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Report on the long-tailed bat (*Chalinolobus tuberculatus*) survey conducted at Pt Hauhungaroa 6A Block, Whareroa North

1.0 Introduction

A long-tailed bat survey was carried out at Whareroa North – Pt Hauhungaroa 6A block – on the western side of Lake Taupo during November 2007. Taupo District Council suggested that bats could be present in the area either roosting or using the area for feeding intermittently. The objective of the survey conducted in November was to determine if long-tailed bats were present in the Hauhungaroa 6A block, and to ascertain the extent of their use considering the potential development of the site, and options for mitigation of potential impacts.

2.0 Methodology

Line transects
Line transects using handheld bat detectors can sample large areas over a wide variety of habitats and have proved successful in detecting populations. Bat activity can be highly variable and is affected by external factors such as insect availability, time of night, ambient temperature and other environmental conditions. Batbox III bat detectors were used for this survey, as it is the equipment recommended by The Department of Conservation. The detectors were set at 40kHz to pick up the peak loudness of long-tailed bat calls. Batbox III detectors can detect long-tailed bats on average 43.5 ± 9.8m away when used on forest edges. The survey was initiated during the peak times for long-tailed bats surveys, which is between October and February. Transect walks were commenced ~ 30 minutes after official sunset times for a duration of 2 hours. According to long-tailed bat monitoring best practice, nights were chosen when the temperature was above 7°C and where possible above 10°C. In addition, transects along forest-grassland edges were selected as this is where most long-tailed bat foraging occurs. The line transects chosen encompassed all possible grass-forest edges and each transect was walked on seven separate nights, and each of these nights the transect was walked at least three times. See appendix 1 for line transects locations.

Monitoring using automatic bat detectors
In addition to transect walks, automatic bat monitors (ABM's) were installed in three separate locations for 6 nights (2 nights each). The ABM was programmed to initiate recording at sunset and continue until dawn. It is preferential to use ABM's in concert with handheld bat detector line transects because if bats are roosting remotely and using the site for foraging only, bats may take some time to arrive at the site; and therefore while observers may have left the ABM will still be in position to record activity. See appendix 1 for locations of ABM stations

3.0 Findings

There were no bats seen or heard during any of the line transect walks on any night, despite temperatures being suitable and insect activity being high (for detailed information on survey results refer to Table 1). In addition, there was no activity recorded by the automatic bat detector on any of the nights that it was installed. These findings suggest that Whareroa North does not contain any roosting sites of long-tailed bats, and is not an important foraging area if utilized at all.

Table 1. Summary of findings for transect walks conducted at Pt Hauhungaroa 6A Block, Whareroa in November 2007.

DATE	TRANSECT	START TEMP.	END TEMP.	CLOUD	WIND	INSECTS	START TIME	END TIME	BATS SEEN
10/11/07	TOP PDDOCK	12	7	2	LIGHT	OCC/CMM	2030	2230	0
10/11/07	BTTM EDGE	12	7	2	LIGHT	OCC/CMM	2030	2230	0
11/11/07	TOP PDDOCK	14	12	0	LIGHT	OCC/CMM	2030	2230	0
11/11/07	BTTM EDGE	14	12	0	LIGHT	OCC/CMM	2030	2230	0
12/11/07	TOP PDDOCK	13	8	0	LIGHT	OCC/CMM	2030	2230	0
12/11/07	BTTM EDGE	13	8	0	LIGHT	OCC/CMM	2030	2230	0
13/11/07	TOP PDDOCK	13	12	6	LIGHT	COMMON	2030	2230	0
13/11/07	BTTM EDGE	13	12	6	LIGHT	COMMON	2030	2230	0
15/11/07	TOP PDDOCK	12	10	4	LIGHT	COMMON	2030	2230	0
15/11/07	BTTM EDGE	12	10	4	LIGHT	COMMON	2030	2230	0
17/11/07	TOP PDDOCK	14	11	0	LIGHT	COMMON	2045	2245	0
17/11/07	BTTM EDGE	14	11	0	LIGHT	COMMON	2045	2245	0
18/11/07	TOP PDDOCK	16	15	0	LIGHT	COMMON	2030	2230	0
18/11/07	BTTM EDGE	16	15	0	LIGHT	COMMON	2030	2230	0

4.0 Conclusions

No long-tailed bats were seen or heard in the proposed development site of Pt Hauhungaroa 6A Block during the survey conducted in November 2007. These findings show that further development of the site will have no impact on long-tailed bats, or no more than a minor impact should foraging vagrants have gone undetected.

5.0 Personnel

Melinda Habgood BSc, MSc (Environmental and Marine Science)

- currently working as a senior ecologist/herpetologist at Te Ngahere, Native Forest Management
- ongoing involvement with ecological assessments (of which lizard surveys are a component) for various clients
- conducted Masters thesis research on the behavioural interactions between copper and moko skinks on Tiritiri Matangi Island

Ben Barr BSc (Wildlife Biology)

- five years experience working with endangered New Zealand wildlife
- conducted bat surveys in Australia, and long-tailed bats while living on Kapiti Island
- currently studying endangered chevron skink (for MSc)