

# **Bat Surveying in Taranaki 2013-14 Report**



**Native Birds Taranaki**

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**Dave Bell**

Cover picture by Dave Bell: Eastern entrance to Moki Road Tunnel, Miro Scenic Reserve, Uruti. 13 January 2014.

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# Bat Surveying in Taranaki 2013-14 Report

## 1. Introduction

New Zealand bats use a form of sonar known as echolocation to navigate, orientate and forage. The frequency of bat echolocation calls is generally much higher than humans can hear (ultrasonic). Bat detectors can be used to listen to these calls, and are useful tools to unobtrusively survey, monitor and identify bat species (Sedgeley, 2008).

Following acquisition of five TrakaBatII<sup>®</sup> Automatic Bat Monitors (ABM) in 2012, a project monitoring and surveying for these rare and endangered species was undertaken in Taranaki and this report details the activities and results for the 2013-14 season.

Bats are New Zealand's only endemic terrestrial mammal but are under significant threat from not only introduced predators but also by competition from numerous introduced species for food.

## 2. New Zealand Bats

Three bat species, all of which are endemic, are known from New Zealand, the lesser short-tailed bat (*Mystacina tuberculata*), greater short-tailed bat (*M. robusta*) and long-tailed bat (*Chalinolobus tuberculatus*) (O'Donnell et al 2010).

The long-tailed bat 'North Island' has been recorded widely throughout the North Island, whilst the 'Central' lesser short-tailed bat is present in forests of the central North Island and has been recorded from northern Taranaki (O'Donnell et al 2010).

Under the New Zealand Threat Classification System the long-tailed bat (LTB) 'North Island' is classed as Threatened – Nationally Vulnerable whilst the 'Central' lesser short-tailed bat (STB) is regarded as At Risk – Declining (O'Donnell et al 2010).

## 3. Monitoring for 2012-13 Season

Monitoring for bats in Taranaki commenced in the 2012-13 summer season, concentrating in the Waitaanga area in northern Taranaki. Results (Bell, 2013a) indicated both STB and LTB were still present at sites for where surveying and a population study was undertaken in 1998/99.

## **4. Surveying for 2013-14 Season**

Bat surveying for the summer season of 2013-14 was mainly concentrated in ascertaining the presence of bats in Northern and North-eastern locations in Taranaki. But the opportunity was also taken, to return to Waitaanga and Mt Damper to monitor the continual presence of both LTB and STB at locations from the 1998/99 Population Survey (Bell, 2013a.).

A total of 14 surveys were undertaken between December 2013 and April 2014, involving a minimum of 10 nights monitoring for each survey. Total nights monitoring for each survey was dependent on weather conditions and access.

In addition two "Transect" surveys were undertaken using handheld bat detectors whilst walking on the Te Henui Walkway, New Plymouth, unfortunately both these surveys failed to produce any bats passes.

## **5. Results of Surveying**

A total of 501 nights surveying were completed with the TrakaBatII<sup>®</sup> Automatic Bat Monitors (ABMs) of which 313 nights were classified as 'low-noise nights' suitable for bat monitoring.

During these 313 nights of suitable conditions a total of 2,032 bat passes were recorded, 1,942 for long-tailed bats, 88 for short-tailed bats and 2 passes were Unclassified (not able to be distinguished) (Annex A).

It will be noted that not all the surveys had all of the five ABMs, this was due to:

- a. the theft of one ABM,
- b. the vandalism of one ABM (that was able to be repaired),
- c. Surveys 17a and 17b using only the one ABM, were of very short duration (3 nights) as these were operated in conjunction with a trial of a 'new' model ABM for TrakaBat<sup>®</sup>, and
- d. Survey 20a required only two ABMs to cover the suitable outlook from residential location in New Plymouth.

A map (Annex B) has been generously produced by Alison Beath, Technical Advisor Ecology, Department of Conservation showing the results for the first two seasons (2012/13 and 2013/14) of surveying.

## **6. Discussion**

Both long-tailed and short-tailed bat passes were recorded at sites located in rural Taranaki but the trial surveys, undertaken in New Plymouth, failed to pick-up any bats passes. LTBs have recently been found in both Hamilton and Auckland cities.

Overall pleasing results were again obtained in keeping with those obtained in the 2012-13 season. The number of passes and species varied greatly between surveys and was very much dependant on the location (Annex A).

## 6.1 Long-tailed Bats

Passes for LTB were recorded at all rural survey sites during the season, with some outstanding results being obtained. These included six ABMs picking up in excess of 100 passes during surveys from various locations:

- Moki Road Tunnel (East end) – 356 passes over 6 nights
- Kiwi Road Tunnel (South end) – 222 passes over 6 nights
- Kiwi Road Tunnel (North end) – 196 passes over 6 nights
- Kaka Road Uruti – 151 passes over 4 nights
- Awahou SR Whangamomona Saddle – 330 passes over 10 nights
- N Beckers property Purangi – 136 passes over 9 nights

Good results were also obtained from surveys in the Tangarakau Gorge, at Mt Damper, along Ohura Road by Whangamomona and Junction Road at Purangi.

**6.1.1 Road Tunnels.** During Survey 13 the ABM located at the Moki Road tunnel recorded 356 LTB passes over the six nights of good monitoring conditions. It was then suggested (Ian Gill, *pers. com.*) that further surveying should be trialled at both ends of this tunnel and the nearby Kiwi Road tunnel.

Survey 15 then undertook surveying and again produced good numbers of LTB passes but this time only at both ends of the Kiwi Road tunnel (222 and 196 passes respectively), whilst Moki Road tunnel only had 37 passes (at West end) and 9 passes at the East end.

It would appear that the bats are using road tunnels on their foraging flights. It should be noted that the Moki and Kiwi Road tunnels are approximately only 10 kms apart, as the bat flies. There is also a historic bat record for the Moki Road tunnel from December 1989.

**6.1.2 Exotic Pine Forest.** Long-tailed bats were first confirmed as using exotic pine forest in 1976 (Daniel, 1981) and subsequent studies (Borkin and Parsons, 2009) have indicated this is now relatively common for LTBs.

Two results from surveys this season (Survey 16 – Kaka Road Uruti, 151 passes over 4 nights and Survey 20 – N Beckers property Purangi, 136 passes over 9 nights), with the ABMs located in exotic pine forest would tend to indicate the use of localised small blocks of exotic pine in Taranaki are also in use by LTBs (see also 6.1.3 Bats at Okoki below).

**6.1.3 Bats at Okoki.** Information was received (Barry Giddy, *pers. com.*) that 'bats' had been observed in the past by a neighbour on Kaka Road Okoki. Subsequently contact was made with Phil Roche at Waitara, who confirmed that indeed 'about 20 years' previously he had observed bats flying down Kaka Road at Okoki when he was resident there.

During Survey 16, two ABMs were placed in the area, approximately 600m apart on Kaka Road. ABM Number 2 recorded 39 LTB passes over three good monitoring nights, whilst ABM Number 3 failed to record any bat passes over 2 nights.

The only obvious difference in localities was that ABM Number 2 had an exotic pine block along one side of the road, whereas ABM Number 3 had farmland on both sides of the road.

**6.1.4 Taranaki Regional Council.** Three additional LTB records were provided by staff members of the Taranaki Regional Council:

- **Dean Caskey** – two records of two passes each from Upper Mangaehu Road, Aotuhia for 2 Feb 14. These records are significant as there are records for LTBs at Aotuhia for Mar 1994.
- **Sean Gardiner and Leigh Honnor** – one LTB pass recorded on 15 Feb 14 from the Totara Block, Aorere Road at Mangamingi. This is a valuable record as the Totara Block is next to the Rotokare Scenic Reserve from where LTBs were recorded during surveys in 2013 (Bell, 2013b.).

These three records have been entered in to the Department of Conservation National Bat Database, for future reference.

## **6.2 Short-tailed Bats**

It was not originally planned to return to Waitaanga in northern Taranaki to conduct any monitoring/surveying at locations where short-tailed bats (STBs) could be expected, but circumstances prevailed that allowed for this to in fact be undertaken, with some success.

**6.2.1 Mt Damper.** Jacob Cumberworth from Perth, Western Australia was staying at Waitaanga and 'volunteered' to walk in (and out again in the same day) twice to Mt Damper, Waitaanga CA and install and then retrieve four of the ABMs at locations from the 1998/99 bat population survey. Survey 14 results (Annex A) show that STBs were recorded at three of these sites and LTBs from all four.

**6.2.2 South Waitaanga.** Blue Cumberworth from Waitaanga provided access through his property onto the DOC hunters' track that leads into the Falls Hut in Waitaanga CA and four ABMs were installed along this track. All the monitors recorded both short-tailed and long-tailed bats during this survey (Survey 17 Annex A).

## 7. Conclusion

It was pleasing to find that long-tailed bats were present at all the sites in rural Taranaki surveyed during the 2013-14 season and had been in certain areas for a considerable time. This bodes well for this species' continual presence in Taranaki.

The confirmed persistent existence of short-tailed bats in those areas at Waitaanga surveyed this season reinforces the results from the 2012-13 season (Bell, 2013a.).

## 8. Acknowledgments

***A project like this could not be undertaken nor successfully completed without the assistance from a number of people and acknowledgement is given to the following with much appreciation;***

Ian Gill for producing the remarkable TrakaBatII<sup>®</sup> Automatic Bat Monitors, and his helpful advice.

To Alison Beath, Technical Advisor Ecology, Department of Conservation, Turangi for the great map and her insightful comments that improved this report together with prompt and professional assistance when sought.

Jacob Cumberworth for his supreme efforts in walking in and out again in the one day, placing the ABMs in at Mt Damper and repeating the same mission to retrieve the equipment.

Blue Cumberworth for providing access through his property, the numerous cups of coffee and enlightening conversations.

Derek Santer and Aaron Chase for access to North Waitaanga and for their hospitality.

Bernadet Adriaenssens from Holland for her good company and assistance on some of the surveying trips and her great enthusiasm for all things bats.

Barry Giddy from Okoki for the lead on the bats there and Phil Roche from Waitara for details of his historical encounters with bats on Kaka Road, Okoki.

Nick Beckers and Joanna Greig at Purangi for permission to undertake a survey on their property and for a number of cups of 'mud' coffee and the tasty cake enjoyed.

Tui Wright and Daniel Severinsen for partaking in the two 'Transect' surveys undertaken on the Te Henui Walkway in New Plymouth.

To Dean Caskey, Leigh Honnor and Sean Gardiner from the Taranaki Regional Council for sharing their bat records.



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**Annex A to**  
**Bat Surveying in Taranaki**  
**2013-14 Report**

## Results from Bat Surveying in Taranaki Summer of 2013-2014

**Note:** that these results have been included in the Department of Conservation National Bat Database.

Survey No	ABM No	Location			Site	Total No Nights	Passes for Low-noise Nights				
		Eastings	Northings	Description			No Nights	STB	LTB	UC	Total
10	1	1757494	5680866	Tangarakau Gorge Ohura Rd	Road	10	4	0	16		16
	2	1758425	5682140	Tangarakau Gorge Ohura Rd	Road	10	2	0	0		0
	3	1758821	5684042	Tangarakau Gorge Ohura Rd	Road	10	4	0	29		29
	4	1760572	5683554	Tangarakau Gorge Ohura Rd	Road	10	4	0	56		56
	5	1762475	5683933	Tangarakau Gorge Ohura Rd	Road	10	6	0	5		5
11	1	1752804	5684750	Mangapapa Rd Moki Forest	Road	10	9	0	8		8
	2	1752559	5685557	Mangapapa Rd The Boilers	Road	10	8	0	1		1
	3	1753262	5685918	Mangapapa Rd Moki Forest	Road	10	7	0	0		0
	4	1753202	5691245	Okau Rd Mt Damper	Road	10	7	0	5		5
	5	1753544	5691953	Okau Rd Mt Damper	Road	10	9	0	4		4
12	1	1755905	5697946	Waitaanga Rd Waitaanga	Road	10	5	8	6		14
	2	1755282	5697906	Waitaanga Rd Waitaanga	Road	10	4	1	3		4
	3	1754511	5697471	Waitaanga Rd Waitaanga	Road	10	5	0	27		27
	5	1750135	5697243	Tongaporutu Ohura Rd Kotare	Road	10	6	1	9		10
13	1	1736681	5685400	Moki Rd Uruti	Road	10	3	0	29		29
	2	1737694	5684863	Moki Rd Tunnel Uruti (East end)	Road	10	6	3	356		359
	3	1738463	5684673	Moki Rd Uruti	Road	10	6	0	5		5
	5	1738719	5684469	Moki Rd Uruti	Road	10	5	0	3		3
14	1	1759156	5692105	Mt Damper Waitaanga CA	Track	10	7	7	36	2	45
	2	1758340	5692417	Mt Damper Waitaanga CA	Bush	10	5	7	3		10
	3	1758687	5691069	Mt Damper Waitaanga CA	Track	10	7	10	6		16
	5	1759103	5689897	Mt Damper Waitaanga CA	Bush	10	5	0	8		8

<b>15</b>	1	1738369	5684739	Moki Road Tunnel Uruti (West end)	Road	10	7	0	37		37
	2	1738452	5684676	Moki Road Tunnel Uruti (East end)	Road	10	4	4	9		13
	3	1746221	5690540	Kiwi Road Tunnel Uruti (South end)	Road	10	6	0	222		222
	5	1746201	5690700	Kiwi Road Tunnel Uruti (North end)	Road	10	6	0	196		196
<b>16</b>	1	1733155	5680644	Kaka Road Uruti	Road	10	4	0	151		151
	2	1731683	5680312	Kaka Road Uruti	Road	10	3	0	39		39
	3	1731150	5680390	Kaka Road Uruti	Road	10	2	0	0		0
	5	1694854	5675917	Spencer Place New Plymouth	Urban	10	7	0	0		0
<b>17</b>	1	1761842	5698202	Waitaanga CA Waitaanga	Bush	10	9	20	5		25
	2	1761886	5698641	Waitaanga CA Waitaanga	Bush	10	9	13	3		16
	3	1761729	5698858	Waitaanga CA Waitaanga	Track	10	9	8	9		17
	5	1761253	5699133	Waitaanga CA Waitaanga	ATV	10	8	1	29		30
<b>17a</b>	4	1761966	5707028	Mohakatino CA, North Waitaanga	Bush	3	3	1	3		4
<b>17b</b>	4	1761842	5698202	Waitaanga CA Waitaanga	Bush	3	3	4	2		6
<b>18</b>	1	1747927	5664640	Ohura Road Whangamomona	Road	11	8	0	23		23
	2	1747742	5664582	Ohura Road Whangamomona	Road	11	9	0	3		3
	3	1747431	5664528	Ohura Road Whangamomona	Road	11	9	0	68		68
	4	1746808	5664493	Awahou SR Whangamomona Saddle	Bush	11	10	0	330		330
	5	1746452	5664537	Ohura Road Whangamomona	Road	11	10	0	1		1
<b>19</b>	2	1733447	5663981	Junction Road Purangi	Road	10	7	0	28		28
	3	1732719	5664309	Junction Road Purangi	Road	10	6	0	25		25
	4	1732695	5663849	Mangaoapa Road Purangi	Road	10	7	0	3		3
	5	1732541	5663321	Mangaoapa Road Purangi	Road	10	2	0	0		0
<b>20</b>	2	1733869	5664156	N Beckers property Purangi	ATV	10	6	0	0		0
	3	1733939	5664477	N Beckers property Purangi	Bush	10	5	0	0		0
	4	1733671	5664510	N Beckers property Purangi	ATV	10	9	0	5		5
	5	1733199	5664487	N Beckers property Purangi	ATV	10	9	0	136		136
<b>20a</b>	2	1693508	5673609	Tasman Street New Plymouth	Urban	10	7	0	0		0
	3	1693508	5673609	Tasman Street New Plymouth	Urban	10	5	0	0		0
<b>Totals =</b>						<b>501</b>	<b>313</b>	<b>88</b>	<b>1942</b>	<b>2</b>	<b>2032</b>

### Site Description:

**Road** – Formed public road sealed or metal surface

**4x4** – Unformed non-public road/track requiring 4 wheel drive

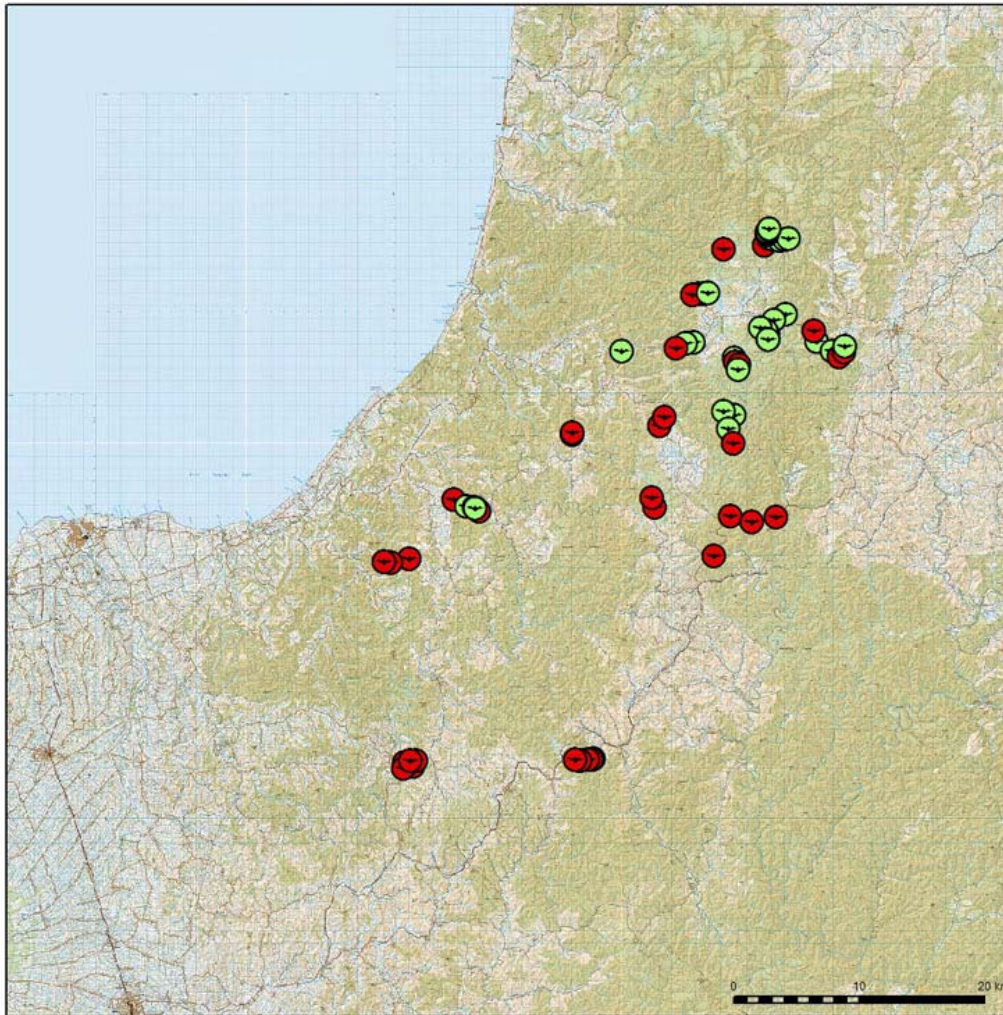
**ATV** – Track requiring ATV bike, often forestry/bench tracks

**Track** – formed walking track



**Clearing** – bush clearing, often forestry skid site

**Bush** – no formed/unformed access way

## Taranaki Bat Survey Results 2012-2014



### Locations where bats were recorded

-  Both long-tailed and short-tailed bats found
-  Only long-tailed bats found