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The Climate Change Commission  
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I am writing on behalf of the Waitākere Ranges Protection Society (WRPS) to submit on The Climate Change Commission's draft advice – He Pou a Rangi.

*Background on the WRPS*

The WRPS was incorporated in 1973. Its purpose is the conservation and protection of the Waitākere Ranges and to oppose any activity that may threaten or adversely affect the natural environment in the area, including the coastal and marine environment.

WRPS and its members are strong advocates for the conservation and protection of the natural environment of the Waitākere Ranges and WRPS was one of the key groups promoting the concept of the Waitākere Ranges Heritage Area (WRHA) for 35 years before it was achieved through an Act of Parliament in 2008.

## *Introduction*

The WRHA is of local, regional and national significance due to its unique heritage features outlined in the Waitākere Ranges Heritage Area Act (WRHA Act) which (s7 (1) (2)) sets out that the heritage area is of national significance, with heritage features including that the area provides a diversity of habitats for indigenous flora and fauna; (s7 (a)) its terrestrial and aquatic ecosystems of prominent indigenous character and (l) its distinctive local communities. The WRHA is also unique because of the population it services; New Zealand's largest metropolitan area with a relatively low proportion of accessible natural/non-built environments. The WRHA Act clearly states that among the heritage features (s7) of the area are: (g) the opportunities that the area provides for wilderness experiences, recreation, and relaxation in close proximity to metropolitan Auckland (m) the Waitākere Ranges Regional Park and its importance as an accessible public place with significant natural, historical, cultural, and recreational resources. It is therefore of significant and increasing value as it constitutes an essential public amenity for an increasingly urbanised population.

The WRHA Act sets out objectives which include to protect, restore and enhance the WRHA and its heritage features. Adverse cumulative effects of activities on the WRHA's heritage features must also be recognised and avoided. Auckland Council is also obliged, when considering decisions that threaten serious or irreversible damage to a heritage feature, to endeavour to protect the heritage feature.

## *Kauri dieback*

Kauri dieback disease is threatening one of New Zealand's most iconic species. It is the single greatest threat to conservation values in the Auckland region. The disease could, if not successfully managed, eliminate kauri from the region and from New Zealand. The Department of Conservation lacks the resources to manage its own lands, which leaves Auckland Council's regional parks in the Waitākere and Hunua Ranges as the "last chance for kauri" on the mainland of the Auckland Region and possibly in New Zealand.

## *Executive summary*

The Climate Change Commission's draft advice – He Pou a Rangī – is a comprehensive, optimistic and ambitious new plan. We agree that current policies do not put Aotearoa on the right track to reach 2050 targets, and there

is a need for change. We acknowledge and commend the focus on decarbonisation of industries, rather than increasing reliance on (plantation) forestry. The general recommendations and proposals are supported.

However there is not enough emphasis on the importance of permanent native forests, or the mitigation of drought and fire risks. WRPS feels strongly about the need to include public transport in areas such as the WRHA to reduce the negative impacts of increasing numbers of vehicles visiting and we would also like to see increased funding for caring for our native forestry, including more research into pest pathogens such as Kauri dieback, pest animal control for pigs, deer, goats possums, and an increase in urban tree planting.

WRPS wishes to emphasise the following points, which are of particular relevance to the Waitākere Ranges Heritage Area:

1) Native vs exotic forestry:

We strongly feel that there is not enough emphasis on the importance of permanent native forests in Aotearoa. The biodiversity and soil health benefits need to be further emphasised, as well as the important role native forests have in increasing the country's resilience to climate change via long-term carbon sinks. While exotic forests provide many of the same benefits as native forests over much of the forest growing cycle, there are negative impacts on waterways when exotic production forests are harvested through clear-fell.<sup>1</sup> On farms native vegetation can reduce soil erosion and the amounts of phosphorus into waterways by 60%. Exotic forestry provides in comparison poor habitat for native biodiversity, harbours pest animals, plants, potentially pathogens, creates pest plant problems with wilding pines, depletes soil which contributes to erosion, sedimentation of waterways and destruction when harvested. Permanent native forests continue to sequester carbon for hundreds of years, eventually reaching 920 tCO<sub>2</sub> per hectare. Added benefits of biodiversity, habitat for birds and other species, as well as cultural recreational and spiritual benefits.

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<sup>1</sup> Baillie & Neary, 2015

## 2) Water and Fire:

One concern which has not been thoroughly evaluated in the plan is regarding water. In the evidence report supporting the draft advice document, on page 568 it is stated that exotic afforestation can decrease water yield by 30-50%. This is a concern especially in regards to increasing fire risks and increasing drought risks. The trade offs between wood production, carbon sequestration and water production should be carefully evaluated, particularly in important water supply areas.

## 3) Transport:

WRPS would like to see support for public transport to outer areas of the Waitākere Ranges Heritage Area. The provision of some form of public transport service to popular sites such as Piha, Cascades and Arataki – and even Wainamu, Te Henga and Karekare – would reduce the amount of cars, traffic, and negate the need to develop new car parks. One of the main impacts is the issue of car parking in these areas – increasing accessible car parking on the periphery of the WRHA and having shuttle bus pick up points would negate the need to develop new car parks within the WRHA. An additional advantage of using low impact small buses (to cope with the winding roads) during peak times *could* be considered and cost against the wear and tear on roads and the need to upgrade current car parking in future. Providing such transport would also play a role in directing visitors more easily to the sites better able to cope with large numbers and in protecting more sensitive locations.

Other points:

- 4) There are currently limited incentives for planting permanent native forest on private land; incentives are needed to get more native trees planted. Paying landowners for the carbon permanently stored by rehabilitation and restoration projects would hugely benefit the Waitākere Ranges Heritage Area. We support this being included in the draft advice.

- 5) There needs to be increased funding available to care for the native bush we do have. There is mention of some of the threats faced by native bush (pests, need for fencing) but there is no recommendation for allocating further funding for this. Investment to maintain healthy forests is essential for the forests survival and carbon benefits to continue. In Auckland regional parks account for over 35,000 ha of native forest – more than 27,000 ha are in the Waitākere Ranges – but these invaluable areas of bush suffer from under-funding.
  
- 6) There is a case for urban forests and tree planting, especially with dense wood trees such a pohutakawa and rata, which hold more carbon.<sup>2</sup> Urban tree planting can support stormwater management as well as climate change mitigation through carbon storage and air pollution removal.<sup>3</sup> Steps that can be taken include reversing the Resource Management Act ban on including urban tree protection rules in district plans, amending processes so that the scheduling of notable trees can occur, and the protection is meaningful, and that tree planting be required in sites being intensified to increase urban tree forest and provide ecological linkages. Strategic planting of urban trees can support a range of ecosystem services in addition to carbon storage. Planting of tree species with high wood densities that are suited to the environment and are long-lived would increase carbon storage potential and the climate change mitigation capacity of urban trees.<sup>4</sup>
  
- 7) WRPS are glad to see the threats of kauri dieback and myrtle rust are noted in the evidence report. The report also stated that species such as Kauri remove carbon dioxide at greater rates: even more reason to invest more into protective measures and further research. The potential effects of pine plantations on nearby native species health needs to be studied further:

Kauri (*Agathis australis*) is one of the most heavily impacted (by plantation industry) indigenous tree species of NZ with less than 1% for

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<sup>2</sup> Dale, J. M. (2013). Evaluation of methods for quantifying carbon storage of urban trees in New Zealand. Paper as partial fulfilment of Bachelor of Engineering (Honours) thesis, University of Auckland, Auckland, New Zealand.

<sup>3</sup> Dale, M. J. (2013).

<sup>4</sup> Dale, M. J. (2013).

primary forest remaining as fragments adjacent to pastoral farming and exotic forest plantations.<sup>5</sup>

Soil microbial communities play a key role in maintaining tree health and resilience to pathogen spread. A recent study<sup>6</sup> used gene sequencing to identify that there are significant bacterial and fungal community compositions between kauri and pine forest soils. Fungal communities displayed the largest differences in diversity and composition. The research revealed that significant shifts in the soil microbial communities surrounding remnant kauri forest fragments, affects functions in disease suppression and plant health.<sup>7</sup>

Kauri dieback disease, caused by *Phytophthora agathidicida*, currently threatens the kauri forest ecosystem.

Pine soil had a significantly higher fungal diversity compared to kauri soil, and typically ecosystems with lower resident diversity are more vulnerable to invasion.<sup>8</sup> This opens up the question as to whether the relatively low fungal diversity of kauri soils could be making them more vulnerable to invasive soil-borne pathogens.

The risks posed by unintentional introduction of invasive microbial species from pine plantation establishment to the remaining kauri forests are not yet fully understood, but this study suggests the potential for pine forest soils to support survival of *P. agathidicida*, thereby acting as a pathogen reservoir.

## Conclusion

The Commission states its overall vision is of a “thriving, climate-resilient and low-emissions Aotearoa”. The Government needs a cohesive strategy that includes a focus on biodiversity, water and climate resilience. WRPS would like to see more emphasis on the importance of permanent native forests, and the implementation of protective measures, further funding into ensuring the

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<sup>5</sup> Byers, A., Condrón, L., Donovan, T., O'Callaghan, M., Patuawa, T., Waipara, N., Black, A. (2020). Soil microbial diversity in adjacent forest systems – contrasting native, old growth kauri (*Agathis australis*) forest with exotic pine (*Pinus radiata*) plantation forest, *FEMS Microbiology Ecology*, Volume 96, Issue 5, May 2020. <https://doi.org/10.1093/femsec/fiaa047>

<sup>6</sup> Byers, A. *et al.* (2020)

<sup>7</sup> Byers, A. *et al.* (2020)

<sup>8</sup> Byers, A. *et al.* (2020)

health and well-being of our native forests, considering the significant and positive effects native forests have on biodiversity, water, and climate.

The CCC draft states that planting native forests is a better way of storing carbon long-term than exotic forestry, but fails to recommend the rehabilitation of degraded and cut-over native forest by means of fencing and pest control.

Considering the current threat posed by kauri dieback disease, further understanding of how differing soil microbial communities impact of the health of our native forest fragments and their ability to respond to pathogen invasion is essential and necessary to be taken into account when planning for future healthy native forests in NZ and should be also taken into account for current and future pine plantations placements.

Yours sincerely,

A handwritten signature in black ink that reads "AM Fomison". The signature is written in a cursive style with a vertical line to the left of the text.

Anna Maria Fomison  
President  
Waitākere Ranges Protection Society