

IN THE MATTER

of the Resource Management Act 1991

AND

IN THE MATTER

of the Proposed Waikato District Plan (Stage
1) – Hearing 22 - Infrastructure

**SUMMARY OF STATEMENT OF EVIDENCE OF TERTIA THURLEY FOR THE DIRECTOR-
GENERAL OF CONSERVATION**

15 OCTOBER 2020

Department of Conservation

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INTRODUCTION

1. My name is Tertia Thurley. My evidence in chief sets out my qualifications and experience.
2. This is a summary of the evidence in chief that I prepared in relation to Hearing 22 - Infrastructure of the Proposed Waikato District Plan.
3. This summary addresses the following:
 - (a) Long-tailed bats are highly endangered nationally;
 - (b) Long-tailed bats within urban and rural areas of Waikato District face increasing pressures from development and vegetation clearance;
 - (c) Small scale and community wind farms are an additional threat;
 - (d) An approach to address this issue.

OVERVIEW

4. Bats are New Zealand's only land mammal. There are three species of bats: the greater short-tailed, the lesser short-tailed and the long-tailed bat. All are found only in New Zealand, and all are threatened; one (the greater short-tailed bat) is possibly extinct.
5. Nationally, long-tailed bats are predicted to decline by >70% over the next three generations, which gives them the highest threat classification of Nationally Critical.
6. Habitat suitable for long-tailed bats is rare in urban and rural landscapes compared to forested landscapes. Long-tailed bats require shelter, roost sites, foraging sites, drinking sites and commuting sites. Shelter and roost sites are almost always in trees. Roosting cavities have very specific thermal requirements and are generally very rare in the landscape even when in forest. Suitable roost trees are even rarer in urban and rural landscapes given the paucity of trees. Foraging sites are typically around tree and forest edges and above canopies of trees,⁷ though they do feed over pasture as well.⁸
7. Within indigenous forests, fragmentation, degradation, habitat loss, predation by ship rats, possums, stoats and cats is the major threat to long-tailed bats causing population declines. Bats living in urban and rural landscapes are under

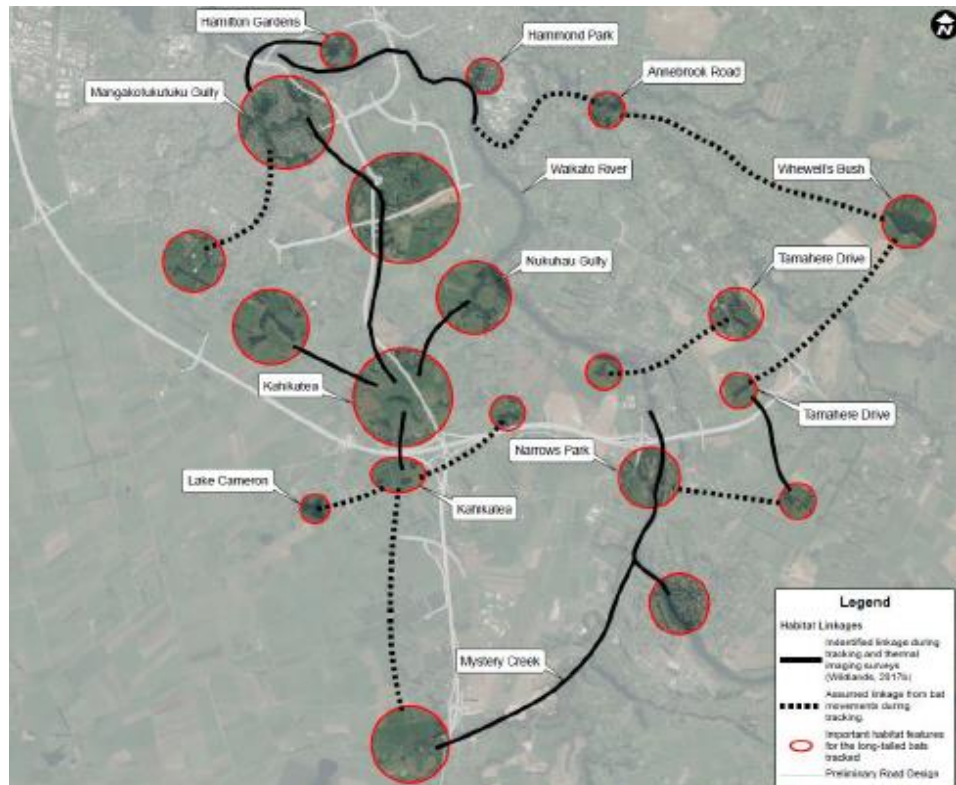
even greater pressure. As well as threats from predators, bats in these habitats have limited suitable habitat remaining, and are threatened by ongoing development and removal of vegetation.

8. The Waikato District holds several populations of long-tailed bats. There are large areas in the Waikato where bats have not been looked for, so it is highly likely that further populations exist.
9. Bats living in urban and rural parts of the Waikato District are very vulnerable due to the pressures of development in this District.
10. Internationally, large numbers of bats are killed by wind farms using large turbines. Knowledge of the impact of small wind turbines is limited, however studies show that despite bats generally avoiding small wind turbines, small wind turbines do kill bats. Additionally, avoidance behaviour by bats means that small wind turbines operating in bat habitat reduce the habitat area available for bats.

WIND FARMS EFFECTS ON BATS

11. Applying this to long-tailed bats in the Waikato District, in my opinion, long-tailed bats may avoid the area surrounding operating small wind turbines or they may not, but neither option is likely to be absolute. It is plausible that while most long-tailed bats will avoid the turbines, some will not and will die as a result of collision. Even a small number of bat deaths is high risk for small, vulnerable populations.
12. Within urban and rural Waikato, habitat suitable for bats to roost, forage and commute through is scarce and therefore valuable. It is unknown, but plausible in my opinion, that long-tailed bats would largely avoid small wind turbines when they are in operation. If so, wind turbines placed alongside roosts could cause these roosts to be abandoned. If placed along commuting pathways, e.g. gullies, hedges and forest edges, these pathways may be blocked, preventing bats travelling between roosting and foraging areas. If turbines are placed within foraging areas, this habitat also becomes unavailable to bats.
13. Bats are highly mobile animals which require us to think at a landscape scale. They require large areas to roost, forage, socialise and commute over. This is highlighted in Figure 1, which relates to a study in south Hamilton that identifies

important bat habitat for foraging, roosting and commuting routes for long-tailed bats in this area.



14. Currently mapped Significant Natural Areas (SNAs) do not offer adequate protection to bats because bats occur outside of them. Therefore, regarding small scale and community wind farm applications, matters of discretion referencing 'values' need to be applied to all the habitat these bat populations need to function, not just SNAs.

CONCLUSION

15. In my view, the best approach to minimise this risk is by not allowing wind turbines in known bat habitat and, in the absence of information, requiring bat surveys to determine bat presence/absence prior to installation.

T. Thurley

Tertia Thurley

15 October 2020