://natlib.govt.nz/records/22166473?search%5B%5D%5Bcreator%5D=Marsden%2C+Ma%CC%84ori>.

generation, but the descendent fortunate enough to own the land does not really 'own it', but rather one belongs to the land".<sup>24</sup>

- *Mauri*, the life force of all elements of the natural world are preserved through guardianship – it is a measure of sustainability. When an element loses *mauri*, for example through over exploitation, it affects the surrounding elements and the whole system is affected.
- *Kaupapa* and *taatai* are protocols governing Māori responsibilities for the environment and must be followed during resource management considerations.
- Lastly, *mana* is authority or status, and those with *mana* can influence resource management. *Mana* is either inherited or earned and is vital in passing on *whakapapa*.

This anthropological perspective provides valuable insights into Māori cultural values and beliefs, however in today's society, where scientism is a dominating viewpoint, scepticism still exists. The motives for the Māori approach to the natural world may be understood, but where multi-cultural societies co-exist, dominant logical frameworks and metrics (including monetary values) may not fully capture indigenous values nor lead to better environmental practices.

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<sup>24</sup> Mead, Sidney M. Essay. "In *Tikanga Māori: Living by Māori Values*, 208. Wellington, Aotearoa New Zealand: Te Whare Wānanga o Awanuiārangi", 2016.

## 6. Environmental Systems & Societies Perspective - Māori as Guardians of the Environment

The two major categories of environmental philosophies are the ecocentric and anthropocentric worldviews. The ecocentric worldview is nature-centered, 'which respects the rights of nature and the dependence of humans on nature so has a holistic view of life'.<sup>25</sup> The anthropocentric worldview is human-centered, 'in which humans are not dependent on nature but nature is there to benefit humankind'.<sup>26</sup> Ecocentrism promotes ecological awareness and stresses the importance of preserving natural resources for future generations. This encompasses the concept of *kaitiakitanga* which the Māori have always exercised.

A sound knowledge of the interrelationships between all living and non-living things enabled Māori to recognize the detrimental effects of over-use of natural resources, and how sustainable management of individual resources would result in the sustainability of the entire ecosystem. Māori preserve the ecological integrity of the environment because life depends on geological processes and geomorphology to sustain it.<sup>27</sup>

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<sup>25</sup> Rutherford, Jill, and Gillian Williams. *IB Environmental Systems and Societies*. Oxford: Oxford University Press, 2015.

<sup>26</sup> *Ibid*

<sup>27</sup> "Why Ecocentrism Is the Key Pathway to Sustainability." MAHB, July 3, 2017. <https://mahb.stanford.edu/blog/statement-ecocentrism/>.

*Toitū te marae a Tāne-Mahuta*

*Toitū te marae a Tangaroa*

*Toitū te tangata*

*If the land is well and the sea is well  
the people will thrive*

*Traditional Māori proverb*

Vast amounts of IK related to sustainable resource use have been developed over centuries, through observation and interaction. This has required an in-depth understanding of the biological needs of various species – how they produced and reproduced, different plants and animals which they relied on for survival, life cycles and the basic interactions between species in the ecosystem.<sup>28</sup> From this thorough understanding of the interrelationships within the natural environment stemmed sustainable harvesting and associated skills for resource management. Examples of Māori IK concepts that promote environmental sustainability include:

Appointing *kaitiaki* (guardians) to protect resources and natural heritage. Māori tribes living along the Whanganui River in the North Island appointed *kaitiaki* to set customary fishing rules consistent with traditional practices. They are responsible for managing fishing in their *rohe moana* (defined customary fishing area), monitoring and reporting on catch rates.

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<sup>28</sup> Garth, Harmsworth. "Indigenous Knowledge for Natural Resource Management: A Comparative Study of Māori in New Zealand and Dusun in Brunei Darussalam." ResearchGate. Accessed July 20, 2020. [https://www.researchgate.net/publication/225718452\\_Indigenous\\_knowledge\\_for\\_natural\\_resource\\_management\\_A\\_comparative\\_study\\_of\\_Maori\\_in\\_New\\_Zealand\\_and\\_Dusun\\_in\\_Brunei\\_Darussalam](https://www.researchgate.net/publication/225718452_Indigenous_knowledge_for_natural_resource_management_A_comparative_study_of_Maori_in_New_Zealand_and_Dusun_in_Brunei_Darussalam).

Placing **Rāhui**, temporary bans on a particular resource or area that has been over utilised so it can replenish itself. In response to the survey questionnaire, the Auckland Regional Council provided an example where local *iwi* (tribes) placed a temporary ban on public use of certain nearby forests to protect Kauri trees from Kauri dieback disease, which had spread to 19% of the native conifers, enabling the species to regenerate.

**Tapu** is a spiritual restriction imposed to protect natural resources and the environment from human exploitation. For instance, *pounamu* (New Zealand jade) is a valued stone found in parts of the South Island and is *tapu*. The local Ngai Tahu tribe laid claim to all *pounamu* under the Treaty of Waitangi, which led to the Pounamu Resource Management Plan (1997) which seeks to protect it for use in traditional carvings only.<sup>29</sup>

**Karakia** is a ritualistic chant used to invoke spiritual guidance and protection of a resource. A *karakia* was performed for lake Waikare by local *iwi* to demonstrate the lake's importance to them, and the for the need to work collaboratively with the Waikato Regional Council to ensure its protection.<sup>30</sup>

**Maramataka** is the Māori lunar calendar, and is used to guide planting, harvesting, fishing and hunting. Knowing the right time and season to harvest is important to

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<sup>29</sup> "Pounamu – jade or greenstone." Accessed August 3, 2020. <https://teara.govt.nz/en/pounamu-jade-or-greenstone/print>.

<sup>30</sup> "Karakia for Lake Waikare Management." Scoop. Accessed August 3, 2020. <https://www.scoop.co.nz/stories/AK1409/S00441/karakia-for-lake-waikare-management.htm>.

maintain production and quality of resource. The Bay of Plenty Regional Council cited in their survey response a social enterprise (Kai Rotorua) that uses *maramataka* to guide planting of kūmara (sweet potato) for the local community.

These examples clearly show that Māori continue to practise environmental protection in a range of forms throughout New Zealand, but the next section explores the extent to which it is acknowledged and applied at scale in national environmental policy.

## **7. Incorporating Māori Indigenous Knowledge into Environmental Policy**

The reform of natural resource management in New Zealand during the 1990's, specifically the 1991 Resource Management Act (RMA), has offered a way forward for Māori participation in the statutory application of natural resource management.<sup>31</sup> The Act is a vast document covering a broad variety of issues, with particular regard to Māori values and stipulations. The principles of the Act direct decision-makers to think about Māori values, practices and interests. They include: having particular regard for *kaitiakitanga*; taking into account the principles of the Treaty of Waitangi; and recognising and providing for the relationship Māori IK has with ancestral lands, water, sites and other property. Six of the regional councils surveyed stated that specific measures, beyond the requirements of the RMA, are now explicitly put in place to ensure that the legislative process provides Māori with opportunities for increased participation. The Waikato Region stated that they “consult with tribal authorities within the region as a vital part of the resource planning process”, because of their importance in the region in terms of

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<sup>31</sup> Latimer, Tina. “Māori Involvement in Natural Resource Management in Aotearoa New Zealand : Do Statutory Processes Create Benefits? 1 / 180,” 2011. [https://mro.massey.ac.nz/bitstream/handle/10179/3038/02\\_whole.pdf](https://mro.massey.ac.nz/bitstream/handle/10179/3038/02_whole.pdf).



population, as users and guardians of local natural resources, and their interests as land owners.<sup>32</sup> The Wellington Regional Council ensures projects are “aimed at building capacity and capability within *iwi*” as well as supporting the *rangatahi kaitiaki* (young Māori guardians) programs. These primary research findings support the notion of increased recognition for Māori IK within regional council contexts.

Incorporating Māori values into legislation has undoubtedly led to environment-related changes in proposed regional activities. The specific examples below indicate the extent of the impact that consideration of Māori values has had on some resource management decisions.

The Whanganui Regional Council provided an example of how local *iwi* succeeded in changing a natural resource policy. In 2008, a deed of agreement of the controversial Foreshore and Seabed Act (2004) was signed between the *Ngati Porou iwi* from the East Coast of the North Island and the Crown. The Act originally secured ownership of New Zealand’s foreshore and seabed to the Crown, but *Ngati Porou* argued they had customary rights under the Treaty of Waitangi. Four years after the Act was passed into law, the 2008 agreement now acknowledges the tribe as the *kaitiaki* over their local coastal areas and protects their customary rights as well as public access rights. The agreement means the *Ngati Porou iwi* have “a greater hand in environmental decisions made by government”.<sup>33</sup>

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<sup>32</sup> “Māori Engagement Framework - Waikato Regional Council.” Accessed July 19, 2020. <https://www.waikatoregion.govt.nz/assets/WRC/Council/Policy-and-Plans/11340016-Maori-Engagement-Framework-Guide.pdf>.

<sup>33</sup> “East Coast Iwi Descend on Parliament for Deed Signing - NZ ...” Accessed September 10, 2020. [https://www.nzherald.co.nz/nz/news/article.cfm?c\\_id=1&objectid=10540363](https://www.nzherald.co.nz/nz/news/article.cfm?c_id=1&objectid=10540363).

This example shows how the concept of *kaitiakitanga* is being considered within a political context and can influence natural resource decision making.

In the pursuit of the protection of nature, environmental personhood has also emerged as a concept. In the Whanganui region once again, an agreement between the Māori of the Whanganui river and local government recognised the river as a living entity with the same legal rights as a human being.<sup>34</sup> The Māori ancestral lineage with the river, the *whakapapa*, was reviewed and eventually incorporated into the personhood legislation. The Whanganui river now has its own legal rights and status, meaning it can bring legal action against any abuse or threat to its waters, such as pollution. Establishing environmental personhood has prevented unauthorised activities and encouraged sustainable water use in local catchments.

Another example is 'New Zealand's Threatened Species Strategy' which seeks to make New Zealand predator free by 2050.<sup>35</sup> The strategy's authors from the Department of Conservation stress the importance of integrating Māori IK into the pest eradication plans and species recovery program: "we will embrace the principles of *kaitiakitanga* to best protect those native species that are most at risk".

A final example of Māori IK in policy is the Māori wetland indicators program, which was developed as part of the national 'Coordinated monitoring of New Zealand Wetlands'

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<sup>34</sup> Evans, Kate. "Travel - The New Zealand River That Became a Legal Person." BBC. BBC, March 20, 2020. <http://www.bbc.com/travel/story/20200319-the-new-zealand-river-that-became-a-legal-person>.

<sup>35</sup> Harmsworth, Garth. "Coordinated Monitoring of New Zealand Wetlands, Phase 2 ..." Accessed September 6, 2020. <https://www.pacificwater.org/userfiles/file/IWRM/Toolboxes/m%20&%20e/Wetland2Report.pdf>.

project.<sup>36</sup> The aim was to create a Māori-based monitoring approach for evaluating wetland health, together with a set of indicators based on Māori IK, such as the extent and abundance of *taonga* (treasured) wetland flora and fauna. The incorporation of these indicators helps measure trends and assess progress of wetland rehabilitation and restoration.

In contrast to the above, the case of *Haddon v Auckland Regional Council* (1994), is an example of how Māori values can sometimes be misunderstood. New Zealand's Environment Court had considered resource consent from Haddon and local tribes for the removal of sand from Pakiri Bay to replenish sand at nearby Mission Bay. Although local Māori objected, the court recognised their role as guardians but granted the removal anyway, proposing royalties be paid as compensation.<sup>37</sup> The case shows how the concept of *kaitiakitanga* can be misunderstood. Māori values are not readily open to trade-offs – the *mauri* of resources cannot be protected by way of compensation, as might be acceptable from an anthropocentric viewpoint.

The case of *Wakatu Inc. v Tasman District Council* is another demonstration of Māori IK being misinterpreted. The case concerned extraction of water from the Motueka River for domestic water supply. Local *iwi* argued that transporting the water outside their territory would violate the *mauri* of the river and prevent *iwi* from exercising *kaitiakitanga*. The court upheld the resource consent, stating that Māori metaphysical concepts lacked evidence of

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<sup>36</sup> "New Zealand's Threatened Species Strategy." Accessed September 6, 2020.  
<https://www.doc.govt.nz/contentassets/97142dceee6b4f0e95a625ab4fa58dfc/threatened-species-strategy-draft.pdf>.

<sup>37</sup> Hyunah22. "Haddon v Auckland Regional Council 1994 Pakiri Beach Sand to Mission Bay and: Course Hero." Haddon v Auckland Regional Council 1994 Pakiri beach sand to Mission Bay and | Course Hero. Accessed August 20, 2020.  
<https://www.coursehero.com/file/pul7ul/Haddon-v-Auckland-Regional-Council-1994-Pakiri-beach-sand-to-Mission-Bay-and/>

direct physical effect. This decision reduced the concept of *mauri* to something that must be scientifically quantified, which is inconsistent with Māori cultural values. The case shows that while legislation allows for consideration of Māori values, that consideration requires a full understanding of the Māori worldview.<sup>38</sup>

Māori representation and incorporation in New Zealand resource management continues to develop and evolve. Evidence suggests there is increased collaboration between Māori and local government, where constructive engagement frameworks have been created and are being continually implemented. Although the context of Māori participation sits within a western framework, a more holistic approach to natural resource management decision-making is emerging. However, while my triangulation of primary and secondary sources undertaken for this research provides qualitative evidence of increased consideration of Māori IK, there is less measurable evidence showing the extent to which environmental sustainability has improved as a result. I think the success of the collaborative processes needs to be measured and evaluated over a longer period of time in order to thoroughly assess overall effectiveness.

In my opinion, the mandatory consultation for local government with Māori is in some cases creating tokenistic collaborations that do not always meet the needs of the indigenous communities. The misconception that Māori IK has a limited scope, that needs to be verified by science for it to be useful, could be addressed by funding Māori-led education programs to enhance non-Māori appreciation of IK. This should lead to greater Māori influence in

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<sup>38</sup> “Māori Law Review.” Incorporating Māori approaches to ecosystem management in marine management – Māori Law Review. Accessed September 12, 2020. <http://maorilawreview.co.nz/2018/07/incorporating-maori-approaches-to-ecosystem-management-in-marine-management/>.

decision-making. Moreover, I think inputs from local *iwi* being reviewed and assessed by Māori IK experts, as well as increased use of Māori sustainability indicators and assessment tools as proof of progress, will promote a better understanding and appreciation for the benefits of Māori IK in environmental sustainability.

## **8. Conclusion**

According to the Māori worldview, humans and all natural elements can be traced back to *Ranganui*, the Sky Father, and *Papatuanuku*, the Earth Mother, through their offspring, which explains the close relationship that Māori have with the environment. The Māori value of *kaitiakitanga*, guardianship of natural resources, promotes sustainable resource use to enable long-term environmental quality. This value, alongside others, is increasingly being acknowledged by policy makers and impacting resource management decisions. Debate remains as to whether current policies and practices are being monitored enough, and for sufficient periods of time, to draw concrete conclusions about the overall effectiveness of greater Māori participation in environmental sustainability issues. Examination through both the anthropological and environmental systems and societies lenses allows us to look at the Māori worldview holistically to see how their values can be interpreted in the context of environmental sustainability. The growing recognition of Māori indigenous knowledge in New Zealand is an essential step towards a more sustainable environment, however it is still a work in progress.

Although this essay focuses on New Zealand, it has broader implications on the way indigenous knowledge is used in resource management decision making all over the world.

Indigenous knowledge and values are becoming increasingly relevant in a complex world, where a more ecocentric perspective is needed to find solutions to global problems. In many areas of the world, we are seeing a realignment of indigenous and western knowledge, forming blended frameworks that draw on both value systems to enhance our understanding of the environment. This essay illustrates how indigenous frameworks and tools can provide the foundation for a more inclusive and effective decision-making process.

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## 10. Appendix

**Table 1: Regional Council Survey Questions**

Question	Intended line of inquiry
1. In New Zealand generally, there has been an awakening for Māori consciousness and revival for Māori indigenous knowledge in the last 30 years. Have you noticed an increase in recognition in your region?	Determine whether or not Māori indigenous knowledge was recognised at the local/regional level.
2. By law, regional councils are required to consult or engage with local Māori or <i>tangata whenua</i> . In addition to public consultations, does your region take any specific measures to ensure Māori are provided with opportunities for increased participation? If so, please specify.	With an increasing trend towards engaging Māori in natural resource decision making, understanding the practical ways in which councils are ensuring their participation is important when evaluating Māori involvement.
3. Could you give an example of when particular insights based on Māori indigenous knowledge significantly changed the nature of a proposed environmental policy/plan/program/project?	Sought to provide more current examples and specific case studies from different regions, in addition to those found in secondary research.
4. Could you give an example of when Māori indigenous knowledge was overlooked, and was subsequently found to have impacted the project's outcome?	Sought to indentify any obvious differences in project outcomes where IK is not considered through the planning and design process.

## Copy of Questionnaire Sent to Regional Councils of new Zealand

	TITLE	QUESTION TYPE	
Q1	In New Zealand generally, there has been an awakening for Māori consciousness and revival for Māori indigenous knowledge in the last 30 years. Have you noticed an increase in recognition in your region?	Multiple Choice	   
Q2	By law, regional councils are required to consult or engage with Māori or tangata whenua. In addition to public consultations, does your region take any specific measures to ensure Māori are provided with opportunities for increased participation?	Multiple Choice	   
Q3	Yes / No, please specify	Essay	   
Q4	Could you give an example of when particular insights based on Māori indigenous knowledge significantly changed the nature of a proposed environmental policy/plan/program/project?	Essay	   
Q5	Could you give an example of when Māori indigenous knowledge was overlooked, and was subsequently found to have impacted the project's outcome?	Essay	   

## Sample response from Waikato Regional Council

P1

tutahanga.douglas@waikato...

Jul 7

[Participant Details](#) >

Council has consultation and engagement arrangements under sustainable management legislation Resource Management Act 1991 and various Treaty of Waitangi claims settlement legislation for example the Waikato-Tainui Raupatu Claims (Waikato River) Settlement Act 2010. The former legislation included Part 2 of the Act which requires local authorities (regional councils and territorial authorities) to recognise and provide for the cultural impact of natural resource use activities that are managed under the Act. There is a duty placed upon these agencies to consult with tribal authorities within their region as part of the resource planning process. Other arrangements in resource planning and consenting processes form part of the legislative arrangements that come out of Treaty of Waitangi claims settlement arrangements with the Crown and tribal authorities.