

**BEFORE COMMISSIONERS APPOINTED BY THE WAIKATO DISTRICT
COUNCIL**

UNDER the Resource Management Act 1991

IN THE MATTER of a further submission on the proposed Waikato District Plan by the
LIFE SCIENCES NETWORK INCORPORATED (further submission no. 1295)

**REBUTTAL EVIDENCE OF WILLIAM ROLLESTON
FOR THE LIFE SCIENCES NETWORK INCORPORATED**

15 January 2020

1. INTRODUCTION

- 1.1. My full name is WILLIAM BLAIR RHODES ROLLESTON. My qualifications and experience are set out in my primary statement of evidence. This statement of rebuttal evidence is prepared with the assistance of LSN expert witnesses Prof Andrew Allan and Dr Tony Conner.
- 1.2. We accept that the proponents of GMO provisions in the District Plan hold sincere views. However many of the assertions made are incorrect or made without appropriate context. In this statement of rebuttal evidence we aim to provide the decision makers with supplementary evidence and comment to ensure there is clarity on the Life Sciences Network view of these assertions.
- 1.3. We have not identified any issue raised by the submitters which would not be considered by the EPA. In particular the assertions made in the evidence statements (Mr Hamilton in paragraphs 6, 9, 18, 19, 23; Ms Bleakley para 14, 17, 18-29; Mr Alexander para 41, 43) are not backed up by credible evidence in this respect. Therefore we have not attempted to rebut every scientific point but rather provide a snapshot of the scientific and technical considerations likely to be addressed by the EPA during any decision making process.
- 1.4. This statement of rebuttal evidence comments on:
 - a. Gene editing of humans and biohacking
 - b. Use of Gene Drives
 - c. Maori Consultation
 - d. Approvals for the Release of GMOs by the EPA/ERMA
 - e. The GE Free Status of New Zealand
 - f. Animal Welfare at Ruakura
 - g. Loss of “GE Free” Markets
 - h. “GE Swedes” in Southland
 - i. Herbicide Resistance (“Superweeds”)
 - j. Placental transfer of DNA

2. Gene editing of humans and biohacking

- 2.1. In paragraph 5-6 and of his evidence Mr Hamilton discusses his concern on gene editing of humans which can be inherited by future generations (gene editing the human germline) and biohacking (para 12).
- 2.2. We would respectfully point out that the moratorium which has been discussed by scientists such as Professor Doudna and Emmanuelle Carpentier is on gene editing the human germ line not on gene editing in general.
- 2.3. Genetically modified humans are excluded from the definition of GMO and the RMA does not discriminate between humans with respect to gender, race or any other genetic distinction so these issues are not pertinent to this hearing.
- 2.4. The described actions of biohackers would be illegal in New Zealand. Use of genetic modification requires approval by the EPA. Controls in the District Plan would add nothing to the illegal status of biohacking.

3. Use of Gene Drives

- 3.1. In paragraphs 6-11 his evidence Mr Hamilton expresses concern on the use of gene drives which is a technique enabled by gene editing to rapidly spread a genetic trait through a species.
- 3.2. Mr Hamilton provides no examples of any adverse effect which would not be considered by the Environmental Protection Authority (EPA) or which would be considered and permitted by the EPA.
- 3.3. At the 2016 UN Biodiversity conference referred to by Mr Hamilton (para 7) New Zealand spoke and voted against a moratorium on gene drive instead advocating for a case by case assessment.^{1,2}
- 3.4. The science, issues and opportunities have already been provided in our further submission and expert evidence including the work done by the Royal Society of New Zealand in their technical paper “The Use of Gene Editing to Create Gene Drives for Pest Control in New Zealand”. (see LSN Further Submission Attachment G)

4. Maori Consultation

- 4.1. In paragraphs 8-11 Mr Hamilton makes several references to the Te Herenga Hui citing Maori opposition.
- 4.2. It should be noted that the Netflix documentary he refers to, also featured a number of hui participants speaking in favour of gene drives.
- 4.3. Mr Hamilton also expresses concern regarding Maori consultation (paragraphs 21 and 26). We attach “Incorporating Māori perspectives in Decision Making” (Attachment 1)
 - 4.3.1. Which states: *“There is no one Māori world view or perspective on resource management matters”* (Summary)
 - 4.3.2. The EPA considers both local and national perspectives:

“Once it has been determined that there are potentially significant impacts on Māori interests, consideration will need to be given to whether those impacts are local or national. The general principle is that if an application will only have impacts of local significance to Māori, then it will be sufficient to engage with those directly affected (such as iwi and hapū of the area and any relevant Māori industry organisations).” (page 25)

¹ Nature News ‘Gene Drive’ Moratorium shot down at UN biodiversity meeting
<https://www.nature.com/news/gene-drive-moratorium-shot-down-at-un-biodiversity-meeting-1.21216>

² <https://www.netflix.com/nz/title/80208910>

5. Approvals for the Release of GMOs by the EPA/ERMA

- 5.1. In paragraph 8 of her evidence Ms Bleakley says there has been only one conditional release approval of a GMO in New Zealand.
- 5.2. This assertion is incorrect. The LSN has already pointed out in its evidence that there have been six approvals for the release of GMOs in New Zealand including one unconditional release (evidence of William Rolleston for the Life Sciences Network para 6.8) and these can be found on the EPA website³.

6. The GE Free Status of New Zealand

- 6.1. In paragraph 10 of her evidence Ms Bleakley says: “*All foods grown in New Zealand are not produced from genetic engineering techniques.*”
- 6.2. This statement is misleading. It is true that there are no food-producing plants/animals released in New Zealand for the production of food. However this does not mean New Zealand is GE Free. In 2009 the Commerce Committee upheld a complaint by Zelka Grammer of GE Free Northland that Ingham’s Enterprises (NZ) Pty Ltd were incorrectly claiming their chickens contained no GM ingredients when the imported feed used was derived from GM plants⁴. GM enzymes are used in cheese production, GM soymeal and GM cotton meal are imported for use as animal feed and animal vaccines may also be used in New Zealand which are produced using genetic modification.
- 6.3. There have been six releases of GM organisms approved for use in New Zealand, some of these have been used. GM petunias have been inadvertently sold in New Zealand since 2014⁵ and there is no evidence that these plants have been eradicated from New Zealand. GE Free NZ also claim numerous breaches of the GM containment conditions which if they were to have had any environmental effect would mean self-sustaining populations of these field trial organisms would be growing in New Zealand (we would however point out that there is no evidence this is the case).

³ <https://www.epa.govt.nz/database-search/hsno-application-register/DatabaseSearchForm/?SiteDatabaseSearchFilters=33&Keyword=&DatabaseType=HSNO&ApplicationType=GM+Release>

⁴ <https://comcom.govt.nz/news-and-media/media-releases/archive/inghams-warned-over-gm-free-chicken-claims>

⁵ <https://www.mpi.govt.nz/news-and-resources/media-releases/unauthorised-gm-petunias-may-be-in-new-zealand/>

7. Animal Welfare at Ruakura

- 7.1. Ms Bleakley (para 16) and Mr Rowson (para 26-27) express concern at the animal welfare outcomes at AgResearch Ruakura.
- 7.2. All animal experiments including those using GM must, under the Animal Welfare Act 1999, be approved and monitored by an Animal Ethics Committee which include outside appointees including a lay person, a veterinarian and a representative of an animal welfare organisation (e.g. SPCA or SAFE) who must weigh the benefits of any research against the welfare of the animal.
- 7.3. The Report cited (written by Ms Bleakley) is not scientific nor objective. It uses emotive language to make its points. In a statement to Radio New Zealand⁶ AgResearch manager Dr David Wells attributed many of the issues raised to cloning – a technique which is not the subject of this hearing. He described the report as one-sided.
- 7.4. In a statement from AgResearch they say:

“AgResearch conducts gene editing and genetic modification research at our Hamilton (Ruakura) research centre which hosts a modern MPI-accredited animal containment facility. Our public good research adheres to Environmental Protection Agency guidelines, audits and annual reporting standards protocols in accordance with the Hazardous Substances and New Organisms Act 1996 (HSNO Act).

“Furthermore, our scientists are world leaders and office holders in securing ethical, humane and high-quality laboratory animal science rules and standards and our scientists have also made a positive contribution to enhanced scientific understanding and strengthened GM safety standards through the publication of numerous widely cited academic papers in scientific journals.” (personal communication)

8. Loss of “GE Free” Markets

- 8.1. In paragraphs 15-19 of his evidence Jesiah Alexander states that the use of GM in the Waikato would “*immediately threaten*” his market, adding cost and would likely result in the loss of his organic certification and business and in paragraphs 32-33 of her evidence Ms Bleakley asserts “*farmers and horticulturalists rely on the ability to produce GMO Free dairy and horticultural produce for national and international markets.*” And “*Any release to the environment of viable GMO crops or plants would jeopardise the economic livelihoods of many businesses and farmers reliant on being GM/GE Free.*”
- 8.2. We consider these comments overstate the situation with respect to certification and marketing. While import standards and some certifiers have tolerance levels for the presence of GM product and/or inputs, others seek to avoid the deliberate use of GM.

⁶ <https://www.rnz.co.nz/news/national/287773/transgenic-cow-research-branded-a-%27disaster%27>

8.3. Biogro (one of New Zealand’s private organic certifiers) prohibits⁷ the use of genetic modification in animal production, however it does recognise that 100% assurance even in New Zealand today is unrealistic. It states⁸ (p27):

“Claims such as “GE Free”, “GM Free”, and “GMO Free” cannot be used on the product or label in the context of the product’s certified organic status, as this could be taken to imply that all ingredients of the product have been exhaustively tested as part of its organic certification process to guarantee zero presence of GMO contamination. This may not always be possible or practical. Any reference to genetic engineering in the context of the product’s certified organic status must be limited to the production and processing methods having specifically excluded the use of GMOs. Examples of claims which can be made in this way are “GE not used”, “GM not used”, “No GMOs used”, or similar.”

8.4. IFOAM (The International Federation of Organic Agriculture Movements), the organic movement’s peak body, states on its website⁹:

*“The organic label therefore provides an assurance that GMOs have not been used **intentionally** in the production and processing of the organic products.”*

8.5. We have already indicated in our evidence that there are GM tolerance levels for international trade, labelling, certification (Non-GM project), and at customer level.

8.6. As Professor Grimes pointed out in his expert evidence there is a loss from the prohibition of new technologies. Specifically the prohibition of GM Crops jeopardises the livelihoods of all current and future businesses and farmers who rely on producing food/crops (other than those who wish to remain GMO-free). He makes the point that it is not appropriate for policy makers to adopt policies that protect only the interests of a group who wish to prevent technological changes that would improve outcomes for other people.

9. “GE Swedes” in Southland

9.1. In paragraph 19 of his evidence Mr Rowson says *“I have followed the experience of many farmers in Southland who suffered huge losses after their animals grazed GE swedes, developed from New Breeding Techniques (NBT)”*.

9.2. It is incorrect to claim the swedes were genetically engineered (GE). There have been no GE Swedes in NZ (or worldwide). The losses were due to a new cultivar produced with non-GM techniques that have been commonly used for over 70 years.

⁷ Biogro Livestock Production Standard.

https://static1.squarespace.com/static/5783012e1b631b1a87b5f0de/t/5bb4319d4192028ea0c2f262/1538535848737/Module_5_Livestock_May+2009.pdf

⁸ Biogro Certification System

https://static1.squarespace.com/static/5783012e1b631b1a87b5f0de/t/5bb42eb4f9619a6ba2fb988f/1538535104654/Module_3_Certification_System_May+2009.pdf

⁹ IFOAM “Organic Basics”

<https://www.ifoam.bio/en/our-library/organic-basics>

10. Herbicide Resistance (“Superweeds”)

- 10.1. In paragraph 41 of his evidence Mr Alexander comments on the development of herbicide resistant weeds (“superweeds”) and includes a report compiled by Food and Water Watch.
- 10.2. Herbicide resistance in plants is not an outcome of genetic modification per se but of the use of herbicide. In New Zealand for example glyphosate resistant ryegrass has been detected in the Nelson area where orchards and roadsides are repeatedly sprayed with Roundup. Roundup resistant ryegrass has been a problem in Australia independent of the use of genetic modification there. Insect resistance to organic BT sprays has been observed in insects where organic farmers repeatedly use these sprays to control insects.
- 10.3. Many GM crops (e.g. BT insect resistant varieties) are designed to reduce pesticide use.

11. Placental transfer of DNA

- 11.1. In paragraph 41 of his evidence Mr Rowson raises concerns regarding the placental transfer of GM foetal blood into the dam’s blood.
- 11.2. Mr Rowson gives no basis for these concerns and we note in the paper that “In our studies, all recipients of Tg [transgenic/GMO] embryos are under strict regulatory controls and are treated as Tg animals. They have to be kept in a physical containment facility and cannot enter the human food chain.” (p487)

12. Field Trial Breaches

- 12.1. In paragraphs 18-29 of her evidence Ms Bleakley raises concerns regarding breaches in laboratory and field trial controls. In particular she says “*MAF Biosecurity, who was called in to look into any threat that the breach might have posed, considered both of these incidents a biosecurity risk.*” (para 23)
- 12.2. We point to the following quotes from the incident report referred to:

“Claims made by environmental lobby groups that the Scion field test was not being managed properly, or monitored adequately for compliance, were also investigated. On investigation, however, no evidence was found to support these claims.” (Executive Summary)
- 12.3. There is nothing in this report to back up Ms Bleakley’s assertion that “*MAF Biosecurity .. considered both these incidents a biosecurity risk.*”
- 12.4. We also point out that contrary to Ms Bleakley’s assertion (para 25) regarding the Plant and Food trial the ERMA enquiry found “*No significant risk to the environment was identified by MAF.*” (ERMA Report, para 4). The trial was closed voluntarily by Plant and Food not by the regulator as implied by Ms Bleakley.

William Rolleston

15 January 2020



INCORPORATING MĀORI PERSPECTIVES INTO DECISION MAKING



Incorporating Māori perspectives into decision making

About this protocol

This protocol has been developed by Ngā Kaihautū Tikanga Taiao, the statutory Māori Advisory Committee of the Environmental Protection Authority (EPA).

As a decision-making authority, the EPA uses several protocols to aid decision makers in producing consistent, high-quality decisions. Ngā Kaihautū Tikanga Taiao is required to provide advice and assistance to the EPA on matters relating to policy, process and decisions of the EPA.

The intention of the protocol is for it to be used by decision makers (as representatives of the EPA) as a tool to incorporate Māori perspectives appropriately into any decision making. This protocol is also intended to be used by iwi, Māori and applicants to understand how a Māori perspective is considered in decision making. Further, both applicants and Māori can use it to assist with the preparation of applications to the EPA to ensure a full and complete application has been lodged.

Areas covered in this protocol include Te Tiriti o Waitangi (The Treaty of Waitangi) obligations, Ngā Kaihautū Tikanga Taiao, impact on Māori, outcomes of significance to Māori, identifying and assessing risk and effects and engagement with Māori.

It should be noted that this protocol is intended to be a 'living document', and will continue to be refined as further information or insights into the EPA's decision-making process become available, and as new case law is developed in New Zealand or internationally. This document is to support the EPA with its obligations under the Environmental Protection Authority Act 2011.

Executive summary

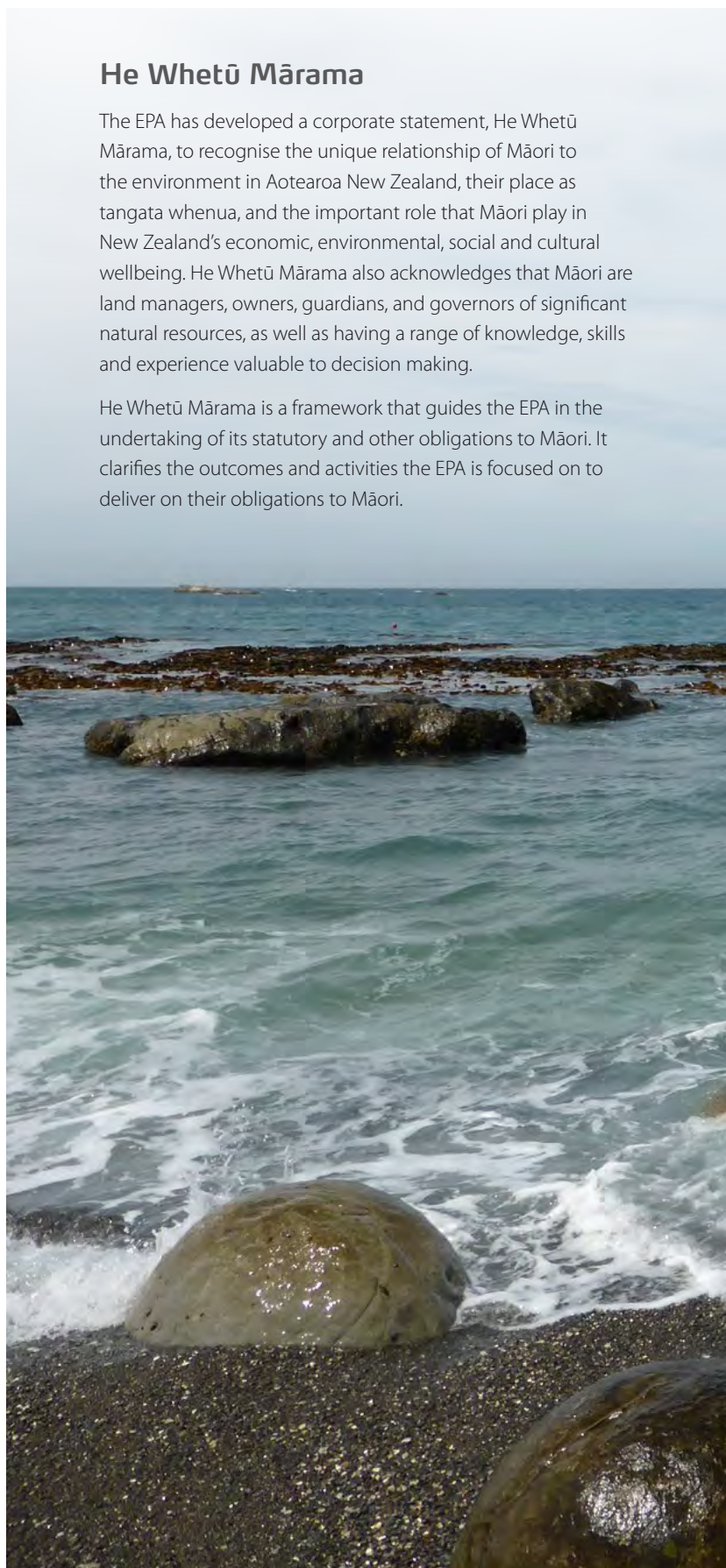
There is no one Māori¹ world view or perspective on resource management matters. Ngā Kaihautū Tikanga Taiao recognises that the Māori perspective varies and differs between different iwi, hapū, marae, and whānau. It is also acknowledged that Māori have a unique perspective on environmental issues that has developed over many generations, through observation and experience. This perspective has evolved to the point where the very identity of Māori and their way of doing things, or tikanga, is inextricably intertwined with the environment, leading Māori to have an ingrained determination to safeguard and care for New Zealand's resources for future generations.

The EPA has a number of statutory obligations to Māori both under the EPA Act by which it was established and under a number of the other Acts and regulations it is responsible for. Developing a partnership between the EPA and Māori is a step in attaining mutually beneficial goals. The goal for the EPA is to realise the vision of a protected environment which will enhance our way of life and economy. For Māori, the goal is, as part of their responsibility as kaitiaki, to ensure the protection of environmental, economic, cultural and spiritual health and their own wellbeing in the present and for future generations.

He Whetū Mārama

The EPA has developed a corporate statement, He Whetū Mārama, to recognise the unique relationship of Māori to the environment in Aotearoa New Zealand, their place as tangata whenua, and the important role that Māori play in New Zealand's economic, environmental, social and cultural wellbeing. He Whetū Mārama also acknowledges that Māori are land managers, owners, guardians, and governors of significant natural resources, as well as having a range of knowledge, skills and experience valuable to decision making.

He Whetū Mārama is a framework that guides the EPA in the undertaking of its statutory and other obligations to Māori. It clarifies the outcomes and activities the EPA is focused on to deliver on their obligations to Māori.



¹ For the purpose of this protocol 'Māori' is taken to mean tangata whenua, mana whenua, mana moana or other iwi, hapū or Māori organisational entities of relevance to the activity proposed.



Informed decision making

EPA policy, process and decision making is fully and effectively informed by Māori perspectives.

Effectively incorporating Māori perspectives into EPA decision making requires Māori to have an appropriate level of input, influence and information. Achieving this means the capability and capacity of EPA staff and decision makers needs to be developed to ensure they have an understanding of the unique and distinct world views of Māori and their cultural protocols and identity. This protocol provides the foundation for building that capability and capacity and enabling the EPA to provide a better service to Māori and reflect a partnership approach.

Productive relationships

The EPA maintains relationships that ensure Māori are productively involved in its decision making and associated activities.

Achieving this outcome requires recognition that for relationships to be productive, enduring and effective they require investment and maintenance. As well as establishing and maintaining relationships with key Māori groups, the EPA will also support the development of relationships between applicants and Māori. This protocol provides a base knowledge of what applicants should consider when engaging with the EPA and Māori on matters relating to Māori.



He Whetū Mārama

He Whetū Mārama – he anga ki te ārahi i Te Mana Rauhi Taiao i roto i ana herenga ā ture me ētahi atu herenga ki a Ngāi Māori.

Wawata

Ka whai mōhio i ā Mana Rauhi Taiao whakatau i te hononga ake, i te hononga motuhake a Ngāi Māori ki te taiao.

Mātāpono

Ka ārahia He Whetū Mārama e ngā mātāpono e whā o Te Tiriti o Waitangi.

WAKA HOURUA

Whakahere i te Mana Rauhi Taiao kia mau tūturu me te whakapono ki ngā whakaritenga a Ngāi Māori i runga i te waka hourua.

TIAKITANGA

Whakahere i te Mana Rauhi Taiao kia pono i te hīkoi tapuwae, arā, kia mau te tiakitanga i ngā painga, i ngā matatau, i ngā wheako a Ngāi Māori i roto i te tohu whakatau.

WHAI WĀHI

Tohua te whai wāhi mā te whakawhanake i ngā mahere, i ngā whakaritenga, hei tuku i te whakapiri tōtika a te mana o Ngāi Māori.

PITO MATA

Whai mōhio, whakamārama ngā tohu whakatau me ngā ngangahau a te Mana Rauhi Taiao i te pito mata papātanga ki ngā hua tikanga-ā-iwi me te tūāpapa a ngā hua ohanga.

Tukunga Iho

Ko te pito mata a te whai wāhi mā te tiakitanga o te waka hourua.

WHAI MŌHIO WHAKATAU

Kei te whai mōhio te Mana Rauhi Taiao ki ngā whakaritenga Māori.

- Aromatawai i ngā tono me ngā whakarite Tikanga-ā-Iwi me te Tiriti o Waitangi.
- Ko te whakamaherehere me te aromatawai a Ngā Kaihautū i ngā whakatau whānui me ngā tono-ā-kaupapa.
- Ka whakaharatau, ka ārahi i ngā kaiwhakatau me ngā kaimahi ki te tautoko i te tāpaetanga a ngā whakaritenga Māori.
- Ko ngā whakahaere whakaritenga, ko ngā tukunga me ngā aratohu, koia nei te whakarato i te whakatōtika a te whaikuru a Ngāi Māori.

HAUKAMO HONONGA / TAUNEKENEKE

Kei te whakamau te Mana Rauhi Taiao ki ngā whanaungatanga kia tūturu ai Ngāi Māori i te mahi whakatau me ana ngangahau.

- Ko te whakawhanaungatanga me te whakapiri tūāpā ki ngā kaitono me ā rātou ahumahi.
- Kia tika te hoe a te waka hourua.
- Tiaki ā nahanaha, ā whakahaere i Te Herenga.
- Ka ako, ka aratohu i ngā kaitono.
- Ka ako, ka aratohu i a Ngāi Māori.

He Whetū Mārama

He Whetū Mārama is a framework that guides the Environmental Protection Authority in the undertaking of its statutory and other obligations to Māori.

Wawata

The unique relationship of Māori to the environment informs EPA decision making.

Mātāpono

He Whetū Mārama is guided by four key Treaty of Waitangi principles.

The principle of **PARTNERSHIP** requires that the EPA acts reasonably, honourably, and in good faith to ensure the making of informed decisions on matters affecting the interests of Māori.

The principle of active **PROTECTION** requires the EPA to take positive steps to ensure that Māori interests, knowledge, and experience are valued in its decision making and activities.

The principle of **PARTICIPATION** informs the development of EPA strategy, policy, and process that enables the effective engagement and input of Māori.

The principle of **POTENTIAL** recognises that EPA decision making and activities have impacts on the direction for future growth and development in a Māori cultural and economic setting.

Tukunga Iho

INFORMED DECISION MAKING

EPA policy, process, and decision making is fully and effectively informed by Māori perspectives.

- Cultural and Treaty assessment of applications and proposals.
- Ngā Kaihautū advice and assessment of the decision-making process generally and for specific applications or proposals.
- Decision-maker and staff training and guidance to support the effective input of Māori perspectives.
- Operational policy, process, and guidelines that provide for the effective involvement of Māori.

PRODUCTIVE RELATIONSHIPS

The EPA maintains relationships that ensure Māori are productively involved in its decision making and associated activities.

- Applicant and industry relationship management and engagement facilitation.
- Iwi partnership management.
- Te Herenga maintenance and management.
- Applicant training and guidance.
- Māori training and guidance.

Decision making considerations

The primary users of this protocol will be the EPA Board, EPA decision-making committees, the Hazardous Substances and New Organisms Committee, Ngā Kaihautū Tikanga Taiao and EPA staff. The secondary users of this protocol may include applicants and Māori groups who wish to clarify how any Māori and Te Tiriti o Waitangi (The Treaty of Waitangi) interests are to be considered in applications.

Incorporating Māori perspectives into EPA decision making requires that the points outlined in this section are considered.

Appointing experts

Under Ngā Kaihautū Tikanga Taiao Terms of Reference, if an application raises issues of particular significance to Māori, Ngā Kaihautū Tikanga Taiao may provide independent advice to inform decision making. The EPA may also appoint people with specific expertise to the decision-making committee to consider such applications, and will look to Ngā Kaihautū Tikanga Taiao as the primary source of advice for nominations to the committee.

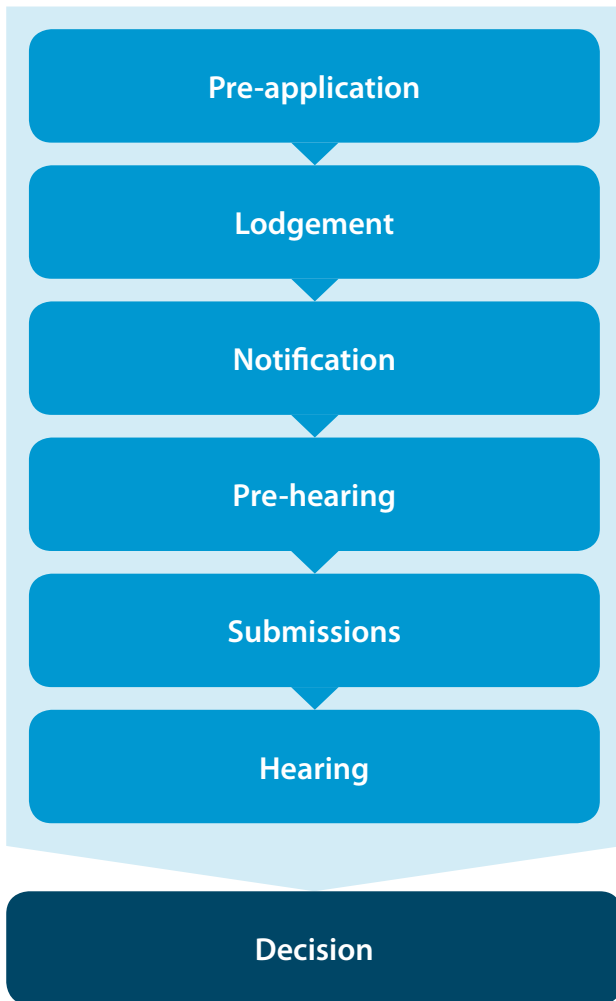
Ngā Kaihautū Tikanga Taiao may recommend that one or more of its own members or external Māori experts be appointed. Appointments will be made on the basis of the need for relevant expertise, inclusive of tikanga Māori, mātauranga Māori (Māori Knowledge) and Te Tiriti o Waitangi (The Treaty of Waitangi).

Access by Māori

The EPA will try to ensure that Māori have appropriate access to its decision-making processes. The EPA will accept submissions and representations to hearings given in te reo Māori, and will give consideration to submissions expressed in accordance with tikanga Māori. Submitters can present jointly, and call people to present evidence to support their submission at hearings. New issues outside the original submission cannot be raised.



Figure 1.0 Opportunities for engagement



The processing of notified applications to the EPA follows the path outlined above.

Applicants should note that pre-lodgement engagement with Māori may also be advisable for some non-notified applications. Any relevant information provided by Māori for a non-notified application as a result of that engagement should be considered in the same way as for a notified application. Note that best practice engagement and consultation processes generally occur pre-lodgement.

Section 1	Te Tiriti o Waitangi (The Treaty of Waitangi) obligations Consideration of Te Tiriti o Waitangi (The Treaty of Waitangi) and its obligations when incorporating a Māori perspective into decision making.
Section 2	Ngā Kaihautū Tikanga Taiao Reports or advice provided by Ngā Kaihautū Tikanga Taiao, the EPA's Statutory Māori Advisory Committee, should be considered along with information provided from other sources.
Section 3	Impact on Māori The impact that any application will have on the capacity and capability of Māori to provide for their own environmental, economic, social and cultural well-being in the present and for the reasonably foreseeable future.
Section 4	Outcomes of significance to Māori The impact any application will have on relationships between Māori and their traditional and contemporary knowledge systems, cultural concepts, ancestral lands, waters, historical sites, wāhi tapu, valued flora and fauna, and other taonga.
Section 5	Identifying and assessing effects (risks and benefits) Whether any effects (direct or indirect) on Māori have been identified by the applicant or by Māori, and the level of controls or remedies that have been proposed to mitigate risks or enhance benefits.
Section 6	Engagement with Māori Decision makers should consider the effectiveness of any engagement undertaken for applications that have potentially significant effects on Māori, and whether adequate information is provided for the decision making processes.
Section 7	Appendices

SECTION 1

Te Tiriti o Waitangi (The Treaty of Waitangi) obligations

The purpose of this section is to understand how Te Tiriti o Waitangi (The Treaty of Waitangi) and its obligations are considered when incorporating a Māori perspective into decision making.

This section links to Ngā Kaihautū Tikanga Taiao's objectives:

- Uphold tikanga and the use of mātauranga Māori
- Recognise Māori rights and interests under Te Tiriti o Waitangi (The Treaty of Waitangi)
- Acknowledge the role of tangata whenua



The EPA is required under section 4 of the EPA Act to recognise and respect the Crown's responsibility to take appropriate account of Te Tiriti o Waitangi (The Treaty of Waitangi) by giving effect to requirements under the environmental Acts for which the EPA is responsible. Some of those environmental Acts require the EPA to take into account the principles of the Te Tiriti o Waitangi (The Treaty of Waitangi), which may involve:

- establishing relationships with Māori which are in the nature of partnership, having regard to the other requirements of the Act
- acting reasonably, honourably and in good faith
- recognising the capacity of hapū and iwi to exercise authority over their own affairs
- making informed decisions on matters affecting the interests of Māori
- actively protecting Māori interests as far as is reasonably practicable
- recognising that benefits should accrue to both Māori and non-Māori.

Resource Management Act 1991 (RMA)

Purpose	To promote the sustainable management of natural and physical resources. The RMA also regulates the effects of human activities on the environment.
Relevance to Māori	RMA provisions encourage Māori participation in the management of natural and physical resources and requires the consideration of Māori values, culture and tradition in resource management decision making. Relevant provisions include: Section 6: In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing resources, shall recognise and provide for the following matters of national importance ... (e) the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, and other taonga (f) and (g) . Section 7: In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to (a) kaitiakitanga. Section 8: In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of te Tiriti o Waitangi (Treaty of Waitangi).

Hazardous Substances and New Organisms Act 1996 (HSNO)

Purpose	The purpose of this Act is to protect the environment, and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances and new organisms.
Relevance to Māori	<p>Although its application is generic across all cultures the general principles are especially relevant for Māori as kaitiaki. The principles of the Act state that its principle purposes are the safeguarding of the life-supporting capacity of air, water, soil, and ecosystems. Additionally, the maintenance and enhancement of the capacity of people and communities to provide for their own economic, social, and cultural well-being and for the reasonably foreseeable needs of future generations.</p> <p>Relevant provisions include:</p> <p>Section 6: All persons exercising functions, powers, and duties under this Act shall, to achieve the purpose of this Act, take into account the following matters: (d) the relationship of Māori and their culture and traditions with their ancestral lands, water, sites, wāhi tapu, valued flora and fauna, and other taonga.</p> <p>Section 8: All persons exercising powers and functions under this Act shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).</p> <p>Section 24A: Gives effect to the establishment of Nga Kaihautū Tikanga Taiao.</p>

Climate Change Response Act 2002

Purpose	To enable New Zealand to meet its international obligations under the United Nations Framework Convention on Climate Change and the Kyoto Protocol. These include to retire the number of units equal to the number of tonnes of carbon dioxide emitted as well as to provide for the implementation, operation and administration of a greenhouse gas emissions trading scheme.
	Note: the primary responsibility for upholding the Act sits with the Minister for Climate Change Issues.
Relevance to Māori	<p>The Māori economy is heavily involved in fishing, farming and forestry, all of which are affected by the Emissions Trading Scheme.</p> <p>Relevant provisions of the Act include:</p> <p>Section 3A: In order to recognise and respect the Crown's obligation to give effect to the principles of the Treaty of Waitangi:</p> <p>(a) ... the Minister must consult, or be satisfied that the chief executive has consulted, representatives of iwi and Māori that appear to the Minister or chief executive likely to have an interest in the order.</p> <p>(b) ... the Minister must consult, or be satisfied that the chief executive has consulted, representatives of iwi and Māori that appear to the Minister or chief executive likely to have an interest in the pre-1990 forest land allocation plan.</p> <p>(c) ... the Minister must consult, or be satisfied that the chief executive has consulted, representatives of iwi and Māori that appear to the Minister or chief executive likely to have an interest in the fishing allocation plan.</p> <p>(d) ... before recommending the making of a regulation under section 164, the Minister must consult, or be satisfied that the chief executive has consulted, representatives of iwi and Māori that appear to the Minister or chief executive likely to have an interest in the regulation.</p>

Environmental Protection Authority Act 2011

Purpose	<p>The purpose of this Act is to establish an Environmental Protection Authority and to provide for its functions and operation.</p> <p>Particular provisions relating to Māori include:</p> <p>Section 4: In order to recognise and respect the Crown's responsibility to take appropriate account of the Treaty of Waitangi (a) section 18 establishes the Māori Advisory Committee to advise the EPA on policy, process, and decisions of the EPA under the environmental Act; and (b) the EPA and any person acting on behalf of the EPA must comply with the requirements of an environmental Act in relation to the Treaty, when exercising powers or functions under that Act.</p> <p>Section 19 (1): The function of the Māori Advisory Committee is to provide advice and assistance to the EPA on matters relating to policy, process, and decisions of the EPA under an environmental Act or this Act.</p> <p>(2): The advice and assistance must be given from the Māori perspective and come within the terms of reference of the committee as set by the EPA.</p>
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Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012

Purpose	<p>The purpose of this Act is to promote the sustainable management of the natural resources of the Exclusive Economic Zone and the Continental Shelf.</p>
Relevance to Māori	<p>Indirectly, the Act will generate a wealth of research to be undertaken in this area, where very little is currently known. This information, along with current knowledge, could contribute to robust environmental impact reporting as well as identifying appropriate mitigation measures.</p> <p>Relevant provisions include:</p> <p>Section 12 and 18: In order to recognise the Crown's responsibility to give effect to the principles of the Treaty of Waitangi for the purposes of this Act,—(a)... provides for the Māori Advisory Committee to advise the Environmental Protection Authority so that decisions made under this Act may be informed by a Māori perspective.</p> <p>Section 33 and 59: Requires the Minister, in respect of regulations, and the EPA in respect of marine consents, to take into account the effects on existing interests, which may include Māori who have existing interests as defined in the Act.</p> <p>Section 45: Requires the EPA to notify iwi authorities, customary marine title groups, and protected customary rights groups directly of consent applications that may affect them.</p>

SECTION 2

Ngā Kaihautū Tikanga Taiao

The purpose of this section is to understand the role of Ngā Kaihautū Tikanga Taiao. It provides a high-level view of what is considered by Ngā Kaihautū Tikanga Taiao when they provide advice.



What 'the Māori perspective' means for Ngā Kaihautū Tikanga Taiao

Ngā Kaihautū Tikanga Taiao is the statutory Māori Advisory Committee established under Section 18 of the EPA Act. The committee's statutory requirement is to provide advice and assistance from a Māori perspective. This advice carries different weighting or recognition depending on which piece of legislation it is being applied to. The advice and assistance must be given from a Māori perspective and come within Ngā Kaihautū Tikanga Taiao's Terms of Reference set by the EPA.

The Terms of Reference outlines that Ngā Kaihautū Tikanga Taiao will:

- provide the Board with advice on organisational planning, policy development and procedure to assist the Board to take account of Māori perspectives including tikanga Māori, Te Tiriti o Waitangi (The Treaty of Waitangi), economic, scientific and other Māori aspirations
- recommend and assist with the development, implementation and monitoring of strategies that will enhance the knowledge, understanding and participation of Māori in relation to the functions of the EPA
- when requested by the Board or a committee of the Board, Ngā Kaihautū Tikanga Taiao may advise on the membership of sub-committees with delegated authority to make decisions, in accordance with the EPA's statutory functions

- provide delegated decision-making committees with advice and/or independent reports on applications to the EPA in accordance with the environmental Acts within which such decisions are being made
- review and recommend processes and protocols for ensuring the satisfactory incorporation of Māori perspectives in decision making
- advise on and monitor the activities of the EPA, including statutory decision making, to ensure the timely, appropriate and effective incorporation of Māori perspectives
- provide advice on other functions of the EPA as required.

Ngā Kaihautū Tikanga Taiao recognises that there is no one Māori world view or perspective on resource management matters, and that the Māori perspective is different for each iwi, hapū, marae, and whānau. The intent of Ngā Kaihautū Tikanga Taiao is not to supersede or replace the distinct perspectives of the various iwi, hapū, marae, or whānau, but to ensure that their perspective(s) have been sought and considered by the EPA in their policies, processes and decisions, as well as by applicants in their applications.

To ensure consistency in the use of the advice and assistance provided by Ngā Kaihautū Tikanga Taiao, the objectives and the sections of this document they relate to are outlined overleaf.

Ngā Kaihautū Taiao's objectives

Objective 1: Uphold tikanga and the use of mātauranga Māori.

Linking sections:

- *Section 1 Te Tiriti o Waitangi (The Treaty of Waitangi)*
- *Section 6 Engagement with Māori*

- Process guardians. Ensure that mātauranga Māori is used in an appropriate context.
- Provide advice and assistance about the development, incorporation and/or implementation of mātauranga Māori, Māori perspective and tikanga across the EPA.

Objective 2: Recognise Māori rights and interests under Te Tiriti o Waitangi (The Treaty of Waitangi).

Linking sections:

- *Section 1 Te Tiriti o Waitangi (The Treaty of Waitangi)*

- Provide advice and assistance to ensure Māori rights and interests are given appropriate recognition and given suitable weight in EPA policy, process and decisions.

Objective 3: Protect and enhance the natural and built environment and ensure the resilience of ecosystems, people and communities.

Linking sections:

- *Section 3 Impact on Māori*
- *Section 4 Outcomes of significance to Māori*
- *Section 5 Identifying and assessing effects (risks and benefits)*

- Provide advice and assistance to the EPA about how to support the role of Māori as kaitiaki.
- Provide advice and assistance to understand how EPA decisions could have cumulative impacts (positive and/or negative) on the broader ecosystem. For example, impacts on water quality from land contaminants can potentially affect an entire food web, and not just be limited to the water body itself.

Objective 4: Acknowledge the role of tangata whenua.

Linking sections:

- *Section 1 Te Tiriti o Waitangi (The Treaty of Waitangi)*
- *Section 6 Engagement with Māori*

- Provide advice and assistance to the development, implementation and management of the organisation's policies and processes for engaging with Māori.
- Encourage the commissioning and resourcing of cultural impact assessment reports, tangata whenua effects assessment reports, or similar, and that these be prepared by tangata whenua (or a nominee).
- Contribute to the development of information, resources and materials that will enhance stakeholders' understanding of Māori interests, knowledge, principles and values relative to the EPA's functions.

SECTION 3

Impact on Māori

The purpose of this section is to explain what needs to be considered when assessing the impact of any application on the capacity and capability of Māori to provide for their own environmental, economic, cultural and social health, and their own well-being in the present and for future generations.

This section links to Ngā Kaihautū Tikanga Taiao's objective:

- Protect and enhance the natural and built environment and ensure the resilience of ecosystems, people and communities.



When evaluating areas of importance to Māori, decision makers should consider information about the impact in the following areas:

- the extent to which issues raised by the applicant affect the maintenance and enhancement of the capacity of people and communities to cater for the needs of future generations
- the extent to which issues raised by the applicant affect Māori
- the extent to which effects of the proposed activity affect Māori perspectives and values
- the extent to which the principles of Te Tiriti o Waitangi (The Treaty of Waitangi) have been considered
- the appropriateness of the applicant's process of engagement or consultation with Māori as a means of informing or providing evidence about the potential effects of an application on Māori
- the strength of submissions and evidence about any effects on the Māori community or communities
- the scope for managing risks to Māori through controls or conditions on specific applications.

In making decisions on applications, depending on the process, the EPA may consider information, advice and input from a range of sources including:

- the applicant
- the cultural impact assessment or a similar document about the effect on Māori
- information from similar previous applications
- EPA staff
- direct consultation with Māori
- expert reviewers
- Ngā Kaihautū Tikanga Taiao
- public submissions
- Treaty settlements
- information from other jurisdictions and agencies
- international literature
- other relevant sources.

SECTION 4

Concerns of significance to Māori

The purpose of this section is to highlight what should be considered when assessing the impact any application will have on relationships between Māori and their traditional and contemporary knowledge systems, cultural concepts, ancestral lands, waters, historical sites, wāhi tapu, valued flora and fauna, and other taonga.

This section links to Ngā Kaihautū Tikanga Taiao's objective:

- Protect and enhance the natural and built environment and ensure the resilience of ecosystems, people and communities.

There are a number of areas of concern of particular significance to Māori which are relevant to the EPA under the EPA Act and other environmental Acts it administers². These are:

- environment
- culture
- health and well-being
- economic development and sustainability
- Te Tiriti o Waitangi (The Treaty of Waitangi).

These areas of concern should be taken into consideration when determining what level of engagement and risk assessment is needed. An indication of the depth of concern felt by Māori about any impacts identified is most appropriately provided by those likely to experience those impacts.

Environment

Whether the application will have a significant impact on the productive and life-sustaining quantity and quality (including the spiritually-based qualities and intrinsic values) of:

- traditional Māori food resources (mahinga kai)
- New Zealand's indigenous flora and fauna, or other flora and fauna valued by Māori
- water (inland, coastal and deep sea)
- land
- air
- natural habitats and ecosystems
- other natural resources valued by Māori
- other cultural heritage resources valued by Māori
- other cultural heritage relationships valued by Māori.

Example:

During the reassessment of 1080, the Decision-making Committee recognised the concerns raised by Māori. Those concerns focused on the negative effects of continued 1080 aerial distribution on native species and ecosystems; deterioration of the relationship of Māori with affected taonga species and the environment which, in turn, contributes to the progressive loss of knowledge held by Māori.

The Committee also acknowledged the significant damage and degradation caused to taonga by the existence of browsing and other pest species and the need to continue pest management control. To mitigate these impacts the committee implemented additional controls and recommended reports on aerial operations, improved consultation with and participation of Māori in pest management operations and an increased focus on research specific to Māori interests.

² A full description of the meaning of the cultural concepts is attached as Appendix 1: Description of Māori concepts.

Culture

This area of concern is about considering whether the application may have a significant impact on mātauranga Māori and tikanga Māori including the kaitiaki role of Māori and the protection and enhancement of the mauri, mana and tapu of:

- **Ngā tangata** – people
- **Ngā Taonga koiora** – native flora and fauna
- **Ngā Taonga tuku iho** – valued flora and fauna
- **Whenua** – land
- **Ngā moana, ngā roto, ngā awa, me ngā manga** – waterways (inland and offshore)
- **Te hau** – air
- **Ngā Taonga tuku iho** – traditional Māori values and practices.

Example:

In relation to an application to import chemical pesticides, a report by Ngā Kaihautū Tikanga Taiao stated:

“Māori consider the presence of any anthropogenic compound that is unable to be eliminated naturally as having an impact on the mauri (life energy) of that individual. This in turn is considered symptomatic of an environment that is not well or has become ‘unbalanced’... there exist a range of established processes and relationships that continuously cycle chemicals through the spiritual states of tapu (restricted state) and noa (relaxed or normalised state). Compounds that have been synthesised with properties that convey resistance to these natural processes are often met with opposition – particularly if their intended use involves direct deployment into the environment.”

The report also recommends investigating the use of other chemical control agents that do not bio-accumulate and bio-magnify, and non-chemical methods such as lures and traps.

Health and well-being

This area of concern is about considering whether the application may have a significant impact on the protection and enhancement of:

- Taha wairua – spiritual health and well-being obtained through the maintenance of a balance with nature and the protection of mauri
- Taha whanaunga – the responsibility and capacity to belong, care for and share in the collective, including relationships and social cohesion
- Taha hinengaro – mental health and well-being and the capacity to communicate, think and feel
- Taha tinana – physical health and well-being.

These together express the holistic nature of hauora (Māori health and well-being) and this model is also known as the Whare Tapawhā model of Māori health.

Example:

These outcomes were considered in the methyl bromide reassessment, where Māori submitters acknowledged the positive role that the chemical had on the protection of taonga species but were very concerned with the negative impact of the chemical on neighbouring interests. In particular there was a focus on Whareroa Marae which was situated immediately next to fumigation areas. The negative impact on the taha wairua and tinana of children at the kōhanga reo, as well as on the taha tinana of kaumātua living in the nearby kaumātua flats, was extremely high and the Decision-making Committee mitigated this by requiring minimum buffer zones, air quality monitoring and notification of spraying to nearby residents.

The Committee also recommended the involvement of Whareroa Marae representatives in fumigation planning and consultation with the Port of Tauranga.

Economic development and sustainability

This area of concern is about considering whether the application may have a significant impact on the:

- ongoing capacity and ability of Māori to be economically sustainable
- ongoing participation of Māori in the protection of economic potential and generation of economic benefit.

Example:

Economic factors were considered in a submission for the organophosphates and carbamates reassessments (OPCs). One submitter stated that their whaihua (pursuit of economic productivity) would be negatively impacted if they were no longer permitted to use certain OPCs. The submitter suggested that as there are presently no viable alternatives for the OPCs they currently use, it would lead to a decrease in the amount of wine produced which in turn would lead to the laying off of staff, most of whom are Māori.

A further example comes from the methyl bromide reassessment mentioned earlier, where Ngā Kaihautū Tikanga Taiao commissioned a report on the impact of the removal of methyl bromide on the Māori economy, because Māori are large forest owners, as well as forestry and port employees. This report was considered by the Decision-making Committee and contributed to the overall assessment of methyl bromide under the Hazardous Substances and New Organisms Act 1996.

Te Tiriti o Waitangi (The Treaty of Waitangi)

This area of concern is about considering whether the application may have a significant impact on:

- ongoing management by Māori of their cultural and natural resources
- ongoing rights of Māori to develop economically, culturally, socially, spiritually, and physically
- Māori rights and interests generally
- implementation of the principles of Te Tiriti o Waitangi (The Treaty of Waitangi)
- any Treaty settlements.

Example:

An assessment against the criteria mentioned above was applied in the Wai 262 Flora and Fauna Claim. It referred specifically to the HSNO Act and the RMA, and was about regulatory regimes not sufficiently providing for Māori rights to natural resources. The Tribunal reported on this claim, making a number of recommendations specific to the HSNO Act and the RMA to give greater recognition to Māori interests as outlined below:

- 'The Methodology Order (which details how ERMA conducts its multi-disciplinary risk assessments) should be brought in line with the HSNO Act 1996. That is, no automatic privilege should be given to physical risks, as it is currently under clauses 25 and 26.'
- An additional paragraph (c) in section 5 of the HSNO Act should require all those exercising functions, powers, and duties under the Act to recognise and provide for the relationship between kaitiaki and their taonga species³

³ Waitangi Tribunal 2011. *Ko Aotearoa Tēnei: A Report into Claims Concerning New Zealand Law and Policy Affecting Māori Culture and Identity. Claim Title: Indigenous Flora and Fauna and Cultural Intellectual Property Claim. ROI: Wai 262 volume 1. Wellington. Page 211. Section 2.11.2. Retrieved 9 May 2016 <http://www.justice.govt.nz/tribunals/waitangi-tribunal>*

SECTION 5

Identifying and assessing effects (risks and benefits)

The purpose of this section is to highlight what should be considered when assessing if any effects (direct or indirect) on Māori have been identified by the applicant or by Māori, and the level of controls or remedies that have been proposed to mitigate risks or enhance benefits.

This section links to Ngā Kaihautū Tikanga Taiao's objective:

- Uphold tikanga and the use of mātauranga Māori

Risks and benefits must be identified before they can be assessed or managed. Methods used to assess or analyse risks and benefits may vary according to the types of risk or benefit and their source and consequences, but the general processes of risk and benefit identification, as seen in Figure 2, are the same.

Figure 2: Steps to assess potential risks or benefits

1	Identify potential adverse and beneficial effects of the activity on issues of significance to Māori.
2	If there are none, there is no need to continue with that particular section.
3	Where potential effects are identified, assess the level of significance of the effects.
4	Based on the level of significance of potential adverse effects, identify potential options or controls for mitigating, minimising or removing the risk where appropriate.
5	Based on the level of significance of potential beneficial effects, identify potential options or controls for encouraging their improvement or enhancement.
6	Determine the significance of the effects with controls in place.

Where the effects are tangible (can be expressed in biological, physical or economic terms), both the magnitude and the likelihood of the effect should be described.

For effects which are wholly cultural in nature (do not have a biological, physical or economic component), it may be more appropriate to provide a single qualitative description of the nature and level of the cultural effect concerned, rather than attempt to describe magnitude and likelihood separately.

Any cultural effect will still need to be articulated in such a way that tangata whenua, applicants and/or a decision-making committee can address the concepts expressed and assess what, if any, mitigation or enhancement measures could be applied.

SECTION 6

Engagement with Māori

The purpose of this section is to discuss the importance of engagement with Māori. Decision makers should consider the effectiveness of any engagement undertaken for applications that have potentially significant effects on Māori, and whether adequate information is provided for the decision making processes.

This section links to Ngā Kaihautū Tikanga Taiao's objectives:

- Protect and enhance the natural and built environment and ensure the resilience of ecosystems, people and communities
- Acknowledge the role of tangata whenua



Building relationships with Māori

As outlined in the He Whetū Mārama Framework, the EPA maintains relationships that ensure Māori are productively involved in its decision making and associated activities. To achieve this, relationships need to be reciprocal, productive and enduring. In addition, relationships need to enable a two-way partnership. This will require investment and maintenance from both Māori and applicants. As well as establishing and maintaining relationships with key Māori groups, the EPA will also support the development of relationships between applicants and Māori.

Engaging with Māori for applications to the EPA

It is recommended that applicants engage with Māori on any application to be processed by the EPA that may have a significant impact (either positive or negative) on matters of importance to Māori.

While it is acknowledged that there is no duty to consult or engage and that the consequences of a failure to consult are indirect – it is EPA best practice to actively consult with Māori. That said, in understanding and addressing Māori concerns and existing interests, some level of consultation is not just good practice, but an important element in compiling a robust proposal.

To be effective, engagement will need to be conducted early in the development of application proposals, to ensure a genuine opportunity for Māori to influence aspects of the proposal relevant to their interests. In addition, applicants will need to ensure they engage with the correct and most appropriate parties (for example recognised mana whenua and mana moana) and that they should be prepared to resource the engagement where necessary.

When considering applications, decision makers will need to determine if any engagement undertaken with Māori is in accordance with best practice, particularly in terms of being assured that information has been provided from relevant Māori parties.


Key considerations:

Engagement with Māori will be particularly relevant where proposals have the potential to impact on:

- ongoing management by Māori of their cultural and natural resources
- ongoing rights of Māori to develop culturally, socially, spiritually and physically
- the implementation of the principles of Te Tiriti o Waitangi (The Treaty of Waitangi) and any Treaty settlements.

Once it has been determined that there are potentially significant impacts on Māori interests, consideration will need to be given to whether those impacts are local or national. The general principle is that if an application will only have impacts of local significance to Māori, then it will be sufficient to engage with those directly affected (such as iwi and hapū of the area and any relevant Māori industry organisations).

Engagement on a national scale will be reserved for cases where there are likely to be impacts of national significance to Māori. In general terms, applications made to the EPA under the RMA or EEZ will have locally-, regionally- or nationally-based impacts, so an appropriate level of engagement will be required. HSNO Act proposals involving the release or reassessment of organisms or substances, are likely to have national impacts so may require national engagement.



SECTION **7**
Appendices

Appendix 1:

Description of Māori concepts

Māori cultural concepts / practices

The following information about key Māori cultural concepts and practices is provided to guide decision makers in considering Māori perspectives as they relate to EPA matters. It should be noted that various iwi and hapū groups may have different interpretations of these concepts and practices, and that this document does not seek to detail them. Where there is a need, Ngā Kaihautū Tikanga Taiao will attempt to provide expertise or experts to supply guidance.

Mātauranga Māori

Cultural traditions existed and continue to exist for all races, creeds and nations. Traditions codified into laws, rules, practices and procedures provide the framework for different belief systems and world views.

The framework for identifying and characterising mātauranga Māori (Māori world views and perspectives) is based on an analysis of the traditional practices of Māori society. These traditional practices were and continue to be developed as tools for controlling behaviour, particularly about the sustainable management of the environment in which Māori live.

Mātauranga Māori is essentially a system of knowledge and understanding about Māori beliefs relating to creation, the phases of creation and the relationship between atua (supernatural guardians) and tangata (mankind). This relationship or whakapapa (genealogy) determines the way people behave in the context of their environmental ethical practices. Understanding Māori beliefs and values, and the relationship of these to the natural world, requires an understanding of traditional expressions including those portrayed in waiata (song) and pepeha (proverbs).

It should be remembered that while the main features and principles in Māori tradition are consistent between different iwi and hapū groups, the concept of 'He kōrero i titoa ai i te roro o te whare wānanga' (traditional expressions composed in the porch of the house of learning) recognises regional and tribal differences.

Additionally, mātauranga Māori includes knowledge from current and contemporary sources. As an organic and living knowledge base, mātauranga Māori is ever-growing and expanding.

Kaitiakitanga

Kaitiakitanga is a guiding principle for decision makers and a valuable navigational tool for the EPA in making sound judgements and decisions when taking into account mātauranga Māori.

Kaitiakitanga is defined in the Resource Management Act 1991 as guardianship or stewardship, though it was used by Māori to define conservation customs and traditions. It is intimately linked to rangatiratanga, the power and authority of tangata whenua to control and manage the resources within their territory, as guaranteed in the preamble and Article II of Te Tiriti o Waitangi (The Treaty of Waitangi).

All resources and forms of life were birthed from Papatūānuku, the earth mother who is the personification of the Whenua (Earth).

Through her union with Ranginui (sky father), all things were created – meaning that all animate and inanimate things are related through whakapapa.

*'Papatūānuku is herself a living organism with her own biological systems and functions. She provides a network of support systems for all her children who live and function in a symbiotic relationship. The different species and genera contribute to the welfare of other species and also help to sustain the biological functions of Mother Earth, both in their life and in their death. Her children work with the processes of ingestion, digestion and exertion. The streams of water are her arteries bringing the life-giving waters for her to imbibe and share with her offspring. Those same streams act as alimentary canals and help in the disposal of waste.'*⁴

⁴ Marsden, Māori "God, Man and Universe: A Māori view." In Te Ao-Hurihuri, Aspects of Māoritanga, ed. M.King 117-137. Auckland, N.Z. Reed, 1992.

According to Māori tradition, the resources or children of Papatūānuku do not belong to tangata (people), but rather tangata are one of the many children who belong to Papatūānuku. People, animals, birds and fish all harvest the bounties of Papatūānuku but do not own them.

Kaitiakitanga is therefore the undertaking of duties and obligations inherited from the atua (spiritual guardians and first children of Papatūānuku) over the realms of those atua. They include but are not limited to:

- **Tāne Mahuta** – kaitiaki of the resources of the forests
- **Tangaroa** – kaitiaki of the resources of the oceans
- **Rongo-mā-tāne** – kaitiaki of the resources of cultivated foods
- **Haumietiketike** – kaitiaki of uncultivated foods
- **Tūmataunga** – kaitiaki of people and tribal conflicts
- **Tāwhirimātea** – kaitiaki of the elements
- **Rūaumoko** – kaitiaki of volcanoes and earthquakes

It is the responsibility of people as kaitiaki to ensure the protection of the cultural and spiritual health and well-being both of themselves and of the resources which it is their duty to protect. This is achieved by performing kawa or ceremonial rituals according to the tikanga or laws/rules of those rituals.

There are three key spiritual elements (taha wairua) of kaitiakitanga which define health and well-being for Māori. They are mauri, mana and tapu.

Mauri

Mauri is the active life-giving principle, or physical life-principle. It is imbued by Io, the Supreme Being, into all things animate and inanimate, making it possible for them to move and exist within the conditions and limits of their own creation and environment. The flesh of a bird is different to that of an animal, a fish, or a tree, and Māori consider that the mauri of each should not be mixed with that of others.

Mauri is a form of energy, and generates, regenerates and upholds creation. The mauri radiates outwards both to the environment and, more specifically, to the species for which it was intended. This provides conditions within the environment that harmonise and balance the processes of the earth's ecosystems and aids the regeneration process. Mauri ora has been described as the human form of mauri, and is of higher genealogical order to the mauri of non-human objects.

Mauri is unable to protect itself against unnatural changes to the environment, though it does have the ability to mend and heal, given appropriate time and conditions. When the mauri is strong, humans, fauna, flora and the landscape flourish. When it is depleted and weak those forms of life become sickly and weak.

Mana

Mana means authority, dignity, integrity and power (including spiritual authority and power). In terms of authority, it denotes the lawful permission delegated by the atua to their human agent to act on their behalf and in accordance with their revealed will. Mana is a force in every person, place or object.

Mana Atua

The sacred, enduring, indestructible power of the atua, beginning with Io, and known as Te Ahi Kōmau. This power is handed down to those persons who conform to sacred rituals and principles.

Mana Tipuna (Mana Tūpuna)

The power of authority handed down from generation to generation through chiefly lineage or from others who possessed it. Those who inherit mana tipuna also inherit the responsibility for conducting the various rituals and duties required to maintain that authority and power.

Mana Whenua / Moana

Mana o te whenua / moana – the authority, dignity and integrity of the land or sea: the inherent power of the land and water to produce the bounties of nature. When the world was created, the atua imbued the womb of Papatūānuku with procreative power. This power is maintained by its mauri, which provides the potential for the growth and development of all animate and inanimate things. Māori avail themselves of this power when they exercise manaaki manuhiri (hospitality) and provide their guests with the bounty produced within their tribal domain.

Mana ki te whenua/moana – the authority, dignity and integrity of the resources of the land or sea: the relationship of iwi, hapū and whānau to the land and sea, and the natural resources within their tribal rohe (boundaries). These boundaries are established by ahi-kā-roa (long standing fires of occupation), whakapapa (genealogy) and raupatu (conquest). It is from this concept that the expression tangata whenua (people of the land) was generated.

Mana ki te whenua is also about the status of tangata whenua, because status is determined not by ownership of the land, but by the demonstration of hospitality. This is noted in a number of traditional whakatauki (proverbs) such as:

“Ki te kore koe e whāngai i te tangata, me pēhea te iwi e mōhio ai e whai mana ana koe?”

If you do not demonstrate true hospitality, how shall people know that you are a person of mana?

In accordance with Māori customary belief, ancestral land cannot be bought or sold, as you cannot own, buy or sell your own mother. The land is handed down and gifted to a particular

people in trust, carrying responsibilities and obligations for its care. This also applies to rivers, lakes, harbours and seas, which are a source of life for the people.

Māori, now, are largely powerless to act in their kaitiaki role, unless specifically mandated by statute or agreement. Deep wounds are created within the people who once held kaitiaki responsibilities, as they can only witness the pollution and destruction (both physical and spiritual) of their lands and other resources.

In terms of these resources, Māori have noted the importance of mahinga kai⁵ to its culture and that it provides the centre that holds the tribe together. Without mahinga kai, Māori consider that they would lose a key component of their cultural identity. Maintaining the mauri of resources such as mahinga kai will sustain healthy ecosystems, support a range of cultural uses, and reinforce the cultural identity of the people.

Mana Tangata

The power acquired by an individual according to his or her ability to perform the functions of kaitiakitanga assigned to them. The functions of kaitiakitanga are many and diverse; for example a skilled warrior was able to acquire mana through the art of tribal conflict or warfare, and would be assigned as kaitiaki within the realm of Tūmataunga (the Spiritual Guardian of tribal conflict).

A type of mana specific to women (obtained at birth) is that of their role as *whare tangata* (child bearers). Others include their role in welcoming visitors on marae, and as kaitiaki of marae protocols.

Tapu

Tapu is the sacred life-giving essence and authority, dignity and integrity of the spiritual guardians. The law of tapu is intended to protect the mauri and mana of all things.

Tapu is an element which was deposited by the *atua* into the care of *tohunga* (high priests). If a *rāhui* (limitation of use or trespass) was placed on the landscape, it was done to recognise the intrinsic tapu of that landscape or event. People knew that while the land was in this heightened state of tapu any infringement would meet with misfortune.

As tapu is regarded as the sacred link to the mauri and mana of the spiritual guardians, the protocols of tapu become the mechanism that controls human behaviour in regard to their use of resources. It is therefore a key spiritual element of kaitiakitanga.

All things created have tapu because they link with one or other of the *atua*, and ultimately with *Io*. Specific *iwi* and *hapū* have

⁵ *'Mahinga kai' literally means 'food cultivation', and it is an all-inclusive term that encompasses the ability to access (both physically and legally) the resource, the site where gathering occurs, the activity of gathering and using the resource, and the good health of the resource – it must be fit for cultural use.*

their own understanding of tapu, however a generic view is that tapu is used, among other things, to protect:

- people (especially children) from entering dangerous places
- resources from inappropriate use or overuse
- quality of life (*mauri* and *mana*)
- the deceased from being defiled
- the sanctity of *wāhi tapu* (sacred places)
- the community from adverse external or unnatural influences.

Kawa

Kawa are the ceremonial (and liturgy-like) protocols, rituals or actions of kaitiakitanga that must be performed meticulously for major events. Any deviation or error would be regarded as a grave breach of kaitiakitanga and would be taken as an ill omen. Examples of events requiring specific kawa include but are not limited to:

- child birth
- cultivation
- hunting or fishing
- death
- marae activities
- protecting and conserving natural and historic resources
- *wānanga* (the passing on and acquiring of knowledge)
- the use of resources for manufacturing purposes
- the building of *whare*, *waka*, etc.
- other events that enhance the welfare, health and spiritual sustenance of the community.

Simply defined, kawa describe what is required in order to fulfil duties and obligations.

Tikanga

Tikanga are essentially a set of ethics, expressed as customs and traditions, which have been handed down through many generations and are accepted as a reliable and appropriate way of achieving and fulfilling certain objectives and goals. Such proven methods, together with their accompanying protocols (or kawa), are integrated into the general cultural institutions of society and incorporated into the system of standards, values, attitudes and beliefs⁶.

Simply defined, tikanga describe the ethical and moral basis for how the kawa must be implemented or undertaken.

⁶ Marsden, M (2003) *'The Woven Universe. Selected writings of the Rev. Māori Marsden'*, edited by *Te Ahukaramu Royal, Te Wānanga o Raukara, Otaki.*

Appendix 2:

Glossary

Ancestral lands – lands that have historical, cultural or spiritual value to Māori.

Hapū – collection of families with common ancestry and common ties to land.

Iwi – Māori social and political grouping made up of hapū and whānau.

Kaitiakitanga – guardianship or stewardship, customs and traditions that provide for sustainable environmental management.

Mahinga kai – food-gathering and cultivation practices and traditional Māori foods including indigenous shellfish, inland fish (for example tuna [eels], freshwater kōura [crayfish]) and plants (pūhā, kūmara etc).

Mātauranga Māori – the Māori system of knowledge and understanding of all things past and present that have been handed down from generation to generation and that is learned from experience and other sources.

Mauri – the spiritual integrity or life-force of all things, animate or inanimate.

Ngā Kaihautū Tikanga Taiao – the statutory Māori Advisory Group to the EPA.

Rāhui – embargo, quarantine, traditional Māori sanction to temporarily or permanently stop people using natural resources and/or manage the way those resources are used.

Sites – important sites to Māori (particularly archaeological sites and ancient dwellings).

Taonga – things deemed to be of value to Māori.

Tapu – sacred, prohibited, restricted. The law of tapu is intended to protect the mauri and mana of all things.

Tikanga Māori – set of practices, customs and traditions that are accepted as a reliable and appropriate way of achieving and fulfilling certain objectives and goals.

Wāhi tapu – sacred sites, sites of spiritual significance to Māori.

Waitangi Tribunal, Te Tiriti o Waitangi (The Treaty of Waitangi) claims and settlements – the Crown established the Waitangi Tribunal to hear and report on any past breaches of Te Tiriti o Waitangi (The Treaty of Waitangi). A 'claim' is for recompense for Crown breaches of the terms of The Treaty. Settlements are made in combinations of money, land or other economically beneficial assets such as forests and fishing quota, and cultural redress of varying types.

Whānau – family (including the extended family).



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