Review

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Threats section - Shared Services – DOC
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Kauri Dieback disease

Investigation into its distribution within the Waitakere Ranges Regional Park 2016

Overall

The report covers more than an investigation of distribution of PA. If that was the aim, then the report needs to be modified to reflect that aim or the title changed to reflect the reports contents which coverer likely ongoing adaptive management.

The report is informative but could be improved with some additional and more specific assessment of the special distribution of Pa symptomatic trees in the Waitakeres. The methods and the assessment of the data are difficult to follow and need to be made clearer. I currently cannot follow how the data were assessed and how robust the results are as I cannot understand coverage. The recommendations do not appear to offer clarity about how an adaptive management approach could be implemented.

Methods

It is unclear as to what the survey in any one part of the Waitakere ranges was. It appears to have comprised random assessment of 304 symptomatic trees (not mapped) and some track classification system for kauri areas on tracks. However, it is unclear how further work outside of these 304 selected sites this is translated into the mapping and how areas of kauri were assessed as selected for survey.

There is no indication of how bait lines were assessed.

There is no definition of what a waterway is.

Section 6.2 The 30 m and 15 m buffer section is not able to be understood. Was this is applied irrespective of vegetation or were the issues in 6.3 taken into account at that time?

Section 6.4 I cannot follow what has been done here. This makes it very difficult to assess what the results mean (are they an assessment or a sample approach within ArcView). More detail or better figures are needed to explain what was done within ArcView.

Results

It is not possible to assess how the method of the two survey types are translated into the results, or the actual coverage of kauri within the surveys.

Section 7.1 and 7.2 The presentation of the results could be improved with better figures and maps. The 101 zones could be mapped and histograms produced to show the size distribution of symptomatic and non-systematic areas.

The pink and red in Figures 1 and 2 do not stand out well. This is also a problem in Appendix 5. The colour of one of them could be changed. The Legends on the maps in Appendix 5 and 7 are too small.

If the assessment of waterways and bait lines is robust then I suggest you look at using statistically robust methods like Analysis of Variance to assess the data around the proximity to human vectors and waterway transfer routes. The current report does not adequately deal with the relationships between these factors. There is no assessment of the distribution and risks to the remaining non-symptomatic areas of kauri forest or their distance from vectors and how that could be changed by management of vector risk. In other words there is no results that can be translated into an adaptive management approach.

There appears to be no use of the track classification system in the methods. It would potentially be more informative to have each track broken down into the classification, length of kauri, number of contamination zones infected and not infected and the proportion of each. It may be useful to have an assessment of track condition, and pig sign presence tabulated as well. It appears from the map that entire track systems are contaminated and needing recommendations for upgrade or closure? It is not evident where track maintenance will have the greatest benefit and that may be needed to make sure that the recommendations can be translated into actions.

I would expect that some assessment of the data you hold on pigs could be done. It appears that the question is some form of correlation between pig sign and dieback zone. Maybe the question could be changed to where pig sign is. Is sign significantly more frequently encountered within dieback zones as opposed to non-dieback zones. Is sign in the protection zones? What types of pig sign are in dieback zones? The way it is written in this report I question if there should be any comments about pigs in the results section.

Conclusion and Evaluation

No comments at this time given my comments about my ability to understand the results section.

Recommendations.

The recommendations are broad but it appears from what is presented in Appendix 5, and potentially from what you hold on track networks, they can be made a lot more specific and hard hitting. The current recommendations do not appear to represent the serious nature of the comments in the first paragraph of the conclusions. There is no hierarchy within the list of recommendations. I am unsure what the adaptive management approach is and how these recommendations relate to what the authors are considering. I would expect that this could be specified more clearly and with some preliminary work (examples) bringing in the existing list of

holistic recommendations. That depends on how you want to relate the track information you have collected to the kauri dieback symptomatic areas.

As an example of what I am getting at:

A Waitakere Ranges Regional Park access management plan needs to be prepared to plan how to respond in the short and long-term to the presence of PA or all kauri will be lost. The data from this report could be used to define implement immediate access and adaptive monitoring objectives like those listed below, and ultimately provide public access with significantly reduced risk of the transfer of PA within and from the Waitakeres.

- *XXXXX tracks that are contaminated need to be closed until upgrades and new sanitary stations reduce the potential for users to spread PA transfer.*
- *XXXXX should remain open but need to be upgraded to a year-round dry surface.*
- *XXXXX tracks require sanitary station upgrades*
- *Areas that are defendable due to their proximity to human and animal vectoring need to be identified, assessed and then protected. (i.e. identified by mapping, assessed by soil sampling and protected by track closures and pig hunting or fencing etc).*