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Toitoti Manawa

Myrtle Ora Surveillance, Monitoring
and Management Strategy

Authors

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Mihi

E tū tātou whakaiti nei i raro i a Ranginui, i runga i a Papatūānuku, e tītiro kau ana ki ngā maunga whakahi me ngā tini uri o Tane.

Ka hoki nga mahara ki te tini, te mano kua huri kaweka nei, he tangi apakura mo rātou katoa, haere i runga te Rangimarie.

Hoki nei ki a tātou te hunga ora tēnā tātou katoa.

Anei he rautaki toitu mo te waka wairua hei aratohu i o tātou mahi.

Me mahi tahi tātou ki te tiaki te Taiao.

Me to rourou me tōku rourou ka ora ai te Ao.

Tukuna tō wairua kia rere.

We stand humbly under the sky and on our sacred earth mother we look at the impressive mountains and the many different children of Tane.

Our thoughts turn to the many who have departed this life, we sing a final lament to them all, farewell in peace.

We return to all of us the living salutation to us all.

Please find our sustainability plan a guide for our future work.

As we work together to nurture and look after the world around us.

With your basket of knowledge and our basket of knowledge we can make the world a better place. Let your spirit soar.

Acknowledgments

Beccy Ganley, Lisa Cowan and Roanne Sutherland for the knowledge and support they have provided.

Key Relationships & Engagement:

- Iwi, hapū, marae, tangata whenua communities and landowners.
- Tohunga & mātauranga practitioners
- Biological Heritage National Science Challenge
- Tauranga Moana Biosecurity Capital (TMBC)
- Co-governance Trusts eg. Mauao Trust
- Territorial authorities
- Kaimai Kauri
- Department of Conservation
- Ngā Rakau Taketake
- Te Whakahononga Māori
- Te Tira Whakamātaki
- Plant and Food Research
- Scion
- Waikato University
- Our local communities & public

Toitū te Tangaroa, toitū te Papatūānuku, toitū te tangata

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

This document is an abridged version of our surveillance, monitoring, and management strategy for Tauranga Moana to protect myrtle species from the disease myrtle rust. A copy of our full strategy can be requested from info@TMBiosecurity.co.nz

Introduction:

Myrtle Rust impacts on our environment but is also impacted on our native and natural eco-systems. Our strategy plan, “Toitōi Manawa” means to motivate, encourage, incite, and inspire recognising challenging changes we will need to be making. On its own *Manawa* – means heart, patience, and tolerance.

Our strategy is Myrtle Ora: Surveillance, Monitoring and Management for Tauranga Moana.

The following underpins the operation of the Tauranga Moana Biosecurity Capital - Māori Caucus (the “Māori Caucus”).

1. Endorses the status that tangata whenua have in their respective areas of Tauranga Moana rohe and the Western Bay of Plenty rohe. Specifically, the area north of Bowentown to Otamarakau, Mai i ngā Kurī ā Whārei ki Otamarakau, the Western Bay of Plenty sub-region (referred to hereafter as Tauranga Moana). The hapū/iwi of these areas are the kaitiaki of Mauri in their rohe.
2. Acknowledge and support hapū/iwi who have confirmed their statutory acknowledgements through their Treaty settlements.
3. Build capacity and develop strategies to facilitate Māori leadership and champions around myrtle rust management.
 - a. Work closely with iwi, hapū, Māori landowners in Tauranga Moana, using kaupapa Māori (Māori methodology).
 - b. Focus on developing a framework to assess the cultural and environmental impacts of myrtle rust on te ao Māori and to prioritise disease management actions.
 - c. Develop protocols that support Māori-led methods to boost ecosystems resilience, while advancing research synergies between western science and indigenous knowledge systems.
 - d. At the end of this project, it will expand international knowledge-sharing on indigenous myrtle rust responses by convening workshops and conferences.

Background¹

Tauranga Moana Biosecurity Capital (TMBC) is a collaboration between Tauranga Moana iwi, local industry and business, science institutions, educators, central and local government.

Since its launch in October 2018, TMBC has become a powerful, knowledgeable group pooling expertise and resources for the sake of our environment, our taonga and our economy. It's the first group of its kind in New Zealand and is the flagship for the national “Ko Tātou - This is Us” movement.

¹ Māori Caucus of TMBC Terms of Reference July 2022

The Māori Caucus was formed in 2021 as a result of the TMBC partnership to ensure local iwi, hapū and tangata whenua membership. The formation ensures the voice of whānau, hapū, iwi and tangata whenua in Tauranga Moana and their tikanga is included for issues concerning biosecurity.

In essence, the purpose of the Māori Caucus is to provide te ao Māori leadership and guidance to help steer the TMBC direction, provide a cultural lens and ensure local tikanga is included and adhered to, hold robust discussions to ensure robust outcomes on issues, values, principles and to ensure the aspirations of whānau, hapū, iwi and tangata whenua of Tauranga Moana are being met.

The Māori Caucus can advocate for the recognition and inclusion of te ao Māori mātauranga, kawa, tikanga and principal concepts of te ao Māori such as kaitiakitanga (the Māori world view of biosecurity).

The Biological Heritage National Science Challenge (BHNSC) approached TMBC with an offer of research funding to support TMBC as a BHNSC flagship site.

The Māori caucus were interested to see research undertaken that benefited the region and offered to work with BHNSC to develop a research proposal.

Specifically, we identified research into myrtle rust as the priority area to advance with BHNSC, focusing on developing a framework to assess the cultural and environmental impacts of myrtle rust on te ao Māori and to prioritise disease management actions, with mātauranga indigenous approaches captured at all stages.

All endemic rākau are culturally significant to Māori. Māori consider the rākau to be part of the contiguous whakapapa they share, assenting to Io (The Supreme Creator) and Te Orokohanga (the creation of the world). Myrtle rust has impacted heavily on Aotearoa's Myrtaceae species and has been identified in multiple location across the Bay of Plenty.

Local tangata whenua have been extremely concerned at the possible long term environmental and cultural impacts of myrtle rust in the Tauranga Moana rohe and have identified Mauao as a place of immense cultural significance to local iwi and hapū, with the ancient pōhutukawa stands that are integral to the Korowai o Mauao.

The discovery of myrtle rust on pōhutukawa on Mauao in April 2022 creates an immediate urgency for a strategy plan to manage myrtle rust in Tauranga Moana.

Surveillance and long term monitoring is vital for the protection of taonga myrtles and enhancement of cultural values associated with the possible rehabilitation, long term management and protection of Tauranga Moana from the impacts of myrtle rust.

What is Myrtle Rust?

Myrtle rust, is a plant disease caused by the introduced fungal pathogen *Austropuccinia psidii*, poses a serious and urgent threat to Aotearoa's native biodiversity. Myrtle Rust affects plant species in the family Myrtaceae including our native pōhutukawa, ramarama, rohutu, rātā, maire tawake and mānuka, which are key and often dominant species in many Aotearoa ecosystems. It can also infect exotic species such as lillypillies, which are highly susceptible and can act as inoculum incubators.

To date it has proved capable of infecting over 480 species worldwide and within Aotearoa has been detected on 24 species. Serious declines towards extinction are underway in some of our native species, and broader ecological consequences are expected.

Myrtle Rust is likely to have a significant impact on matters of national environmental significance protected under national environment law, including listed threatened species and ecological communities, wetlands of international importance, world heritage properties, and national heritage places.

Austropuccinia psidii is not a direct threat to human or animal health, although loss of Myrtaceae species habitat will affect some animal species as well as ecosystem integrity, but is expected to have a profound economic, social, and cultural impact on humans. For example, the spread of myrtle rust will result in an economic impact for nursery and garden industries, as trees decline it is also anticipated to negatively impact tourism, recreation, and including rural and regional and indigenous enterprises. As described above, for Māori all native trees are considered taonga have extremely high cultural value and importance.

The Ministry for Primary Industries led the incursion response when the pathogen arrived in Aotearoa in 2017 and in 2018 transitioned the response to long-term management. However, there is no nationally coordinated response strategy for the environmental dimensions of this threat, meaning management of the pathogen is now up to landowners or managers.

There is an urgent need to actively manage myrtle rust and conduct the necessary research and conservation actions, hence the development of this strategy plan, Toi Manawa. Time is very short for some species that are severely impacted by myrtle rust, but there are meaningful community and tangata whenua conservation actions that can be taken.

1. *Communication*

Outlines the responsibilities of the Māori caucus and timeframes to communicate and provide access to the strategy plan and other myrtle rust resources to Tauranga Moana whānau/hapū. As the strategy plan contains mātauranga that is propriatry to Tauranga Moana, an engagement plan was created for sharing aspects of the strategy plan with TMBC, local and central government agencies, other Māori or indigenous groups, NGOs and scientists

2. *Surveillance*

Provides information on the known areas where Myrtaceae are present and where myrtle rust has been detected in Tauranga Moana. An operational surveillance plan for baseline mapping to determine the district hot spots for myrtle rust infections and an ongoing monitoring plan. These plans will include cultural authority agreements and hygiene protocols.

3. *Management*

Review current and future management and control approaches, both mātauranga and Western science. Include acceptability of the approaches based on te ao Māori.

Recommendations

Funding for this project has been provided by Biological Heritage National Science Challenge but additional funding is needed to undertake long-term monitoring for myrtle rust. The Māori Caucus recommend a funding strategy is prepared for this.

Why we need robust funding strategy?

- To establish a strong local, regional, and national responses to the environmental threats posed by myrtle rust.
- To ensure ongoing training and education programmes.
- The potential adverse effects of myrtle rust disease, in the absence of an effective remedial response, are multi-fold that requires a huge level of attention.
- Potential host-species extinctions and serious declines are now being realised in Aotearoa, with four host-plant species elevated to 'critically endangered' status, and several more identified as immediate concern; all New Zealand Myrtaceae are now regarded as officially threatened.
- Declines or co-extinctions of associated flora, fauna and fungi are likely, but there have been few investigations yet of these 'web of life' connections for myrtle rust host species.
- Ecosystem-level changes are already occurring; changes in the floristics and ecological function in Aotearoa's forest ecosystem have been reported.
- Increase fire risk is resulting from dead standing trees; the long-term fire effects of changed floristics in different systems are unknown.
- Potential increases in weed colonisation of priority natural ecosystems; increased woody weed frequency has been noted in rust-affected forest.
- Loss of fixed carbon due to plant death in forest ecosystems is documented; the potential and rate for replacement carbon capture are unknown.
- Loss of social and cultural heritage, and aspects of national and local identity: these effects cut across all social groups but are especially acute for tangata whenua.
- Potential loss of ecological function: for example, erosion prevention; maire tawake species in Aotearoa floodplains and freshwater wetlands); kānuka in degraded landscapes in New Zealand; and maintenance of water quality and freshwater aquatic habitat.
- Loss of known and unknown (yet to be evaluated) biological, economic, and cultural assets: the Myrtaceae is a family rich in biochemical and genetic resources, providing many 'ecological services' and having a vast range of rongoā, medicinal and culinary uses, resources for climate change adaptation, wild stock for ornamental and production horticulture, food and wood products, and many other attributes.
- Potential loss of public confidence in biosecurity processes and response capabilities: a robust and coordinated national response, directed at remediation of impacts, would play a major role in building confidence and capacity for future environmental biosecurity threats.