

**IN THE MATTER**

of the Resource Management Act 1991

**AND**

**IN THE MATTER**

of Hearing 21A: Significant Natural Areas

of the Proposed Waikato District Plan

---

**STATEMENT OF EVIDENCE OF DR YANBIN DENG**

**For the Waikato Regional Council**

**DATED 29 October 2020**

---

## Table of Contents

1	Introduction.....	3
2	Scope of Evidence.....	3
3	Lack of robust SNA technical Assessment.....	4
4	Conclusions.....	6
5	References:.....	7
6	Appendix.....	8

## 1 Introduction

- 1.1 My name is Yanbin Deng. I am a Scientist in the Geothermal & Air, Land Ecology & Contamination Team at the Waikato Regional Council. I have been in this role since 2007.
- 1.2 My highest academic qualification is a PhD in Biological Science from the University of Auckland, New Zealand. I am a member of the Waikato Botanical Society, New Zealand Ecological Society and Society for Ecological Restoration (international). I am also a member of the Science Panel at the Waikato Regional Council who are responsible for setting and managing peer review procedures of the technical report publications.
- 1.3 My role as a terrestrial ecologist at Waikato Regional Council encompasses the following tasks.
- 1.4 I provide the expertise, knowledge and information needed to manage indigenous terrestrial ecosystems in the Waikato region. I have fifteen years' experience working in ecology with a focus on vegetation succession from environmental changes in the North Island of New Zealand and ecological restoration for indigenous forests in the Waikato region.
- 1.5 I have authored nine technical reports including six Significance Natural Areas (SNA) reports from different districts of the Waikato region. I was the principal author of research papers published in *Journal of Biogeography*, *Regional Environmental Change* and *Journal of Vegetation Science*. Furthermore, I have co-authored nine peer-reviewed journal articles which are relevant to ecology and palaeoecology.
- 1.6 I have been working on the "Prioritisation of SNA for Biodiversity Management in the Waikato Region" project for Waikato Regional Council since 2007. My managerial tasks include scoping contracts, writing contract specifications for ecological attributes and ranking, report outlines, and presiding over peer reviews for the SNA reports.
- 1.7 I confirm that I am familiar with the Code of Conduct for Expert Witnesses as set out in the Environment Court Practice Note 2014. I have read and agree to comply with the Code. Except where I state that I am relying upon the specified evidence or advice of another person, my evidence is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

## 2 Scope of Evidence

- 2.1 My evidence is given on behalf of Waikato Regional Council.

- 2.2 The submission made by Waikato Regional Council addressed several aspects that relate to the SNA in the Waikato district. The submission sought amendments to improve consistency with regional policy documents as well as to reinforce the Waikato district SNA outputs. Even though I was not involved in the preparation of Waikato Regional Council's submission, dated 18 September 2018, I managed the Waikato District SNA project working on the SNA methodology and identification procedures from 2015 to 2018.
- 2.3 My evidence reinforces the Waikato Regional Council submission and reflects my professional opinions as a terrestrial ecologist. I reviewed the S42A, part 1 and part 3 reports (Chibnall, 2020 a and b) which are relevant to SNA identification methodology and data validation, and Waikato District Plan Review Significant Natural Areas assessments report (Turner 2020). In addition, my evidence was supported by input from terrestrial ecologist Dr Paul Dutton and Spatial Analyst Craig Briggs.
- 2.4 In my evidence I address the following matters:
- Lack of robust SNA assessment to support S42A report recommendations.
  - Lack of recognition of provisional SNA dataset and mapping.
  - The importance of DOC protected land in protecting biodiversity in the Waikato District.
  - Some specific examples of incorrect changes to SNA status.

### 3 Lack of robust SNA technical Assessment

- 3.1 I do not consider Mr Turner's (2020) Significant Natural Areas Assessments report to be robust or comprehensive as outlined below.
- 3.2 Mr Turner's (2020) report has not aligned with the standard SNA data validation methodology (Environment Waikato & Wildland Consultants Ltd, 2002 and Kessels Ecology, 2017). The site visits were undertaken at the property level, not at the SNA site scale, which means only small parts of entire SNAs have been ground truthed. Also, Mr Turner has not followed the "convention" of SNA numbering, making it difficult to track small changes to larger SNA parcels. This failure to follow methodology has resulted in inappropriate site reassessment and significance ranking.

### **Lack of recognition of provisional SNA dataset and mapping**

- 3.3 A critical oversight in Mr Turner’s approach and report (2020) relates to the lack of recognition of the process of provisional SNA mapping and dataset development. This involved multiple parties and significant investment across those parties. The SNA technical report of Waikato district (Kessels Ecology, 2017) stated:

*“A number of methods were used to engage with landowners who had potentially significant natural areas on their property, as detailed in section 3.4.3. Information was collated from 678 phone calls. Further, information from 152 landowners collected at the workshop meetings, and 354 feedback forms was also incorporated in the review process. In addition, detailed information was taken from the 50 site visits. Feedback provided by landowners was largely positive in terms of appreciating the value of their natural feature and seeking ways and resources to manage them. Discussions often focussed on how to manage pest animals, pest plants, the status of grazing/fencing of the natural areas, as well as seeking information on how to manage the effects of surrounding land use. This information was added to the Master Dataset and changes made where and when appropriate.”*

- 3.4 This comprehensive consultation process should not be easily discarded given that both Waikato Regional Council and Waikato District Council have invested a large amount of resources for the identification and assessment of these SNA sites. At a minimum, it would seem that the 50 sites visited and updated by previous ecological assessment, should also be included as part of Ms Chibnall’s report (2020a) - Option 5.

### **The importance of DOC protected land in the biodiversity protection of the Waikato district**

- 3.5 There is also the question of the large amount of SNA on Department of Conservation (DOC) land, which amounts to approximately 23,000 ha. In DOC’s submission they have supported retention of SNA mapping. DOC land should be retained as part of SNA mapping. The ability to manage biodiversity across public and private boundaries is a critical part of the overall biodiversity management picture (see Appendix, Figures 1 and 2). For example, there are 105 nationally threatened and at risk species that have been recorded in the SNA dataset and report in the Waikato District (Kessels Ecology, 2017), indigenous biodiversity at species level does not recognise such artificial boundaries.

### **Some specific examples of incorrect changes to SNA status**

- 3.6 Ms Chibnall's report (2020b) paragraph 814 accepts the deletion of manuka /kanuka scrub from SNA 60 around 1665 Whaanga Road. I note that this is part of a site that has been ranked by DOC as a Threatened Species Management Unit. In my opinion, the extension of the DOC SNA into private land has ecological and functional importance as a buffer or barrier to external influences from the environment. I consider that the manuka /kanuka scrub growing at the site potentially provides habitat to threatened species. Also, the proposed deletion of part of SNA 60 could potentially inhibit threatened species migration and ecological corridors from mountain to sea, given its status as a DOC Threatened Species Management Unit.
- 3.7 The reasoning behind the decision to delete SNA is also not clear. For example, "*low value vegetation*" is not defined and some descriptions in the Mr Turner's approach and report (2020) such as "both species (kanuka/manuka) are extremely common within the District and grow as a pasture weed in many localities". In my view Mr Turner's report (2020) does not provide sufficient description of which vegetation types to support the assertion that the vegetation is of "*low value*".
- 3.8 Submission paragraph 808 in Ms Chibnall's (2020b) report states the deletion of manuka/kanuka vegetation from SNA 2940 around 1384 Whaanga Road included manuka/kanuka scrub regeneration vegetation over pasture. However, my assessment of aerial imagery from 1997 shows the vegetation had a similar extent to what it was using 2017 Waikato Regional Aerial Photography Service (WRAPS) imagery (Appendix, Figures 3 and 4). In my view, manuka/ kanuka scrub of this age represents a mature ecosystem and functionally as ecological corridors and step stones for threatened species migration between SNA sites 2940 to 60.

## **4 Conclusions**

- 4.1 In preparing the comprehensive provisional SNA data, it is my view that the quality of the WRAPS imagery along with the amount of data and local knowledge associated with sites gives a high confidence level, and provided good evidence for the inclusion of these sites on the plan maps.
- 4.2 Mapping only a small number of sites as part of Option 5 (Ms Chibnall's report, 2020a), in my view, presents a real risk for safeguarding the biodiversity asset of the district, including rare ecosystems, threatened species and their habitats and the representativeness of vegetation types in the Waikato district.

4.3 Mr Turner's report (2020) and assessment has failed to consider the comprehensive provisional SNA dataset and maps provided by WRC. This work was undertaken in association with Waikato District Council and DOC and supported by Waikato District Council throughout the development of the proposed District Plan. This has resulted in sites (properties) being assessed in isolation from parent SNA and in isolation from the original dataset of 698 sites. The assessment, in my view, should have been aligned with the original SNA methodology.

Dr Yanbin Deng

29 October, 2020

## 5 References:

Environment Waikato & Wildland Consultants Ltd, 2002. Areas of significant indigenous vegetation and habitats of indigenous fauna in the Waikato Region: Guidelines to apply regional criteria and determine level of significance. Technical Report TR2002/15.

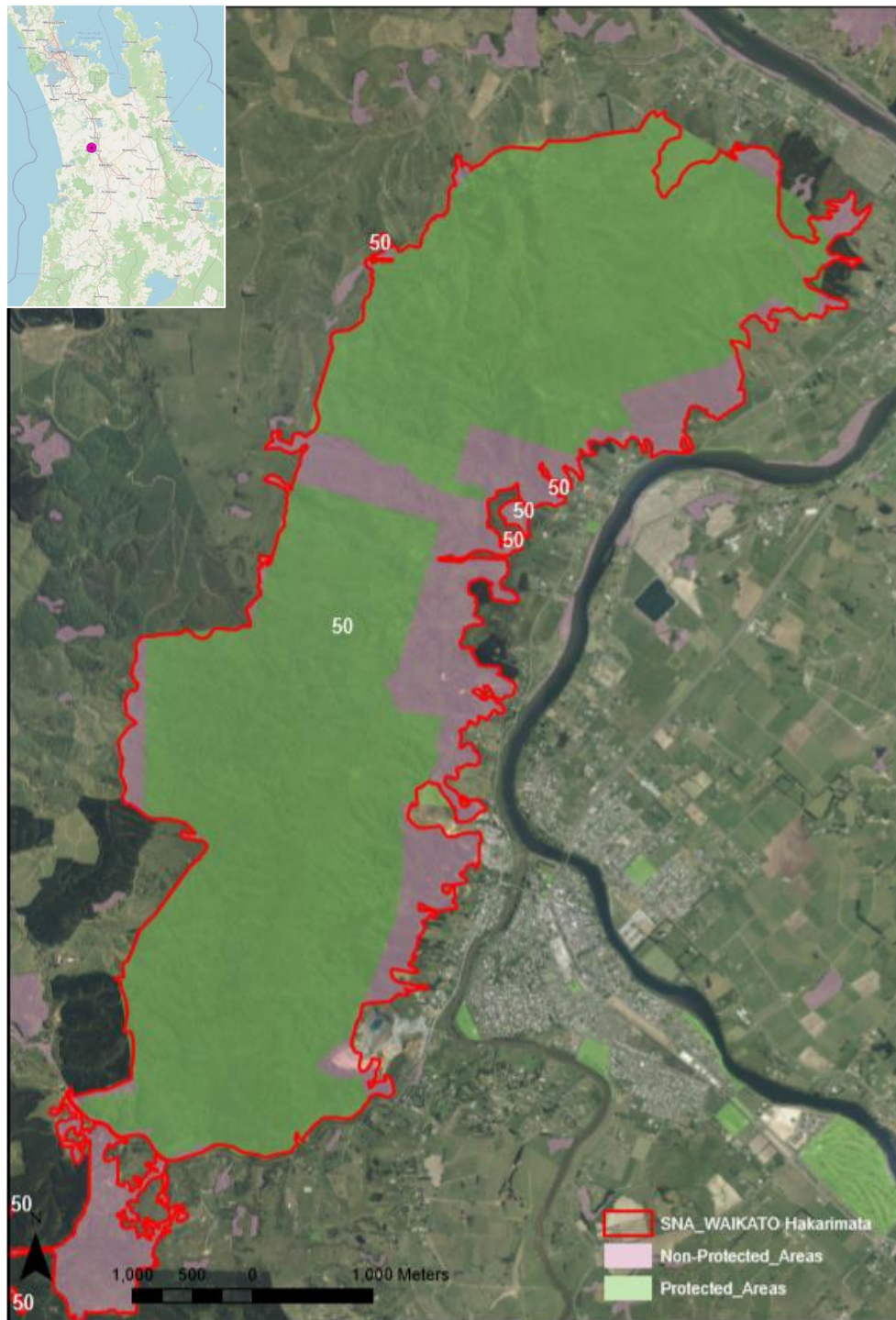
Kessels Ecology, 2017. Significant Natural Areas of the Waikato District: Terrestrial and wetland ecosystems. Waikato Regional Council Technical Report 2017/36. Hamilton, Waikato Regional Council, <https://www.waikatoregion.govt.nz/services/publications/tr201736/>.

Susan Chibnall (2020a) Section 42A Hearing Report – Hearing 21A – Natural Environments - Indigenous Vegetation and Habitats S42a Part 1 - Objectives and Policies, Waikato District Council.

Susan Chibnall (2020b) Section 42A Hearing Report - Hearing 21A - Natural Environments - Indigenous Vegetation and Habitats - S42a Part 3 – Mapping, Waikato District Council.

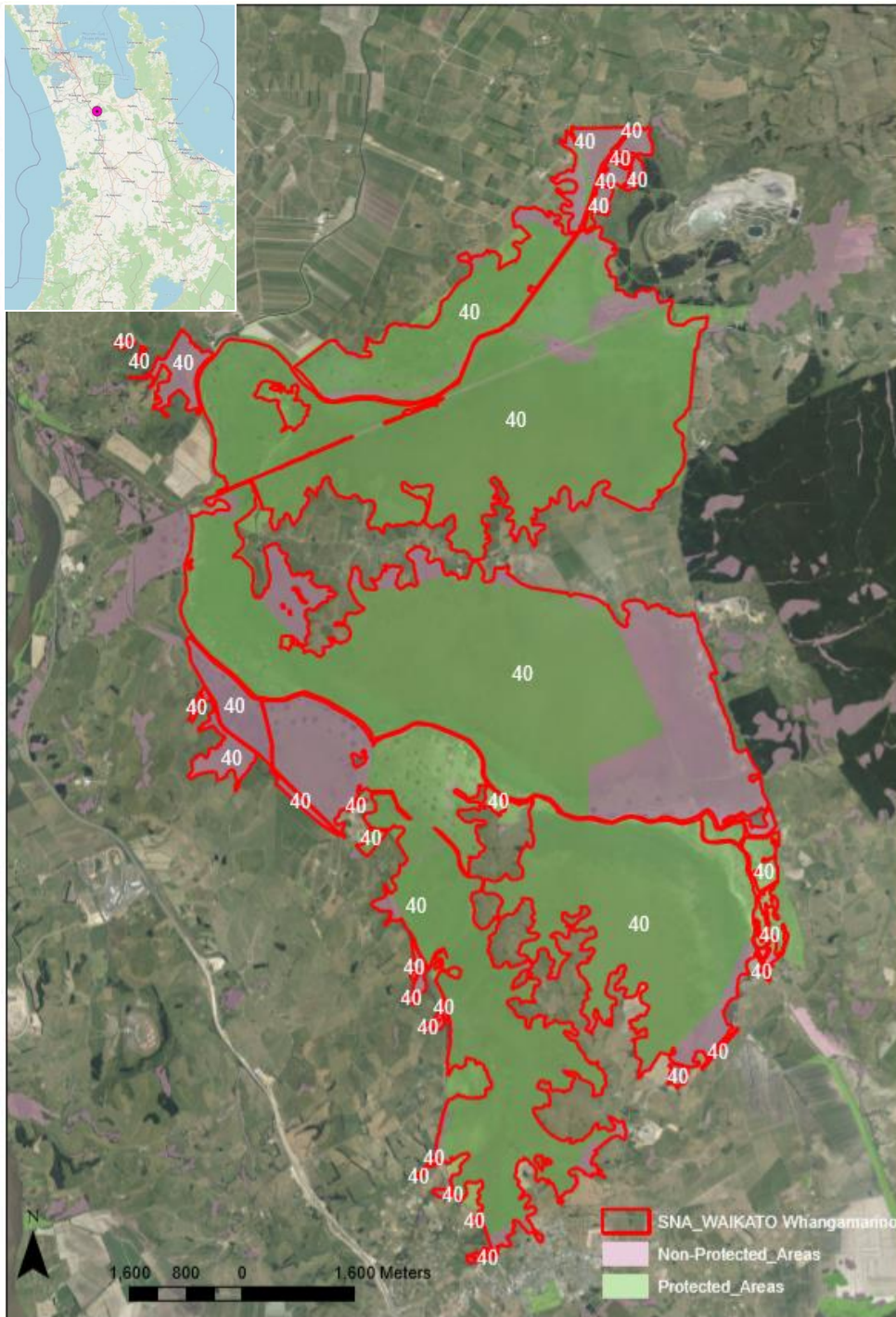
Turner 2020, Waikato District Plan Review Significant Natural Areas Assessment. Waikato District Council.

## 6 Appendix

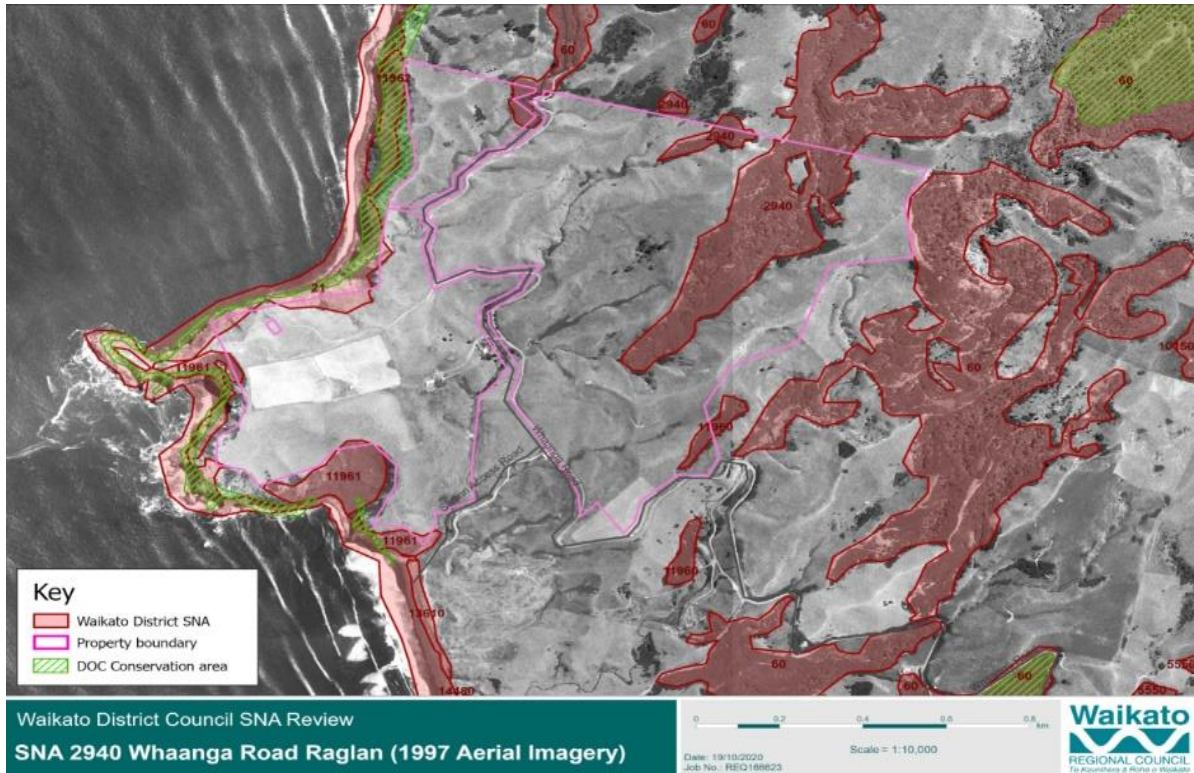


**Figure 1.** SNA 50 (Hakarimata Ranges) boundary is in RED. Non-protected areas (PINK) are contiguous with the protected areas (DOC land in GREEN).

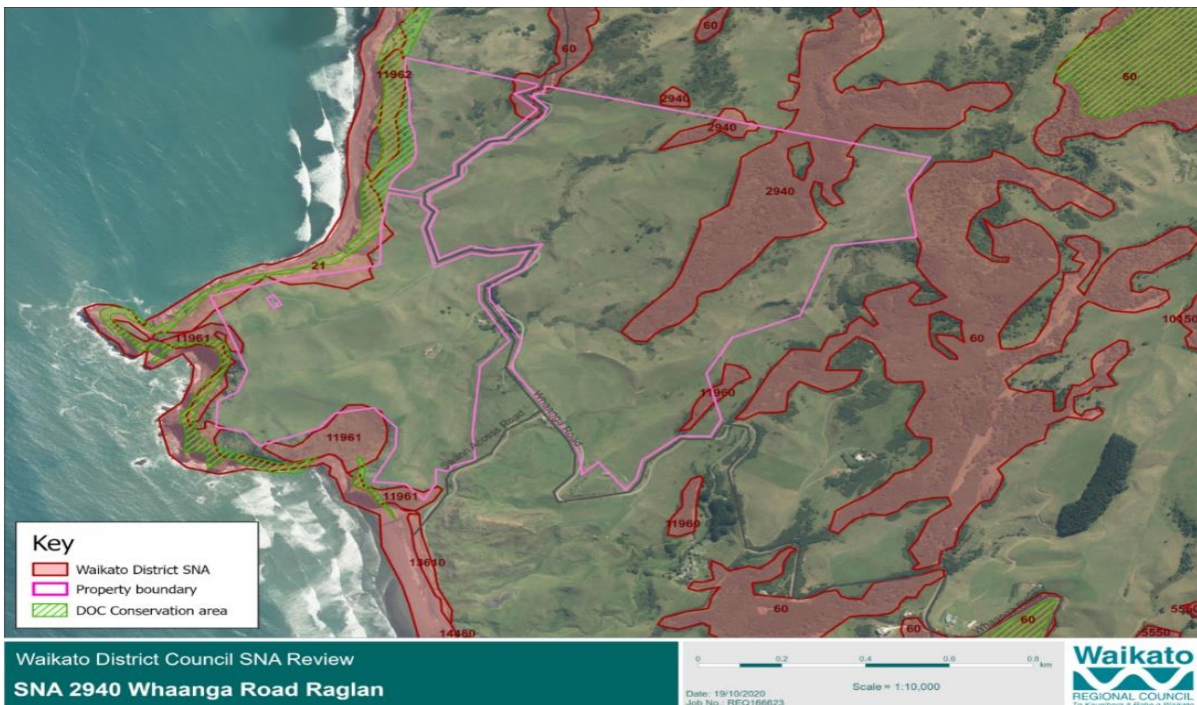




**Figure 2.** SNA 40 (Whangamarino wetland) boundary in RED. Non-protected areas (PINK) are contiguous with protected areas (GREEN).



**Figure 3.** Mr Turner has requested that the deletion of areas identified as manuka/kanuka vegetation from the SNA 2904 around 1384 Whaanga Road and states this deletion including “areas of manuka/kanuka that have regenerated over pasture within the SNA”. The aerial imagery from 1997 clearly shows the vegetation has a similar extent at that date to what it is now using 2017 Waikato Regional Aerial Photography Service (WRAPS) imagery (refer Figure 4), below).



**Figure 4** shows the extent of the SNA 2940 using 2017 WRAPS imagery.