

# ACOUSTIC SURVEY FOR INDIGENOUS BATS WITHIN WESTERN SPRINGS PINE FOREST



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R3421c



# ACOUSTIC SURVEY FOR INDIGENOUS BATS WITHIN WESTERN SPRINGS PINE FOREST

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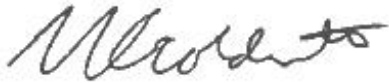
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## 1. INTRODUCTION

Kotahi Projects Ltd, on behalf of Auckland Council Community Facilities, has been engaged to project manage the removal of a stand of senescing pine trees at Western Springs Lakeside Reserve, central Auckland. Resource consent for this activity was granted in late 2019 (LUC60321424) and imposes a series of conditions relating to ecological management prior to the felling of the pine trees. In order to satisfy consent condition 36 regarding indigenous bats, Automated Bat monitoring (ABM) units were deployed before tree clearance to determine the presence/absence of bats within the works footprint. This report provides evidence that above survey has been completed together with the survey results, as required by condition 37.

New Zealand has two endemic bat species that are distributed sparsely throughout indigenous forests and wooded landscapes in both the North and South Islands. The long-tailed bat (*Chalinolobus tuberculatus*) is classified as ‘Threatened - Nationally Critical’ by O’Donnell *et al.* (2018). The central subspecies of the lesser short-tailed bat (*Mystacina tuberculata*) is classified as ‘At - Risk Declining’, the southern subspecies is classified as ‘At - Risk Recovering’, and the northern subspecies is classified as ‘Threatened Nationally Vulnerable’ (O’Donnell *et al.* 2018). The lesser short tailed bat is classified as either ‘Threatened - Nationally Critical’, ‘At - Risk Declining’, or ‘At Risk - Recovering’, depending on the subspecies (central subspecies, southern subspecies, and northern subspecies respectively). The Auckland region is not considered a significant habitat for the short-tailed bat (O’Donnell *et al.* 2018).

## 2. METHODOLOGY

Five Department of Conservation AR4 automatic bat monitors (ABMs) were deployed to determine if bats are using habitats within the the works footprint (Table 1, Figure 1). ABM units were deployed along the edges of potential bat habitat (i.e., adjacent to individual trees that contain features likely to be used by bats, such as flaking bark, crevices, and cavities) close to Motions Creek. Riparian corridors are important foraging habitats for indigenous bat species (DOC 2012). The exact locations of the ABMs were identified by a Department of Conservation-certified bat ecologist during a site walkover immediately prior to deployment.

The ABMs were deployed for a 20-night period between 8 February 2021 and 1 March 2021. The ABMs were set to record from one hour before sunset (19:25 hr) to one hour after sunrise (07:45 hr). This accommodated seasonal variations in sunrise and sunset. The ABMs were also set to record temperature. Data on general weather conditions were downloaded from the NIWA website (NIWA Station 37852 – Auckland, North Shore, Albany, EWS). The ABMs were all running ARM v1.4 software, and all were checked using the Department of Conservation Bat Recorder Tester Application before deployment. Data from the ABMs was downloaded and analysed using BatSearch3.

Table 1: Western Springs site identification numbers for the ABMs deployed. ABM numbers correspond with those used in Figure 1.

Site Numbers	Bat Detector Used
Site 1	Wildlands ABM 53
Site 2	Wildlands ABM 60
Site 3	Wildlands ABM 49
Site 4	Wildlands ABM 59
Site 5	Wildlands ABM 55





Figure 1: Google Earth map of Automated Bat Monitoring Sites 1-5 at Western Springs.

### 3. WEATHER CONDITIONS

NIWA weather data for Western Springs recorded little rain during the period of the survey. Overnight rain was recorded on four nights, with a maximum of 19.02 millimetres recorded on 15 and February 2021 (Table 2). Rainfall was not recorded around sunset (the time when bats leave their roosts) on any of the survey days. Overnight temperatures at Western Springs Lakeside Reserve generally remained above 12 degrees Celsius during the survey period (Table 3).

Table 2: Overnight rain recorded at the NIWA weather station in Auckland, North Shore, Albany.

Night Dates	Total Rain Overnight (mm)	No. of Hours of Rain Per Night
14/2/2021 - 15/2/2021	19.02	7.5
15/1/2021 - 16/2/2020	8.87	7

Table 3: Median temperature (degrees Celsius) around sunset (2000-2300) and overnight (2000-0800) recorded at the NIWA weather station near the Western Springs.

Date (NZST)	Sunset Temperature (C)	Overnight Temperature (C)
9/02/2021	20.9	18.8
10/02/2021	16.1	15.1
11/02/2021	18.0	12.6
12/02/2021	18.4	13.0
13/02/2021	21.0	16.4
14/02/2021	19.9	16.7
15/02/2021	20.1	18.5
16/02/2021	21.0	17.3
17/02/2021	20.9	13.5
18/02/2021	19.0	12.9
19/02/2021	19.0	12.6
20/02/2021	19.0	14.6
21/02/2021	20.6	15.8
22/02/2021	20.2	18.3
23/02/2021	21.0	18.6
24/02/2021	20.7	18.6
25/02/2021	21.5	16.9
26/02/2021	20.4	16.9
27/02/2021	20.7	19.0
28/02/2021	15.4	16.5
1/03/2021	18.8	15.6

### 4. RESULTS OF BAT SURVEY

No long-tailed bats or short-tailed bats were detected by any of the five ABMs during the 20 days of this survey. Based on this survey results, it is considered highly unlikely that either long-tailed bats or short-tailed bats inhabit the fragmented urban landscape that characterises Western Springs and surrounding suburbs.



## REFERENCES

- DOC 2012: Bats: counting away from roosts - automatic bat detectors. *Inventory and monitoring toolbox: bats. DOCDM-590733*. Department of Conservation, Wellington. 24 pp.
- Lloyd B. 2005: Lesser short-tailed bat. In: C.M. King (editor). *The Handbook of New Zealand Mammals: Second Edition*. Oxford University Press. 610 pp.
- O'Donnell C.F.J. 2005: NZ long-tailed bat. In: C.M. King (editor). *The Handbook of New Zealand Mammals: Second Edition*. Oxford University Press. 610 pp.
- O'Donnell C.F.J., Borkin K.M., Christie J.E., Lloyd B., Parsons S., and Hitchmough R.A. 2018: Conservation status of New Zealand bats, 2017. *New Zealand Threat Classification Series 21*. Department of Conservation, Wellington. 4 pp.
- Smith D., Borkin K., Jones C., Lindberg S., Davies F., and Eccles G. 2017: Effects of land transport activities on New Zealand's endemic bat populations: reviews of ecological and regulatory literature. *NZ Transport Agency Research Report 623*. 249 pp.



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