

Waikato District Council

Waikato District Plan Review

Technical responses to submissions relating to ecology



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1 Introduction

WSP Ltd have been commissioned to provide ecological advice to Waikato District Council (WDC) with respect to submissions received to the notified Proposed Waikato District Plan (PWDP) as these relate to ecology. The purpose of this report is to provide a technical analysis and recommendations with respect to the following ecological submission issues:

- Additional provisions for the protection of bats;
- Additional management measures to address kauri dieback; and
- Additional provisions for the protection of kanuka and manuka in response to the threat of myrtle rust.

2 Bats

2.1 Submissions

A submission was received from the Department of Conservation seeking inclusion of new maps, objectives, policies and rules to provide further protection for bats (Table 1).

Table 1. Submissions requesting addition to Waikato District Plan for protection of long-tailed bats.

Submission point	Submitter	Decision requested
58538	Lucy Roberts for Department of Conservation	Add new maps, objectives, policies and rules recognizing and providing for bat zones and tree protection (see submission for an example of a rule from the Draft Timaru District Plan).
FS1377.165	Havelock Village Limited	Oppose.
FS1340.97	TaTa Valley Limited	Oppose.
FS1345.9	Genesis Energy Limited	Oppose.
FS1342.160	Federated Farmers	Oppose.

2.2 Bats in the Waikato District

There are two species of terrestrial mammals native to New Zealand, the long-tailed bat (*Chalinolobus tuberculatus*) and the short-tailed bat (*Mystacina tuberculata*). Of these species only the long-tailed bat is known to occur in the Waikato District. The species is widespread both nationally and within the District. Despite being widespread the species is classified as Threatened with a threat status of Nationally Critical (O'Donnell *et. al.*, 2018). The species is found in a variety of habitats where there is mature tree cover, favouring forest edge vegetation and tending to avoid open country. The bats roost in suitable cavities and cracks, as well as under flaking bark, in both mature exotic and native trees during day light hours and periods of the night. It is this behaviour that leaves them vulnerable to being killed or injured if roost trees are felled. The threatened status of the species has led to significant effort to avoid, remedy and mitigate adverse effects when mature trees are being felled in advance of development within the District.

2.3 Merits of bat zones and specific policies for bat protection

Given the threatened status of long-tailed bats and their vulnerability to being killed or injured during tree felling, it is appropriate that measures are taken to protect their habitat and avoid killing or injuring bats during tree felling. The identification of Significant Natural Areas (SNAs) within the District already provides one mechanism where bat habitat can be identified and protected. In most cases, any stand of mature trees that is known to be regularly used by bats is likely to be designated an SNA affording a level of protection under the District Plan. Some of the

known key bat habitats within the District such as the Tamahere gullies are already identified as SNAs.

The Department of Conservation submission seeks inclusion of new maps, objectives, policies and rules recognizing and providing for bat zones and tree protection citing the example of rules in the Draft Timaru District Plan. The approach taken in the Draft Timaru District Plan has merit in terms of providing for the protection of bats and potentially giving certainty as to trees that require special protection measures and those that do not, as well as identifying the areas in which the rules apply. However, it is noted that the Timaru District Planning Map only shows one bat protection area. This reflects the fact that bats are far less widely distributed in the Timaru District than the Waikato District. At this time, it is known that bats are widely distributed within the Waikato District. However, there is no district wide comprehensive data set that would allow accurate mapping of bat protection zones. Such a mapping exercise would also require definition of what constitutes an important bat zone. In a district such as Timaru where the distribution of bats is very limited, identification of important zones is relatively straightforward. In the Waikato, where bats are found widely across the district, and where activity levels vary considerably between sites, this is a much more difficult exercise.

The Timaru District Plan rules provide certainty for which trees are protected and where, but the inclusion of similar rules in the Waikato District plan may be problematic. Bats are protected from killing and injuring under the Wildlife Act 1953. There is the potential that the felling of any tree within the District that leads to the killing or injuring of a bat could result in prosecution by the Department of Conservation. Since inclusion of bat protection zones and rules similar to those proposed in the Timaru District Plan would be very unlikely to include all trees in the Waikato District where roosting bats could occur, following the rules in the District Plan is unlikely to provide exemption from prosecution under the Wildlife Act 1953 for felling trees outside the Plan rules that contain bats.

2.4 Summary and Recommendations

The identification of Significant Natural Areas (SNAs) within the District already provides one mechanism where bat habitat can be identified and protected. In most cases, any stand of mature trees that is known to be regularly used by bats is likely to be designated an SNA, affording a level of protection under the District Plan.

The inclusion of maps, objectives, policies and rules recognising and providing for bat zones and tree protection zones in district plans such as what is proposed in the Draft Timaru District Plan has merit. However, applying the approach in the Waikato District is far more challenging as long-tailed bats have a much wider distribution within the District. At this time the District lacks the comprehensive data set and agreed criteria that would be required to identify such zones. Furthermore, while the rules proposed in the Timaru District Plan may appear to define those trees within the District that require special consideration with a high degree of certainty, following the Plan rules is unlikely to provide exemption from the prosecution under the Wildlife Act if a roost tree falling outside the rules were to be felled.

3 Kauri dieback

3.1 Submissions

Two submissions have been received requesting regarding Kauri dieback. The submissions seek amendments to address management of kauri dieback, particularly around earthworks and to include new objectives, policies and rules (Table 2).

Table 2. Submissions requesting addition to Waikato District Plan regarding management of kauri dieback.

Submission point	Submitter	Decision requested
81.23	Unspecified Waikato Regional Council	Add issues, objectives, policies and rules to address the spread of Kauri Dieback Disease.
FS1342.46	Federated Farmers	Opposes
585.33	Lucy Roberts for Department of Conservation	Add new objectives, policies and rules to address the management of kauri dieback, particularly around earthworks and measures to prevent spread of the disease.
FS1342.158	Federated Farmers	Oppose.
585.5	Department of Conservation	Amend Policy 5.3.5 Earthworks activities to address the management of kauri dieback and measures to prevent the spread of the disease.
585.7	Department of Conservation	Amend Policy 5.6.7 Earthworks to address the management of kauri dieback and measures to prevent the spread of the disease.

3.2 Kauri nationally and within the Waikato District

Kauri (*Agatha australis*) is a very large native tree endemic to New Zealand. Its natural range includes Northland, Auckland and the north part of the Waikato Regions (Figure 1). In the past kauri forests covered extensive areas across these Regions, however historic logging has substantially reduced their extent. Within the Waikato District kauri is almost at the southern edge of its natural range in western New Zealand, with only a small outlier near Kawhia lying south of the District. Most naturally occurring kauri within the Waikato district occur within forest reserve areas. Outside of these areas most kauri encountered are planted. The species is found widely across the district and within neighbouring Hamilton occurring within restoration plantings, gardens and public open spaces. Most of these trees are young specimens <50 years old.

Up until 2018 kauri was classified as Not Threatened. However, the introduction of the fungus-like plant pathogen *Phytophthora agathidicida* to New Zealand, causing the death of many of affected kauri, has resulted in the re-classification of kauri to Threatened, category Nationally Vulnerable. The effects of *Phytophthora agathidicida* are now referred to as kauri dieback disease.

3.3 Kauri dieback disease

Phytophthora agathidicida is a soil-borne microscopic fungus-like plant pathogen that only affects kauri. Kauri dieback is spread by soil movement and plant to plant transmission through underground root-to-root contact. It can be spread by human and animal vectors. It kills all sizes of trees from seedling to giants and there is no cure.

3.4 Kauri dieback in the Waikato District

Kauri dieback is a serious disease presenting significant implications for the future of kauri in New Zealand. Managing the spread of the disease is challenging, particularly managing any disease pathways that involve human activities. In the Auckland Region those natural kauri populations within reserve areas open to the public have been managed by the establishment of controlled areas and track closures by the responsible authorities. Given that most of the natural kauri stands within the Waikato District are within bush reserve areas this would appear to be the most appropriate means of protecting natural stands of kauri from disease spread by the visiting public.

Elsewhere in the district controlling the spread of the disease is far more challenging. Most of the potentially affected trees are young trees within private native plantings and also public open spaces and gardens. Directly monitoring and controlling the movements and activities of people around these trees is likely to be impractical. Such an approach would also require a co-ordinated approach with Hamilton given the movement of people between the District and the main regional City. In these areas education and a guideline-based approach is likely to be the most effective means of controlling the spread of the disease. Waikato Regional Council have produced guidance for rural landowners *“Protecting Kauri: A Rural Landowner’s Guide produced by Waikato Regional Council”* which provides a good starting point. However, this advice needs to be publicised throughout the Region given the presence of kauri within urban areas too.

3.5 Summary and recommendations

Most of the natural kauri stands within the Waikato District are within bush reserve areas. Establishment of controlled areas and track closures by the responsible authorities would appear to be the most appropriate means of controlling the spread of the disease to these populations, as has been undertaken in the Auckland Region.

Outside of natural stands kauri has been widely planted across the district and within Hamilton City, the main regional centre. Most of the potentially affected trees are young trees within private native plantings and also public open spaces and gardens. Directly monitoring and controlling the movements and activities of people around these trees is likely to be impractical. In these areas so education and a guideline-based approach is likely to be the most effective means of controlling the spread of the disease. The guideline prepared by Waikato Regional Council for rural landowners is a useful starting point. However, this advice needs to be publicised in urban areas too.

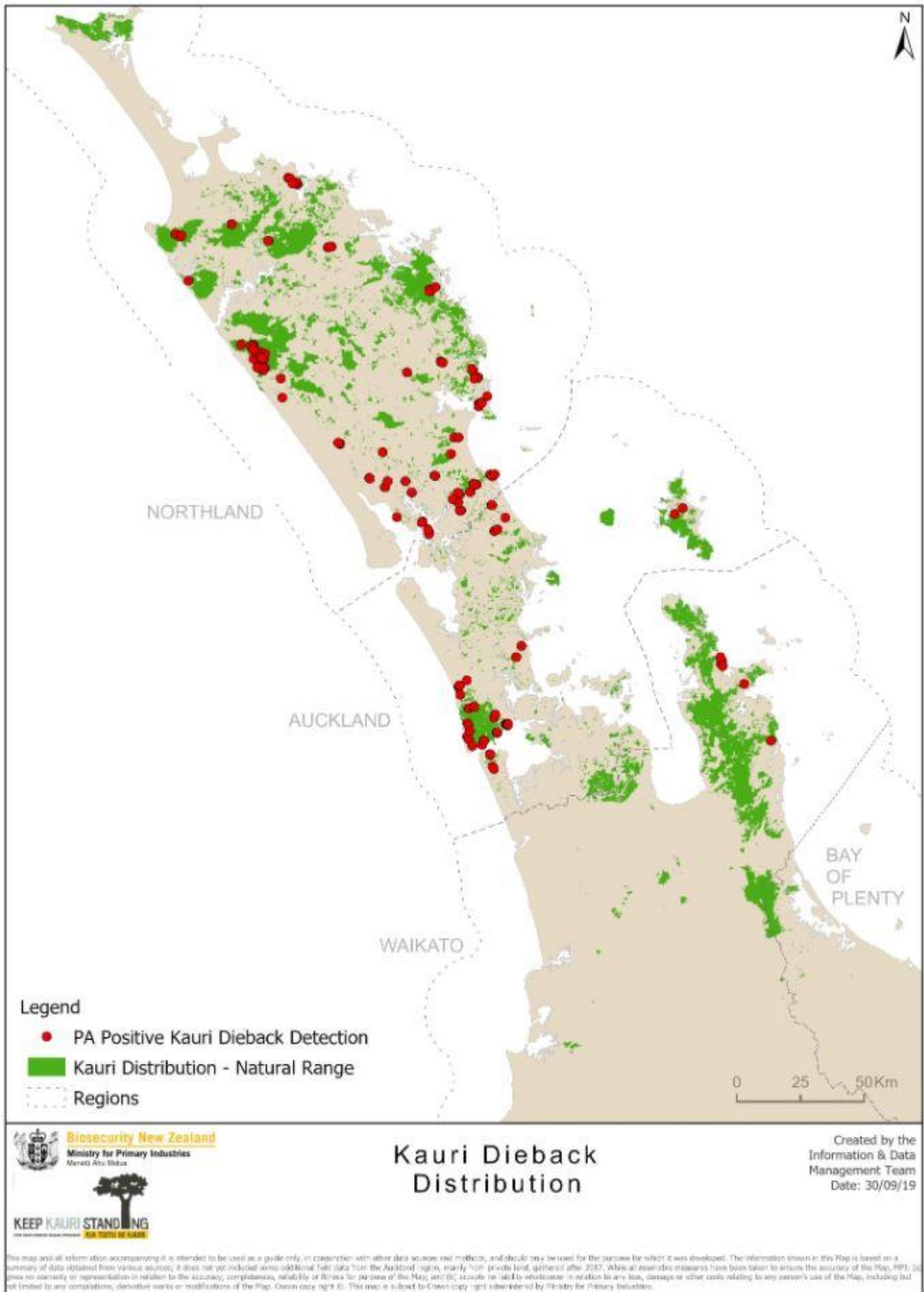


Figure 1. Natural distribution of Kauri and locations of confirmed Kauri dieback (Source: Keep Kauri Standing website, dated 30.09.19).

4 *Kunzea and Leptospermum (kanuka and manuka)*

4.1 Submissions

There are three submissions (Table 3) seeking to address the potential threat to the species kanuka and manuka.

Table 3. Submissions made requesting changes to Waikato District Plan regarding kanuka and manuka.

Submission point	Submitter	Decision requested
585.37	<i>Unspecified</i> Lucy Roberts for Department of Conservation	Add new objectives, policies and rules to recognise and implement measures to address and manage the revised conservation status of <i>Kunzea</i> and <i>Leptospermum</i> taxa.
FS1342.159	Federated Farmers	Opposes
585.43	Lucy Roberts for Department of Conservation	Amend Policy 3.1.2(c) Policies to appropriately recognise and implement measures to address and manage <i>Kunzea</i> and <i>Leptospermum</i> in light of their re-assessed conservation status.
FS1342.162	<i>Federated Farmers</i>	<i>Oppose.</i>
81.97	Waikato Regional Council	Amend Policy 3.1.2(c) Policies as follows: (c) Provide for the removal of Manuka or Kanuka <u>for domestic firewood or arts and crafts</u> on a sustainable basis.
FS1342.37	<i>Federated Farmers</i>	<i>Oppose</i>

4.2 Myrtle rust

Myrtle rust (*Austropuccinia psidii*) is an invasive fungal pathogen that affects the stems and leaves of plants within the *myrtaceae* family and can be identified from its distinctive rust-like spots with yellow pustules. Myrtle rust spores are easily spread through wind across large distances but can also be transferred through human and insect movements. Ideal conditions for myrtle rust to spread and infect vegetation appear to be during warm and windy conditions.

Myrtle rust was first identified within New Zealand in March, 2017 on Raoul Island and then not long after in a plant nursery in Kerikeri (May, 2017). Since then, myrtle rust has spread throughout the North Island to the northern parts of the South Island, commonly occurring in Taranaki, Bay of Plenty, Waikato, Auckland and Wellington (Figure 2). The Ministry for Primary Industries initiated an eradication response immediately after the first detection, however this has since transitioned into long-term management. There is now a strong research focus on discovering ways to manage and slow the spread of the disease.

Myrtle plant species are generally shrubs or evergreen woody trees, contain essential oils and produce flower parts in multiples of four or five. There are 37 native myrtles in New Zealand including pohutukawa (*metrosideros excelsa*), rata (*metrosideros umbellata*), manuka (*Leptospermum sp.*) and kanuka (*Kunzea spp.*), swamp maire (*Syzygium maire*) and ramarama (*Lophomyrtus bullata*), meaning there are a wide range of host species for myrtle rust.

Species that appear to have been most affected in New Zealand by the disease include *Lophomyrtus sp.* (ramarama), *metrosideros sp.* (pohutukawa) and *syzygium sp.* There is little evidence of manuka and kanuka populations being adversely affected by infection of myrtle rust within Waikato and New Zealand.

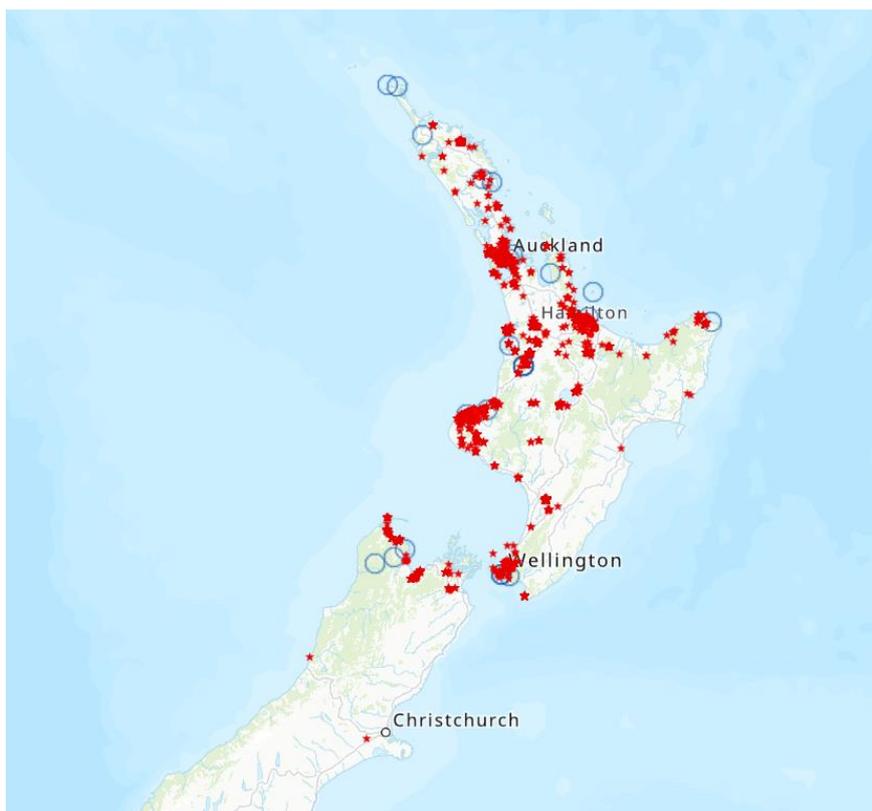


Figure 2. Distribution of myrtle rust infections throughout New Zealand (data gathered between May 2017 – June 2018). Screenshot taken from Manaaki Whenua myrtle rust database.

4.3 Kanuka and manuka

There are 10 species of kanuka (*Kunzea var.*) found in New Zealand, only one of these species *Kunzea robusta* is found in the Waikato District. *K. robusta* is a tall common tree species found widely across the north and south islands of New Zealand. It is very common in the Waikato District.

There are 2 native species of manuka (*Leptospermum spp.*) found in New Zealand, only one of these species *Leptospermum scoparium var. scoparium* is found in the Waikato District. *L. scoparium var.* is common shrub or small tree species found widely across the north and south islands of New Zealand. It is very common in the Waikato District.

Both *K. robusta* and *L. scoparium var.* are members of the *Myrtaceae* family therefore, despite their common status nationally and within the district the Department of Conservation took a precautionary approach when myrtle rust was discovered in New Zealand in 2017. This resulted in a review and upgrade of each species' conservation status from Not threatened to At Risk – Declining in the case of *L. scoparium var.* and Threatened, Nationally Vulnerable in the case of *K.*

robusta (De Lange et al., 2017). As a result, this triggered at least the potential need for protection and management of these species.

However, the Draft National Policy Statement for Indigenous Biodiversity (DNPSIB) discusses that manuka and kanuka should be exempt from management requirements for development or land use as they are only classified as Threatened as a precaution against myrtle rust. The following text has been extracted from the DNPSIB relating to managing adverse effects on manuka and kanuka.

Section 3.9 Managing adverse effects on SNAs

(4) Subclause (1) does not apply to managing adverse effects in the following circumstances: an area comprising kānuka or mānuka and that is identified as an SNA solely because it is at risk from myrtle rust.

Section 4.1 Ministry for environment monitoring and review

(2) Clause 3.9(4)(c) (which provides that adverse effects in SNAs that comprise kānuka or mānuka and are identified as SNAs solely because of risk from myrtle rust, are not to be managed in the same way as other SNAs) must be reviewed within five years after the commencement date.

Mānuka and Kānuka (Appendix 2, Page 37)

*The recent arrival of myrtle rust (*Austropuccinia psidii*) in New Zealand (April 2017) is anticipated to have significant, negative consequences for all New Zealand Myrtaceae taxa. However, precisely what those impacts will be is not yet known. As a result, a precautionary approach has been taken in the most recent New Zealand Threat Classification System lists for vascular plants and all Myrtaceae taxa have been classified as Threatened. However, some Myrtaceae taxa are relatively common in some areas, in particular mānuka and kānuka would classify as Threatened only due to the risk of myrtle rust. If a Significant Natural Area is identified only because of the presence of mānuka and kānuka that is considered Threatened only because of the threat posed by myrtle rust, it should not be managed as if it is a Significant Natural Area. This exception must be reviewed within five years of gazettal.*

4.4 Evidence at the national level of effects of myrtle rust on Kanuka and Manuka

After myrtle rust was discovered in New Zealand, a wide-spread surveillance and detection programme was initiated. A database collated all information from surveys and public observations between May 2017 and June 2018. The majority of confirmed cases of myrtle rust affected *Lophomyrtus* sp. (ramarama and rohutu), *Metrosideros excelsa* (pohutukawa), and *Syzygium* sp. (swamp maire and exotic lilly pilly). There were no detections of myrtle rust on any native *Kunzea* species, and only a single detection on a manuka tree (found in Taranaki) out of 8,500 plants sampled. Laboratory studies have however proved that manuka is susceptible to myrtle rust suggesting that physiological or environmental factors may limit infections within natural manuka populations. This has also been reported on similar studies in Australia. (Toome-Heller et al. 2020)

Artificial studies on kanuka also suggest they are susceptible however the studies showed that they do have more resistance than other New Zealand *Myrtaceae* species, hence why significantly more infection is being observed in *Lophomyrtus* and *Metrosiderous* species. There is evidence that phenotypic traits that provide resistance to stem and leaf infection was found in the majority of *Leptospermum* and *Kunzea* species (Smith et al. 2020).

4.5 Evidence within Waikato region of effects of myrtle rust on Kanuka and Manuka

Myrtle rust was first detected within the Waikato in May of 2017. (Toome-Heller et al. 2020). Between May 2017 and June 2018, known species infected within the Waikato region were *Agonis*, *Lophomyrtus*, *Melaleuca*, *Metrosiderous* and *Syzygium* sp. (Toome-Heller et al.). There appears to be no evidence that any manuka or kanuka trees have been infected in the Waikato since then.

4.6 Summary and Recommendations

As Myrtle rust has only been present within New Zealand for three-four years there is a limited amount and unknown accuracy of documented information. Research is currently on-going so it is likely that in another year or two there will be a greater understanding of myrtle rust infection among New Zealand *Myrtaceae* species. However, current data suggests that kanuka and manuka species throughout the country and within the Waikato District are minimally affected by the disease and both *K. robusta* and *L. scoparium* var. remain amongst the commonest tree/shrub species within the Waikato District.

Given that the draft policy statement for indigenous biodiversity excludes the requirement for management of kanuka and manuka due its pre-cautionary Threatened status at this present time, it is considered that additional provisions in the District Plan for the management and protection of these species are currently not warranted. However, the situation should be kept under review and if new evidence suggests manuka and kanuka populations are being significantly adversely affected by myrtle rust, then policies should be re-evaluated and a plan change should be considered.

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