

# SPENCER ROAD – Lake Tarawera

## BIRD MONITORING – 2016

### Five Minute Bird Counts



Fieldwork and Report by Carmel Richardson,  
For the Bay of Plenty Regional Council (BOPRC). May 2017

## Contents:

Summary .....	3
Introduction .....	4
Method .....	5
Results .....	6
Conclusion .....	7
Comment .....	8
Recommendations .....	11
Acknowledgements .....	11
References .....	12
Figure 1 – Bird Count Results; 2005, 2008, 2011 and 2016 .....	7
Table 1 – 2016 Bird Count Results .....	9
Table 2 – 2016 Bird species observed – 2005 – 2016 .....	10
Appendices:	
<i>Appendix 1</i> – Names of bird species observed – 2016.....	13
<i>Appendix 2</i> – Spencer Road count station locations .....	14
<i>Appendix 3</i> – Tarawera Settlement; Spencer Road map .....	15

## SUMMARY

A series of 5 Minute Bird Counts (5MBC) were carried out in the Lake Tarawera settlement along Spencer Road (and some side roads) on three fine days in November and December of 2016. 5MBCs have been carried out every 3 to 5 years to help gauge the success of the pest control undertaken by the community there since 2000, targeting rodents.

The 2016 5MBCs were the fourth series of bird counts to be carried out in the past 11 years. Previous 5MBCs were undertaken in 2005, 2008 and 2011. All counts have been carried out at the same time of year and all but the 2005 counts were undertaken by myself.

Results show a consistent increase in bird numbers between 2005 and 2011 and a small drop in 2016. The number of bird species present increased with each survey until 2011 and now remains about the same in 2016.

*See figure 1. Pg. 7*

5MBCs are an index measure, used in this instance to monitor bird abundance and changes in bird density and species. Results of bird counts can only suggest changes and possible trends over time.

The Lake Tarawera Pest Control Group (LTPCG), are a volunteer group of mostly residents, linked to the Tarawera Rate Payers Association. They organise and carry out pest control (targeting rodents) throughout the year on private properties and reserve land in the settlement area of Tarawera as well as on Kariri Peninsula.

The work of the LTPCG is supported and sponsored by the Bay of Plenty Regional Council (BOPRC).

# INTRODUCTION

Lake Tarawera settlement is approximately 16 kilometres from Rotorua city. Spencer Road is approximately 8 kilometres in length and is the main access road along the north-western side of Lake Tarawera and for the settlement of houses there.

On the western side of Spencer Road above the houses are plantations of pine and eucalyptus trees, farmland and pockets of native forest. East of Spencer Road is Lake Tarawera itself and at the northern end of the road is native forest which connects with Lake Okataina.

Over 400 residences are dotted through the well vegetated strip of land between Lake Tarawera and the farmland above, forming a corridor of native vegetation, exotic garden plants, large trees, lawns, wetland and farmland. The different habitats and variety of plants growing there provide food and shelter for birds and other wildlife throughout the year.

## Pest control:

Organised pest control targeting rodents began in June 2000 and was carried out by volunteers to reduce a major rodent infestation in the settlement at the time. Regular pest control has continued since then and still targets rodents in an effort to prevent further infestations, improve the general environment and continue to enhance the native birdlife. Pest control involves LTPCG volunteers checking and topping up bait stations positioned on properties throughout the settlement. The toxic baits used are Ditrac wax block baits, which are secured in bait stations on a vertical wire rod. Ditrac is a rodenticide containing the anticoagulant diphacinone, which is effective at killing rats and mice.

The LTPC Group organise and carry out pest control throughout the year and are sponsored by the Bay of Plenty Regional Council (BOPRC).

## Five Minute Bird Counts:

5MBC surveys are a simple way of monitoring some of the benefits and changes in the environment, brought about by, in this case, regular rodent control.

Birds are preyed on by rodents, are conspicuous in the environment and therefore relatively easy to notice and monitor changes in their abundance, density and variety over time. Many of these changes will be noticed by residents living at Tarawera and volunteers carrying out the rodent control, which encourages the continuation of the project.

## Report:

This report covers the 5MBC survey that took place in November and December of 2016 along Spencer Road and some adjoining roads, the survey results and my thoughts on the findings.



## METHOD

Standard five-minute bird count (5MBC) methodology, (Dawson and Bull; 1975) was used for this survey.

Count stations spaced approximately 200 metres apart along Spencer Road and several side roads are where the 5MBCs took place. Birds seen or heard within a 100 metre radius of a count station over a five-minute period were recorded. The time, date and weather conditions (Sun, wind, temperature, precipitation) were recorded at each count station for each 5MBC carried out.

Bird counts were carried out between 9.00am and 1.00pm (NZ standard time) to be consistent with previous counts and to avoid both the dawn chorus and the quiet afternoon periods. All counts were conducted in fine, still conditions with no rain. Weekend days were avoided due to the extra noise, traffic and activity typical at that time of the year. Survey dates were; 18.11.2016, 23.11.2016, 1.12.2016.

The same count stations were used this survey as were used in 2005, 2008 and 2011 and were located using existing residential house numbers.

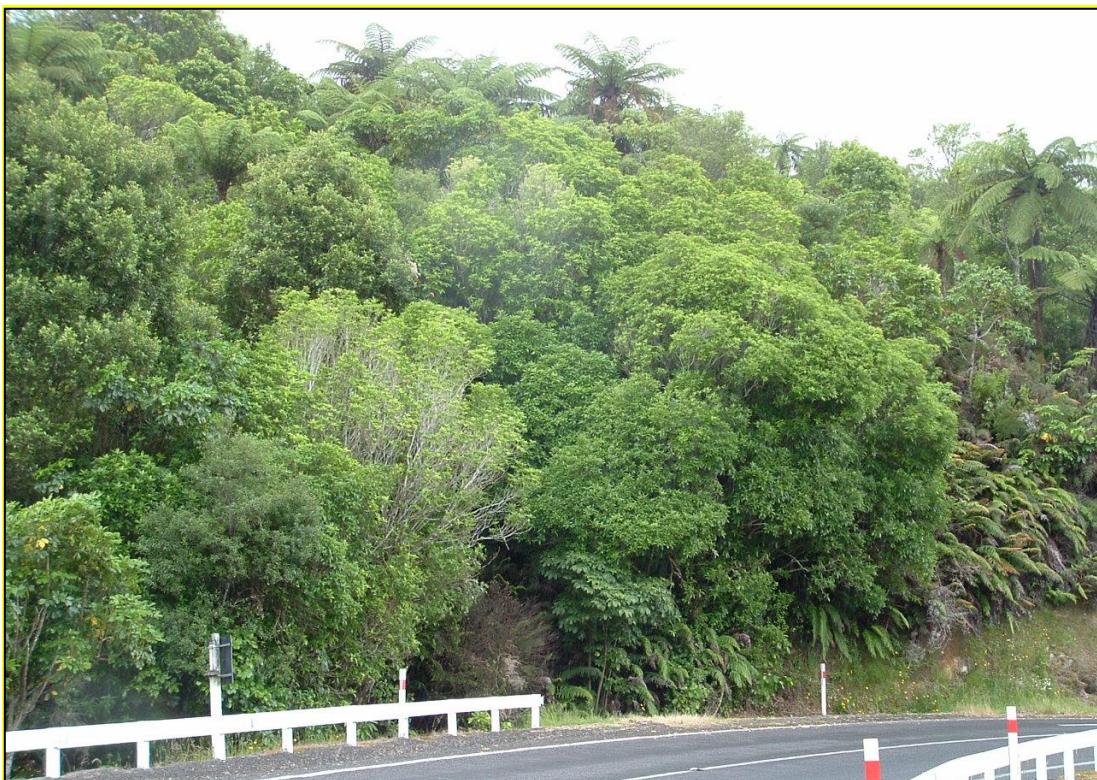
*See Appendix 2. Pg. 14*

In 2005 forty counts were made from 23 count stations over five days.

In 2008 forty counts were made from 23 count stations over four days.

In 2011 forty counts were made from 23 count stations over four days.

In 2016 forty counts were made from 23 count stations over three days.



Typical road edge vegetation.

## RESULTS

### **Results of the 2016 5MBC survey, Spencer Road: -**

- **A total of 1505 birds were counted over three days from forty count stations.**
- **An average of 37.6 birds were counted per station (this includes water birds).**
- **36 different species of bird were recorded during this 5MBC survey.**

*See Figure 1. Pg. 7*

The 2016 5MBCs produced similar results to the 2011 5MBCs. Although the total number of birds counted decreased by 131 (1505 birds in 2016 and 1638 birds in 2011), the total number of species of birds counted remained about the same at 36 species in 2016 compared with 35 species in 2011.

Bird species recorded included a mix of water birds, forest passerines and introduced garden/farmland passerines. There was a noticeable increase in the number of kingfisher, bellbird, black-backed gull, scaup, and myna recorded. Noticeably more water birds and water associated birds were counted in 2016 than in any previous count surveys (151 total water associated birds counted in 2016, 119 counted in 2011 and 34 counted in 2008). Less starlings were recorded this survey than the previous two surveys. Numerous fledglings of different species were seen or more often heard.

Over half the species counted were native birds (19 different native bird species) with 6 of these being endemic species. There were 17 introduced bird species counted.

### **Previous 5MBC Results:**

2005 - A total of 472 birds were counted over five days in November from forty count stations. An average of 11.8 birds were counted per station, 16 different species of bird were recorded (water birds were not included).

2008 - A total of 897 birds were counted over four days in November and December, from forty count stations. An average of 22.4 birds were counted per count station, 29 different species of bird were recorded (water birds included).

2011 - A total of 1638 birds were counted over four days in November and December, from forty count stations. An average of 40.9 birds were counted per count station, 35 different species of bird were recorded (water birds included).

## CONCLUSION

Results of the 2016 5MBC survey indicate bird numbers may have plateaued after big increases between 2005 and 2008 and between 2008 and 2011. Ongoing control of rodents may keep bird numbers increasing at a modest rate, especially if habitat improves, though I suspect no big changes will occur without expanding pest control to include other pest animal species such as possums, mustelids (stoats and ferrets) and wallabies.

By increasing pest control, habitat for native fauna will improve – especially along the lake edge. There will also be better breeding success and a greater survival rate for birds (as well as other native fauna). Bird species such as Bittern, spotless crane and fernbirds might then become common.

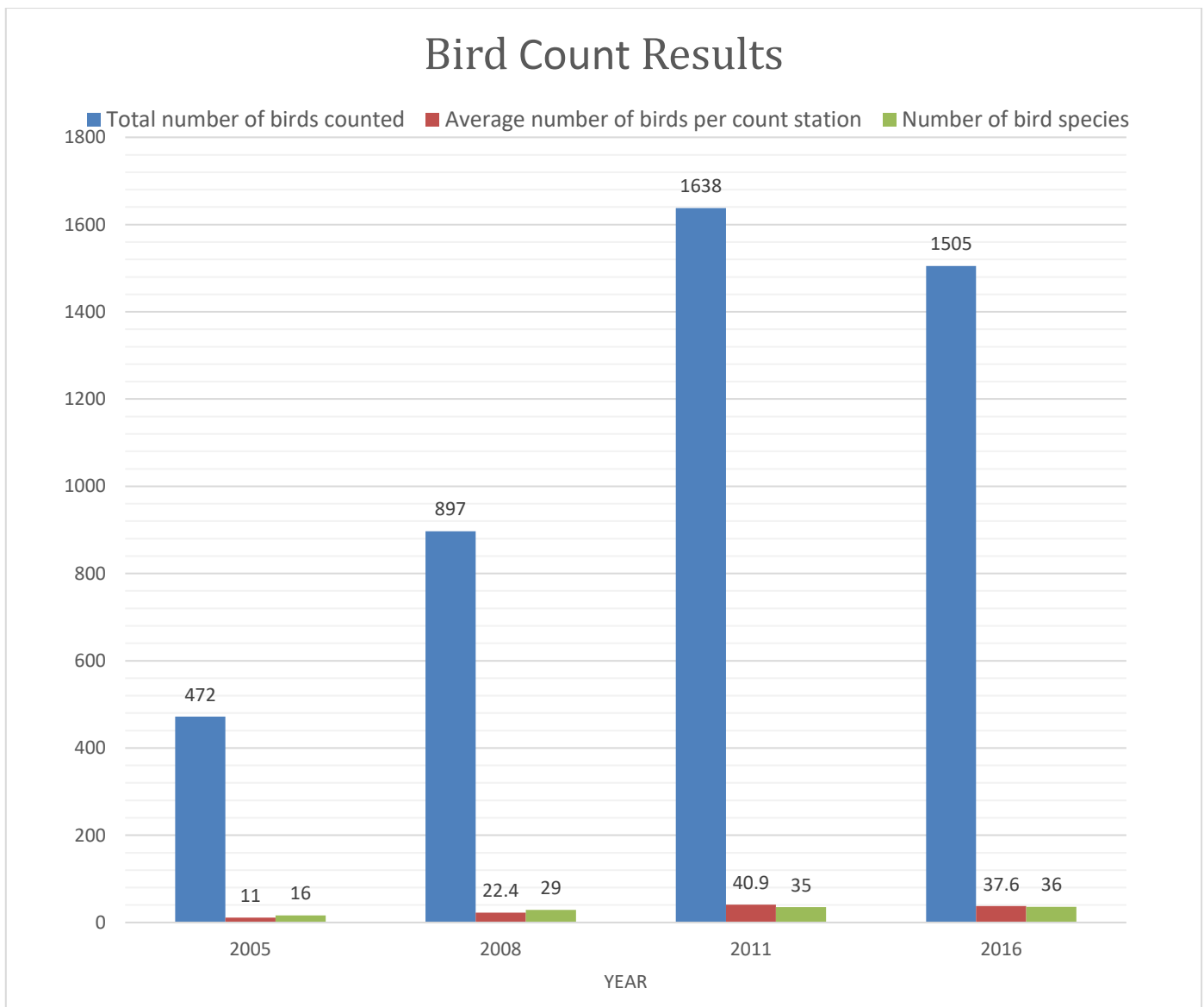


Figure 1. Bird Count Results, 2005, 2008, 2011 and 2016.



Dabchick nest-building, lake-edge Stoney Bay Reserve. Dec 2016

## Comments

- Bird species showing a noticeable increase in numbers from the previous survey were; kingfisher, bellbird, black-backed gull, scaup, myna, goldfinch and greenfinch.
- Bird species that decreased in numbers noticeably were; kereru, fantail, black swan, Canada goose, starling, chaffinch and house-sparrow. NB – One resident I spoke with said many more kereru were present a month earlier when cherries were flowering.
- Most of the kereru recorded were feeding in cherry trees on ripening fruit.
- Good numbers of dabchicks were seen, especially considering the now quite limited views of the lake from count stations.
- A tomtit was heard calling after a 5MBC had been completed, close to count station 20 (north-east end of Spencer Road where there is native forest behind the houses). Although it couldn't be included in the results, it is good to confirm they are present (residents have in the past also mentioned the presence of robins and whiteheads).
- 4 shining cuckoo were seen and heard together, calling and moving about in a group of mahoe trees for approximately 8 minutes. It is uncommon to see 4 cuckoos together.
- Spotted dove and spur-winged plovers were recorded in 5MBCs here for the first time.
- Many trees were in full flower or fruit (Kamaha and flowering Cherry noticeably).
- Lake views from count stations were reduced compared to previous 5MBC surveys, due to vegetation growth.
- There was more traffic and general noise during the 2016 counts than in previous surveys, e.g. houses under construction and property maintenance contractors working.
- In late November frogs were heard from several count stations near the northern end of the settlement during the day.
- A pair of dabchicks were observed nest building on the Lake edge at Stoney Bay Reserve in a place very vulnerable to disturbance and predators.



Table 1: 2016 Bird Count Results

	<b>BIRD SPECIES RECORDED</b>	<b>NUMBERS COUNTED</b>	<b>AVERAGE PER COUNT</b>
1	Kahu / Harrier •	4	0.1
2	Kereru ••	38	0.95
3	Tui ••	303	7.6
4	Kingfisher •	22	0.55
5	Bellbird ••	102	2.25
6	Shining Cuckoo •	21	0.5
7	Silvereye •	21	0.5
8	Fantail •	8	0.2
9	Grey Warbler ••	34	0.85
10	Welcome Swallow •	34	0.85
11	Black-backed Gull •	27	0.7
12	Red-billed Sea gull •	4	0.1
13	Little Shag •	2	0.05
14	Black Shag •	5	0.1
15	Scaup ••	66	1.6
16	Dabchick ••	6	0.15
17	Pukeko •	2	0.05
18	Australasian Coot •	13	0.33
19	Spur-winged Plover •	2	0.05
20	Canada Goose	2	0.05
21	Australian Magpie	1	0.02
22	Eastern Rosella	11	0.3
23	Pheasant	3	0.07
24	Californian Quail	37	0.9
25	Myna	60	1.5
26	Blackbird	160	4
27	Song Thrush	19	0.5
28	Starling	127	3.2
29	Yellowhammer	4	0.1
30	Chaffinch	77	1.9
31	Greenfinch	36	0.9
32	Goldfinch	27	0.7
33	House Sparrow	187	4.7
34	Hedge Sparrow	2	0.05
35	Skylark	2	0.05
36	Spotted Dove	1	0.03
37	Unknown Finches/Fledglings	33	0.8

• Designates native bird species. •• Designates endemic species

Table 2: Bird Species Observed – 2005 – 2016

Number	Common Name	Scientific Name	2005	2008	2011	2016
1	Kahu/Australasian Harrier	<i>Circus approximans</i>	4	3	2	4
2	Kereru	<i>Hemiphaga novaeseelandi</i>	10	40	73	38
3	Tui	<i>Prosthemadera novaeseelandiae</i>	72	169	310	303
4	Kingfisher	<i>Halcyon sancta vagrans</i>	8	7	5	22
5	Bellbird	<i>Anthornis melanura oneho</i>	36	46	72	102
6	Shining Cuckoo	<i>Chrysococcyx lucidus lucidus</i>	4	17	16	21
7	Silvereye	<i>Zosterops lateralis lateralis</i>	8	6	8	21
8	Fantail	<i>Rhipidura fuliginosa placabilis</i>	0	8	15	8
9	Grey Warbler	<i>Gerygone igata</i>	10	28	21	34
10	Welcome Swallow	<i>Hirundo tahitica</i>	0	16	37	34
11	White-Faced Heron	<i>Ardea novaehollandiae</i>	0	0	4	0
12	Black-backed Gull	<i>Larus dominicanus dominicus</i>	0	12	11	27
13	Seagull/Red billed Gull	<i>Larus novaehollandiae</i>	0	6	0	4
14	Shag, Little	<i>Phalacrocorax melanoleucos</i>	0	2	1	2
15	Shag, Black	<i>Phalacrocorax carbo</i>	0	0	2	5
16	Scaup, New Zealand	<i>Aythya novaeseelandiae</i>	0	0	35	66
17	Dabchick, New Zealand	<i>Poliiocephalus rufopectus</i>	0	0	3	6
18	Pukeko	<i>Porphyrio porphyrio melanotus</i>	0	1	2	2
19	Australian Coot	<i>Fulica atra</i>	0	4	8	13
20	Spur-winged Plover	<i>Vanellus miles</i>	0	0	0	2
21	Black Swan	<i>Cygnus atratus</i>	0	2	19	0
22	Canada Goose	<i>Branta canadensis</i>	0	0	29	2
23	Australian Magpie	<i>Gymnorhina tibicen</i>	0	0	1	1
24	Eastern Rosella	<i>Platycercus eximius</i>	0	8	7	11
25	Pheasant, Ring-necked	<i>Phasianus colchicus</i>	0	0	3	3
26	Californian Quail	<i>Callipepla californica</i>	6	10	31	37
27	Myna	<i>Acridotheres tristis</i>	20	33	36	60
28	Blackbird	<i>Turdus merula</i>	152	76	160	160
29	Thrush, Song	<i>Turdus philomelos</i>	29	26	28	19
30	Starling	<i>Sturnus vulgaris</i>	12	157	281	127
31	Yellowhammer	<i>Emberiza citronella</i>	0	14	2	4
32	Goldfinch	<i>Carduelis carduelis</i>	0	11	12	27
33	Chaffinch	<i>Fringilla coelebs</i>	31	76	120	77
34	Greenfinch	<i>Carduelis chloris</i>	32	25	24	36
35	House Sparrow	<i>Passer domesticus</i>	66 *	2	215	187
36	Hedge Sparrow	<i>Prunella modularis</i>	?	85	15	4
37	Skylark	<i>Alauda arvensis</i>	8	4	2	2
38	Spotted Dove	<i>Streptopelia chinensis</i>	0	0	0	1
	Unknown Finches & Fledglings	N/A	0	3	28	33
		Total Bird Numbers →	472	897	1638	1505
		Total Bird Species →	16	29	35	36

\*NB Type of Sparrow was not specified in the 2005 report. Therefore 66 is most likely to be a mix of Hedge and House Sparrow species.

## RECOMMENDATIONS

- That this community initiated and driven project be encouraged to continue.
- That pest control be expanded to include possums, mustelids and wallabies.
- That effort be made to control some of the pest plant species present, especially along the lake edge and to replant with appropriate native plants.
- That more information, maybe by way of information/interpretation panels be developed and set up to help increase public awareness of the work being done and why. Included could be information on some of the less common native flora and fauna species present, why they are important and ways people can help look after them and their habitat to retain them into the future.
- That 5MBC surveys continue to be carried out every 3-5 years to monitor progress.
- That the 2016 and previous 5MBC reports for Spencer Road Lake Tarawera, be made available to the Lake Tarawera Pest Control Group and the Lake Tarawera Ratepayers Association.

## ACKNOWLEDGEMENTS

I would like to acknowledge the Bay of Plenty Regional Council for sponsoring and supporting the Tarawera rodent control project, 5MBC monitoring and reporting. Shane Hona was my contact in the Rotorua Office of the BOPRC.

I would like to acknowledge and thank the Lake Tarawera Pest Control Group and residents of the Tarawera community for their ongoing pest control efforts. Rodent control has and is making a positive difference to the environment.

My thanks to Peter Fahey, Liz Sims, Mike Harding and Fred Stevens for their time and information given via conversations. They are all involved with the Lake Tarawera community.

I would also like to acknowledge and remember Bob Scopes, a well-known and respected member of the Tarawera community who passed away in 2012. Bob initiated the rodent control project at Tarawera in 2000 and worked with the Regional Council and local volunteers to keep it going.

## REFERENCES

Dawson, D. G. and Bull, P. C (1975): Counting Birds in New Zealand Forests. Notornis volume 22: 101 – 109.

Heather, B. D. and Robertson, H. A. (2005). The Field Guide to the Birds of New Zealand. Penguin Books, New Zealand. Revised Edition.

Hudson, J. (2005) Spencer Road Bird Monitoring, Lake Tarawera. Unpublished Report for Environment Bay of Plenty.

Richardson, C. Bird Monitoring – 2008 Five Minute Bird Counts. Spencer Road; Lake Tarawera. Unpublished report for Environment Bay of Plenty.

Richardson, C. (2011) Lake Tarawera Bird Monitoring – 2011. Five Minute Bird Counts. Spencer Road. Unpublished report for Bay of Plenty Regional Council.

Scopes, R.N. (2008) Lake Tarawera Pest Animal Control Project. Analysis of Rodent Control in the Settlement Area of Lake Tarawera, June 2000 – September 2008. Unpublished Report.



## APPENDIX: 1

### NAMES OF BIRD SPECIES OBSERVED - 2016:

	<b>Common &amp; Maori Name</b>	<b>Scientific Name</b>
1	Kahu/Australasian Harrier	<i>Circus approximans</i>
2	Kereru / Kukupa/NZ pigeon	<i>Hemiphaga novaeseelandi</i>
3	Tui	<i>Prosthemadera novaeseelandiae novaeseelandiae</i>
4	Kingfisher / Kotare	<i>Halcyon sancta vagrans</i>
5	Bellbird / Korimako	<i>Anthornis melanura oneho</i>
6	Shining Cuckoo / Pipiwharau	<i>Chrysococcyx lucidus lucidus</i>
7	Silvereve / Touhou	<i>Zosterops lateralis lateralis</i>
8	Fantail / Piwakawaka	<i>Rhipidura fuliginosa placabilis</i>
9	Grey Warbler / Riroriro	<i>Gerygone igata</i>
10	Black-backed Gull / Karoro	<i>Larus dominicanus dominicus</i>
11	Shag, Little /Kawaupaka	<i>Phalacrocorax melanoleucos brevirostris</i>
12	Shag, Black / Kawau	<i>Phalacrocorax carbo nova</i>
13	Pukeko /Swamp hen	<i>Porphyrio porphyrio melanotus</i>
14	Australian Coot	<i>Fulica atra</i>
15	Spur-winged Plover	<i>Vanellus miles</i>
16	Scaup /Papango	<i>Aythya novaeseelandiae</i>
17	Dabchick / Weweia	<i>Poliiocephalus rufopectus</i>
18	Goose, Canada	<i>Branta Canadensis maxima</i>
19	Swallow, Welcome	<i>Hirundo tahitica neoxena</i>
20	Australasian Harrier /Kahu	<i>Circus approximans</i>
21	Magpie, Australian	<i>Gymnorhina tibicen (sp)</i>
22	Spotted Dove	<i>Streptopelia chinensis</i>
23	Eastern rosella	<i>Platycercus eximius</i>
24	Californian Quail	<i>Callipepla californica</i>
25	Pheasant / Ring-neckedPheasant	<i>Phasianus colchicus</i>
26	Myna	<i>Acridotheres tristis</i>
27	Blackbird	<i>Turdus merula</i>
28	Thrush, Song	<i>Turdus philomelos</i>
29	Starling	<i>Sturnus vulgaris</i>
30	Skylark	<i>Alauda arvensis</i>
31	Yellowhammer	<i>Emberiza citronella</i>
32	Chaffinch	<i>Fringilla coelebs</i>
33	Goldfinch	<i>Carduelis carduelis</i>
34	Greenfinch	<i>Carduelis chloris</i>
35	House Sparrow	<i>Passer domesticus</i>
36	Hedge Sparrow /Dunnock	<i>Prunella modularis</i>

## APPENDIX: 2

### Count Stations

<i>Count Stations</i>	<i>Approximate Location of Count Stations</i>	<i>GPS Co-ordinates</i>
1	19 Spencer Road	1896679 / 5766343
2	33 Spencer Road – Junction	1896839 / 5766464
3	54 Spencer Road	1896867 / 5766728
4	75 Spencer Road	1896998 / 5767326
5	93 Spencer Road	1897146 / 5764960
6	133 Spencer Road	1897192 / 5767147
7	152 Spencer Road	1897242 / 5767388
8	165 Spencer Road	1897291 / 5767614
9	177 Spencer Road	1897205 / 5767788
10	199 Spencer Road	1897116 / 5767901
11	225 Spencer Road	1896953 / 5768038
12	248 Spencer Road	1896875 / 5768254
13	265 Spencer Road	1896883 / 5768429
14	10 Waitangi Road	1896897 / 5768666
15	450 Spencer Road	1896934 / 5769684
16	1 Ronald Road	1897370 / 5769874
17	Solitaire Lodge entrance	1897151 / 5769920
18	510 Spencer Road	1897124 / 5770164
19	524 Spencer Road	1897210 / 5770353
20	537 Spencer Road	1897267 / 5770469
21	568 Spencer Road	1897477 / 5770531
22	588 Spencer Road	1897737 / 5770594
23	581 Spencer Road	1897764 / 5770499

# APPENDIX: 3 Map of Lake Tarawera Settlement – Pest control Area

