



# Whakatane Region Forest Bird Monitoring

Final Report - April 2020

## Kohi Point Scenic Reserve 2019 Re-measure

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for

*First Words  
In Fauna™*

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# 1 Executive Summary

Forest bird counts were conducted on 12 transects in the Kohi Point Scenic Reserve (KPSR), Bay of Plenty, between 22nd November and 7th December 2019. The main objective of this project is to investigate the effectiveness of the predator control programme conducted at KPSR. Forest birds are known to exhibit rapid population growth in response to predator reduction and thus are a good indicator of operation success. Five-minute bird counts (5MBCs) were also conducted this year to allow for site comparison with other similar projects conducted in New Zealand.

The 2019 monitoring season marks the ninth year of forest bird monitoring in KPSR using our best practice, peer reviewed methodology and the eleventh consecutive breeding season subject to intensive predator control. It is the first year of results since initiating a biennial monitoring regimen, meaning monitoring was not conducted in 2018 and will be conducted again in 2021.

Relative abundance for indigenous species has increased significantly from 2012 to 2019, suggesting that ongoing predator control continues to enhance the indigenous bird population and habitat health in the KPSR. In particular, significant increases for nectarivores bellbird and tui since 2012 is a very positive sign for continuing improvement of bush vitality. However, the site may be experiencing a phase of stabilisation for several species due to a variety of potential causal factors. These include bird population dynamics, food competition and habitat limitations.

An increase of bird species diversity was a particularly positive element of the 2019 results, while the Australian bushfire catastrophe may have negatively impacted the Whakatane area population of the migratory shining cuckoo arriving on New Zealand shores in the second half of 2019.

It also appears that the North Island (NI) robin population at KPSR has stabilised from 2015 to 2019, indicating that the 2014 translocation project in the nearby Ohope Scenic Reserve (OSR) has assisted in developing a stable population across the area, well beyond OSR boundaries.

As multiple years of monitoring data are needed to accurately interpret any emerging trends, the recommendation is that biennial monitoring continues, aligned with a consistency in approach for subsequent transect and 5MBC re-measures.



## 2 Introduction

Kohi Point Scenic Reserve (KPSR) is located in the Eastern Bay of Plenty, between Whakatane and the Ohope township. It extends into the Pacific Ocean and is bordered by farmland and residential areas. The Reserve supports a population of North Island brown kiwi (*Apteryx mantelli*, *Apteryx australis*, *Apteryx bulleri*), and adjoins the Kaputerangi Historic Reserve, comprising 186 hectares of mainly indigenous forest, extending from the ridge above the Whakatane Heads, across the valley to Otarawairere, and along the coast to the west end of Ohope Beach. A major walking track, Nga Tapuwae o Toi, leads from Whakatane to Otarawairere Bay and West End<sup>1</sup>.



**Figure 1. Onshore View Of Kohi Point Scenic Reserve.**

KPSR has a history of possum (*Trichosurus vulpecula*) management, initially through an Environmental Enhancement Fund (EEF) project from 2002 to 2004, but no targeted rat (*Rattus rattus*; *Rattus norvegicus*; *Rattus exulans*) control before 2009 (Bancroft *et al*, 2009). Since then predator control has been carried out on an annual basis, including the biannual bait runs across the bait station network and regular trapping for stoat, weasel and ferret (*Mustela erminea*; *Mustela nivalis*; *Mustela furo*).

Forest bird monitoring was first conducted in KPSR in 2010. In 2012 an improved transect methodology was established for monitoring in the Reserve. Set up for the new methodology was completed in November 2012 and monitoring was conducted immediately. The first re-measure across all transects was conducted during November and December 2013.

Forest bird monitoring is one of several tools used by the Bay of Plenty Regional Council (BOPRC) to monitor biodiversity trends, providing information about temporal variation in bird abundance in response to management actions (primarily introduced predator control).

<sup>1</sup> <http://www.whakatane.govt.nz/Services/Parks-and-Public-Spaces/Parks-and-Gardens/>

As intensive predator control has been carried out annually since 2009 there is an expectation that, over time, forest health will improve and relative abundance of indigenous birds will increase.

This is the seventh year of birds surveys at KPSR using the new monitoring design implemented in 2012 (see Quinn & Greaves 2013 for details) and the first year since a biennial monitoring regimen was introduced for KPSR, Ohope Scenic Reserve (OSR) and Mokorua Bush Scenic Reserve (MBSR) as per previous recommendations (Quinn and Campbell 2017). Consequently, these three sites were not re-measured in 2018.

KPSR, MBSR and OSR are all subject to the same rat and possum control regime and are all managed under the Whakatāne and Ōhope Sites Environmental Programme 2018-2023 (along with the Ngāti Awa Kawenata and Dodds Covenant). KPSR and MBSR are administered by Whakatāne District Council while the OSR is jointly managed by DOC and Te Rūnanga o Ngāti Awa through the management committee Te Tapa Toru a Toi. Partners in the Whakatāne and Ōhope Sites Environmental Programme include Bay of Plenty Regional Council, Department of Conservation, Whakatāne District Council, Te Rūnanga o Ngāti Awa, Te Tapa Toru a Toi, Ngāti Awa Group Holdings Limited and Whakatāne Kiwi Trust.

In May 2014 DOC, in partnership with the Whakatāne Kiwi Trust, translocated 40 North Island (NI) robin (Toutouwai; *Petroica longipes*; At Risk-Declining) to boost the number of remnant breeding pairs in the OSR (Walter and Palmer 2014). These birds have since dispersed across the three Whakatane monitoring sites and have been observed in KPSR (Quinn and Campbell 2018).

As all three sites are in relatively close proximity to one another and connectivity exists between KPSR and OSR, and OSR and MBSR by way of stands of pohutukawa (*Metrosideros excelsa*) and pockets of native bush, respectively, it is worthwhile assessing any similar bird population trends that appear across these sites.



Figure 3. Location Of The Three Whakatane Monitoring Sites.

The primary objective of this report is to present and discuss a summary analysis of temporal trends in the relative abundance of common indigenous birds between 2012 and 2019 as the result of predator control in KPSR. Understanding temporal trends in bird abundance will help managers to gauge the success of the predator control programmes and inform strategic decision making for predator control going forward.

## 3 Method

Information about the study site and its biodiversity characteristics can be found in the 2012 monitoring report prepared by FWIF (Quinn & Greaves 2013). The rationale for the current monitoring design and information about historical designs is also detailed in this report.

### 1.1 Transect Placement

Transects of 250m in length were placed within the study area prior to initial baseline bird monitoring, with minimum distances of 150m between each transect on even terrain and 200m on steep terrain. This amount of separation is required to reduce the chances of double counting a given bird. All twelve transects follow bait lines, suitable tracks or purposely cut tracks to ensure monitoring is conducted within our Health and Safety parameters (Fig. 2).

GPS coordinates for each transect have been recorded. Instructions on how to reach transects are also detailed, as well as a difficulty grading for each, in Appendix A.

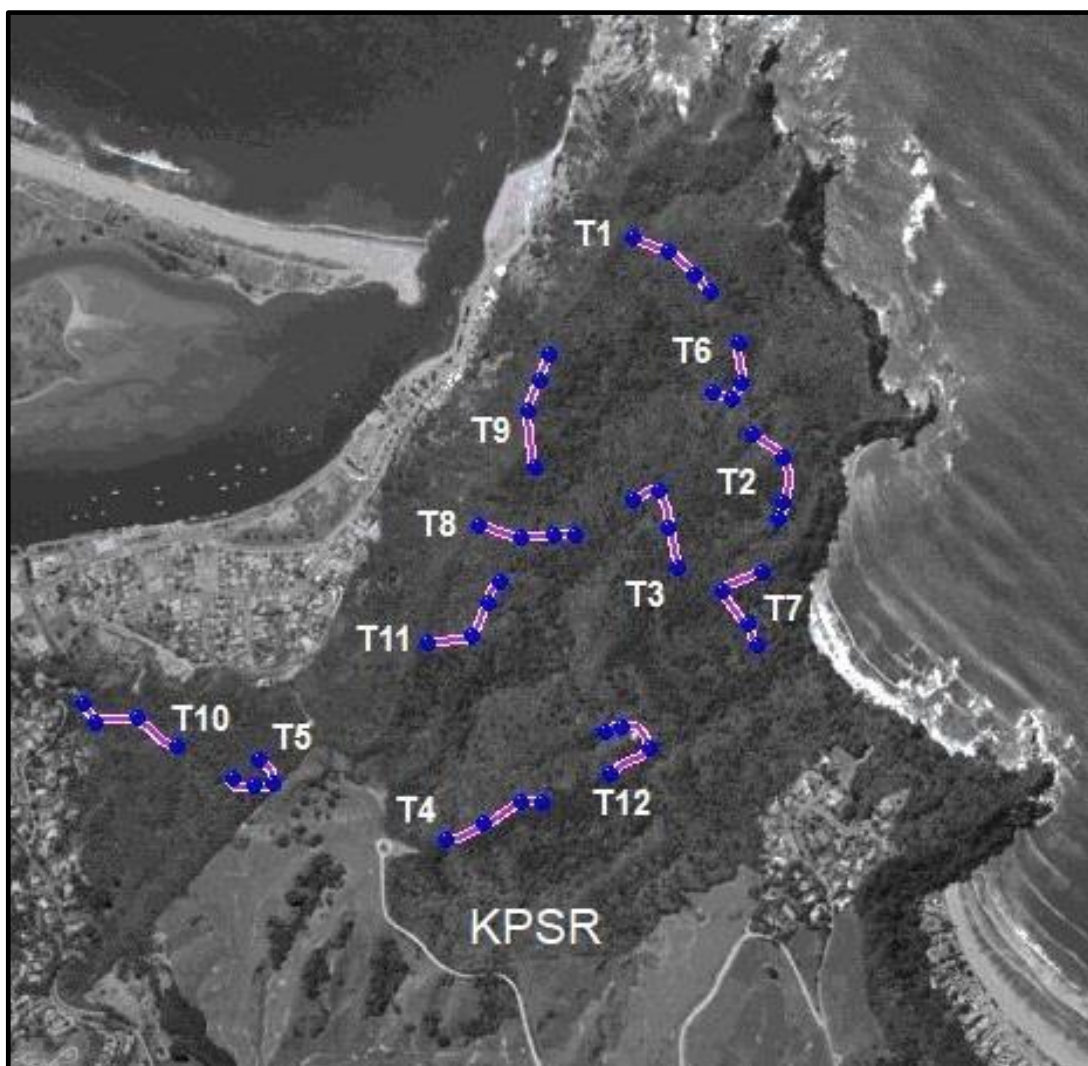


Figure 3. Current Transect Set-up In Kohi Point Scenic Reserve.



## 1.2 Transect Bird Counts

Transect line counts were used to measure relative bird abundance in the spring/early summer of each year. Count methodology followed Dawson and Bull (1975), except where otherwise stated.

Three individual counts were carried out at each transect between 22nd November and 7th December 2019. In an effort to reduce the amount of variation caused by daily patterns in bird abundance, each transect was visited once during each of the following times: early morning (6-10am), mid-day (10am-1pm) and afternoon (1-4pm).

The observer walked at a consistent slow pace along a given transect and identified and counted all the birds seen or heard perpendicular to that transect. No individual bird was knowingly counted more than once along transects.

As per the recommendation from a peer review of the forest bird monitoring projects, that an additional, suitably experienced observer should be used in future, to reduce the period over which surveys are undertaken, and provide redundancy if individual observers become unavailable (Fitzgerald *et al* 2019) we assessed the impact another observer would mean for this specific site. This project is the smallest of the five forest bird sites monitored in the Whakatane District and a time benefit analysis determined that using more than one observer does not assist in any fieldwork efficiency, considering the requirements of the methodology and minimal impact in shortening the monitoring time period. This includes the addition of 5-Minute Bird Counts (5MBCs). Therefore, to maintain the current fieldwork window, and to overcome observer bias, only one skilled observer (Conor Quinn, FWIF) conducted all counts.

An example of count data sheets for transects and 5MBCs can be found in Appendix B. Copies of raw data sheets and raw data in excel format were also supplied to BOPRC.

## 1.3 5-Minute Bird Counts (5MBCs)

A single series of 5MBCs were conducted in KPSR this year for potential comparative analysis in subsequent years and comparative analysis with other similar projects in New Zealand. A 5MBC was conducted at the beginning and end of each of the 12 transects, for 24 total replicates completed during the fieldwork window. Count methodology followed Dawson and Bull (1975), with a one-minute wait period initiated upon arriving at the location, prior to beginning each five-minute measure. All birds seen or heard were identified, included on the field sheet and marked in one of three distance categories: <20 m, 20–100 m, and >100 m. No individual bird was knowingly counted more than once. These 5MBCs will be conducted each year transect re-measures are conducted at the site. Comparative analysis of 5MBCs in results and discussion of those results may be included in subsequent reports.

To overcome observer bias, only one skilled observer (Conor Quinn, FWIF) conducted all 5MBC counts at KPSR.

A table detailing the results can be found in Appendix D. Copies of raw data sheets and raw data in excel format were also supplied to BOPRC.

## 1.4 Data Analysis

### Abundance estimates and statistical analyses

Relative abundance for transects describes how species are representative throughout a given area and allows for a comparable index of each species between sites and over time. Given that data has been collected from this site by the same methodology since 2012, this was a suitable approach that allowed easy comparisons between years and within species. We calculated relative abundance as:

$$abundance = \frac{\sum(\text{average birds per transect})}{\text{total number of transects}}$$



We tested whether counts were different between species and years using ANOVA and then performed a Tukey's Post Hoc Test which allowed for multiple comparisons between years and species. Tukey's test is more suited than one-way ANOVA's for comparing multiple means than when there are more than two groups as it reduces the chance of type 1 error.

Not all data collected from this site is presented in this report. Many species, including some indigenous species, were so sparsely distributed that trends in their abundance are difficult to determine statistically. In order to make the statistical analyses as robust as possible, only data from species that were counted on a large proportion of transects ("common species") are generally included. The exception to this rule is NI robin, because of its significance as an indicator species. All other indicator species were common on transects.

A comparison for spread of NI robin across transects was included this year, following on from the analyses conducted in the combined Whakatane Region Bird Monitoring 2017 Report. Spread is shown as the percentage of transects occupied by at least one NI robin.

## 4 Results

Twenty-four individual bird species were detected during the 2019 survey, including 8 endemic, 4 native and 12 introduced species. This was a higher diversity of species than in previous years (range = 19–23). Weka (woodhen; *Gallirallus australis greyi*), redpoll (*Carduelis flammea*), and greenfinch (*Carduelis chloris*) were new records for this site. Harrier hawk (kahu; *Circus approximans*) had previously been detected every year except 2013 and was absent again this year. NZ falcon (karearea; *Falco novaeseelandiae*), kaka (bush parrot; *Nestor meridionalis*), paradise shelduck (pūtakitaki; *Tadorna variegata*), pukeko (Australasian swamphen; *Porphyrio melanotus melanotus*) and whitehead (pōpokatea; *Mohoua albicilla*) were the only indigenous species that had been recorded at least once during previous years but remained undetected in 2019. A complete list of common, scientific and Māori names for 2019 can be found in Appendix C.

Counts of common indigenous species; bellbird (korimako, *Anthornis melanura*), fantail (pīwakawaka, *Rhipidura fuliginosa placabilis*), grey warbler (riroriro, *Gerygone igata*), kereru (wood pigeon, *Hemiphaga novaeseelandiae*), kingfisher (kōtare, *Todiramphus sanctus vagans*), NI robin, shining cuckoo (Pīpīwharaua, *Chrysococcyx lucidus lucidus*), silvereve (tauhou, *Zosterops lateralis lateralis*), tomtit (miromiro, *Petroica macrocephala toitoi*), tui (parson bird, *Prothemadera novaeseelandiae*) and introduced species; blackbird (*Turdus merula*) and chaffinch (*Fringilla coelebs*) were greater in 2019 than when surveys began in 2012 (Tukey<sub>Indigenous</sub>: est = -7.61, t = -5.35, p < 0.001; Tukey<sub>Introduced</sub>: est = -3.78, t = -5.62, p < 0.001; Figure 4). This was the first year in which counts of introduced birds were significantly greater than when surveys began. Also, while counts of indigenous birds appeared lower in 2019 than in the previous two survey years, this change was insignificant (Tukey<sub>2016-2019</sub>: t = 0.85, p = 0.98; Tukey<sub>2017-2019</sub>: t = -0.09, p = 1.00; Figure 3).

Relative abundance of common indigenous species did not change between 2017 and 2019 (Figure 5; Table 1). Nevertheless, relative abundance of bellbird, grey warbler, silvereve, tomtit and tui have increased since initial surveys in 2012 (Figure 5; Table 1).

Our tracking spread for NI robin has remained relatively steady since NI robin were first observed in 2014, remaining between a band of 33-50% since 2015 (Figure 6).

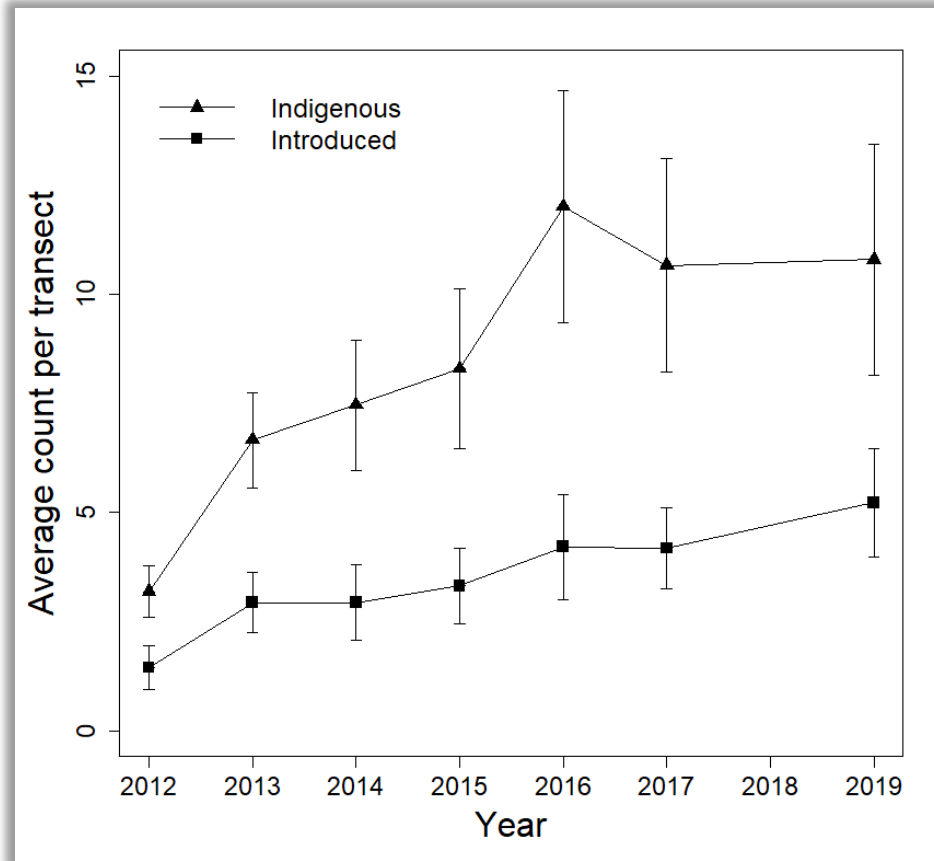


Figure 4. Relative abundance of ten common indigenous (triangles) and two introduced (squares) birds detected along 12 survey transects between 2012–2017 and 2019 in Kohi Point Scenic Reserve.

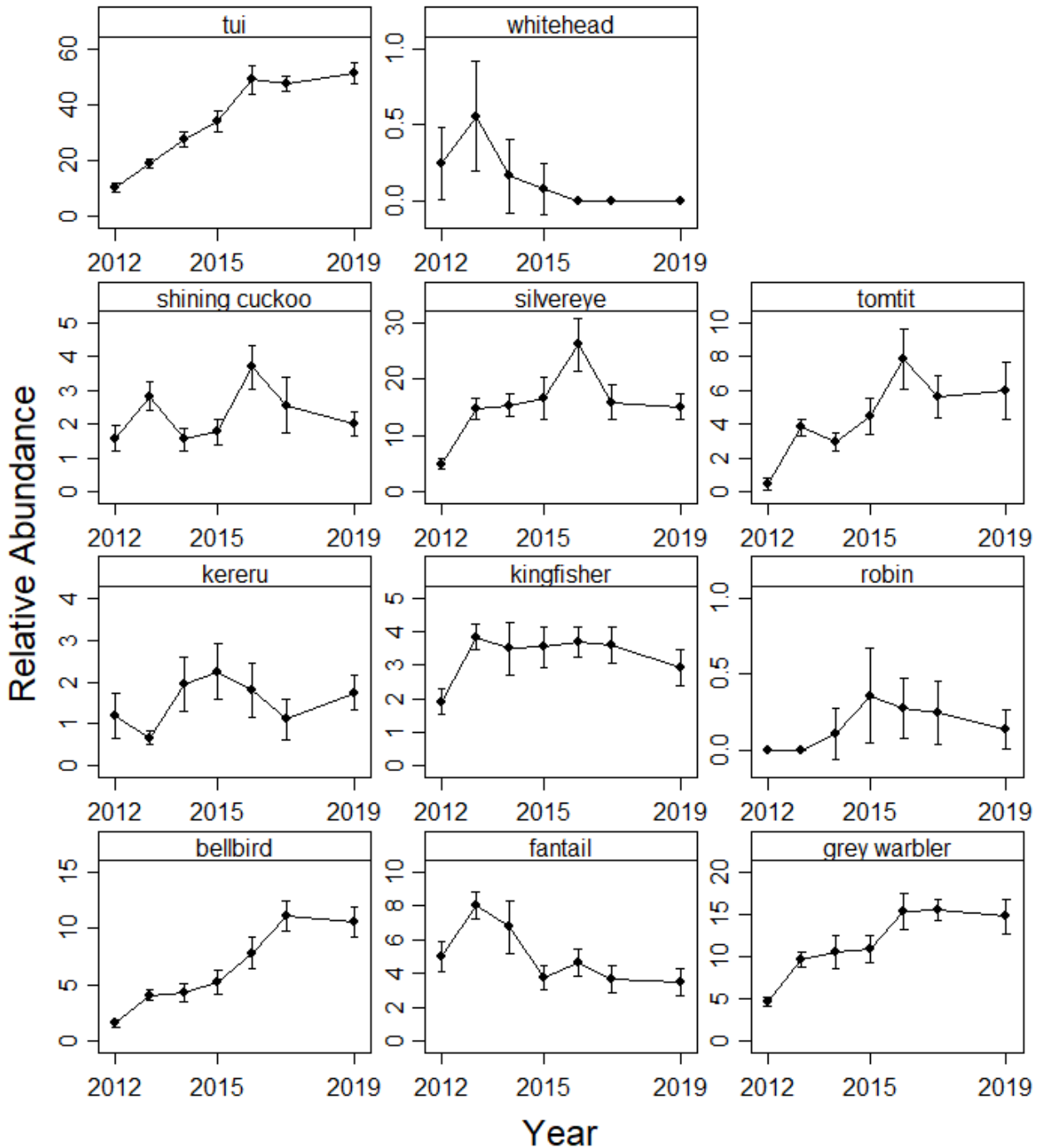
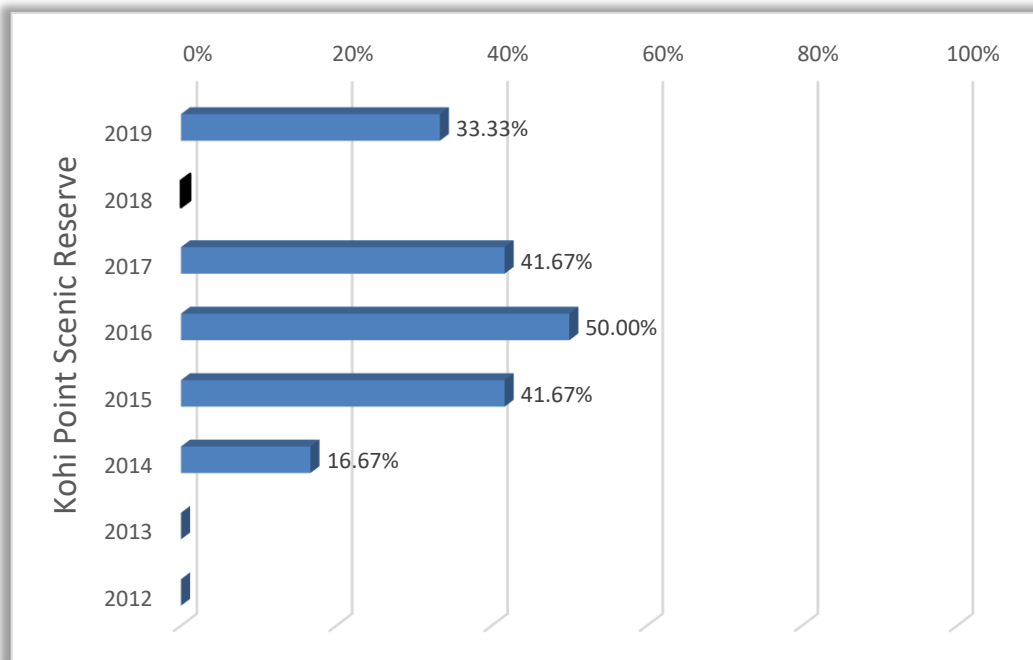


Figure 5. Relative abundance of indigenous indicator species detected along 12 survey transects between 2012-2017 and 2019 in Kohi Point Scenic Reserve. Error bars represent 95% Confidence Intervals.



**Table 1 – Results from Tukey Post Hoc test illustrating the differences in relative abundance for each species between the 2012 and 2019 survey years (first column) and 2017 and 2019 survey years (last column) in Kohi Point Scenic Reserve. Estimate values indicate the mean change in relative abundance of the earliest year (i.e., the negative value of bellbird in 2012-2019 comparison indicates that abundance was lower in 2012 when compared to the baseline year of 2019). P-values less than 0.05 indicate a significant change.**

	2012-2019		2017-2019	
	Estimate	P value	Estimate	P value
Bellbird	-9.06	<0.001	0.56	0.99
Fantail	1.53	0.28	0.19	1.00
Grey warbler	-10.11	<0.001	0.82	1.00
Kereru	-0.56	0.75	-0.64	0.61
Kingfisher	-1.00	0.13	0.67	0.59
Robin	-0.14	0.93	0.11	0.97
Shining Cuckoo	-0.42	0.91	0.56	0.72
Silvereye	-10.19	0.001	0.75	1.00
Tomtit	-5.53	<0.001	-0.31	1.00
Tui	-40.61	<0.001	-3.92	0.61
Whitehead	0.25	0.55	0.00	1.00



**Figure 6. Spread of NI robin at KPSR from the start of monitoring using the current methodology, by percentage of transects where species observed. Black squares signify monitoring was not conducted that year.**

## 5 Discussion

The 2019 monitoring season marks the ninth year of forest bird monitoring in Kohi Point Scenic Reserve (KPSR) and the eleventh consecutive breeding season subject to intensive predator control. It is the first year of results since initiating a biennial monitoring regimen, meaning monitoring was not conducted in 2018 and will be conducted again in 2021.

Relative abundance for indigenous species appears to have plateaued since a peak in 2016, but the increase from 2012 to 2019 remains significant. If the 2016 spike is removed, a moderately smooth upward trend would appear to be the case since monitoring began. Counts for bellbird, tui, grey warbler, silvereye and tomtit have individually shown significant increases in relative abundance between 2012 and 2019, suggesting that ongoing predator control continues to enhance the indigenous bird population and habitat health in the KPSR.

Given the importance of nectarivores (honeyeaters) bellbird and tui in the pollination and seed dispersal of a range of native plant species (Anderson and Craig 2003), their significant increases since 2012 continue to be a very positive sign for improvement of bush vitality.

Multiple observations of weka at KPSR and across all three sites would indicate that the resident population is growing. A ground dwelling bird, similar to kiwi, weka is susceptible to predation and breeds well when there is an absence of predators (Bramley and Veltman 1998; Williams *et al* 2012), so ongoing population increases would indicate low pest pressure at KPSR.

The NI robin population at KPSR appears to have stabilised from 2015 to 2019, indicating that the translocation project has assisted in developing a stable population across all three monitoring sites in the area, well beyond OSR boundaries. An assessment of several NI robin studies (Williams *et al* 2012) found that not all translocated populations increase in subsequent years, even with lower pest pressure. These studies ruled out a variety of potential variables, including poisoned bait consumption. However, it may be that population density and territory size impact NI robin foraging and breeding behaviour, with those in higher density populations more active than those residing in larger territories (Godfrey 2003). It is therefore possible that the initial population gains from the breeding season following the translocation at the OSR were due to relatively close proximity of breeding pairs, which resulted in increased fecundity in the short term. As birds and fledglings dispersed across the area, and their territories expanded into KPSR and MBSR, fecundity then reduced and the overall population stabilised. Therefore, KPSR and the other two monitoring sites in the area may not see the increases in relative abundance for this species as we have seen for the likes of bellbird, tomtit and tui. Further species-specific study would be required to qualify such an hypothesis.

Apart from NZ falcon, all other species not detected at KPSR were observed at at least one of the two other sites. This is not unusual for a cryptic species such as NZ falcon and is unlikely to indicate anything untoward regarding its resident population or avian food supply (Kross *et al* 2018).

A common trend in 2019 across all sites was the significant reduction in the relative abundance of shining cuckoo. This may be climate change related, albeit indirectly, with investigations into Australian bushfires and climate change links ongoing<sup>2</sup>. Shining cuckoo generally travel to New Zealand to breed from western Pacific islands August to October, with a transit stop in the forests of northeastern Australia, between the Coral Sea and Brisbane (Williams *et al* 2006). In that area, from June 2019, forest fires were burning, with a combination of major fires combining in the area from late August 2019 to form several immense fires (Huf and Mclean 2020). The forest damage was catastrophic, meaning much of the transit zone for shining

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<sup>2</sup> [https://www.worldweatherattribution.org/wp-content/uploads/WWA-attribution\\_bushfires-March2020.pdf](https://www.worldweatherattribution.org/wp-content/uploads/WWA-attribution_bushfires-March2020.pdf)

cuckoo was either burning, destroyed or smoke shrouded, resulting in depleted food sources and a compromised transitory path. As shining cuckoo has displayed phenological responses to climate change (Both et al. 2006), it is conceivable that these contributing factors resulted in fewer shining cuckoo making it to New Zealand shores and thus, a reduced population in the Whakatane District. Subsequent re-measures may shed further light on this hypothesis.

As individual bird species experience a variety of population growth phases over time in response to ongoing intensive predator control (Quinn and Campbell 2018), it is possible a period of stabilisation is occurring at KPSR. Variables other than pest pressure and climate change should also be considered, as inbreeding depression, food scarcity and competition may slow growth rates for some indigenous species when limitation by predation is alleviated (Innes *et al* 2010). This may also include competition from exotic species assimilating to native flora and habitat, as introduced species have shown its first significant increase at KPSR since monitoring began.

Hypotheses around population density and territory size in relation to fecundity may apply to many species other than NI robin and the unintended consequences of creating pest-free environments for indigenous bird species could result in a variety of differing scenarios around carrying capacity for individual monitoring sites. Increased knowledge around the inter-dependence of certain species and population dynamics in regard to food competition and habitat limitations can only assist in ensuring future pest control programmes have the most informed pathway to success.

The significant improvement of relative indigenous bird abundance since the establishment of monitoring illustrates the effectiveness of predator control programmes. While increasing diversity of indigenous species, including weka in 2019, and stabilisation of the NI robin population across the local area, shows how continuous and intensive pest control can support ongoing habitat and species enhancement over the long term.

The KPSR is home to a variety of ecologically diverse habitats, meaning that pest control will be critical for protecting and enhancing the resident flora and fauna. The increase in bird species diversity was a particularly positive element of the 2019 results and we expect to see the bird community continuing to thrive over time in response to ongoing predator control. Breeding success and bird conspicuousness naturally fluctuate from year to year so multiple years of monitoring data are needed to accurately interpret any emerging trends. Therefore, it is recommended biennial monitoring continues, aligned with a consistency in approach for subsequent transect and 5MBC re-measures.

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# Appendices

Appendix A details GPS coordinates and directions for locations to each of the transects established for the project.

Appendix B are photos of the Field Sheet Masters used for fieldwork.

Appendix C details Common, Scientific and Maori names of birds.

Appendix D details the raw results from 5MBC counts conducted as part of 2019 fieldwork.

Appendix A - Locations and Directions for Transects in Kohi Point Scenic Reserve

Transect	Grid Ref Easting	Grid Ref Northing	Transect Difficulty Grading 1 = Low 2 = Med 3 = High	Location Instructions
<b>TR1</b>				
Start	1952803	5792883	2	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 20 mins until you reach the track marker for the beginning of 'O' line. Walk in to O1 where TR1 starts. Ends between O3 & O4. Follow O line to T6.
250m /end	1952968	5792769		
<b>TR2</b>				
Start	1953058	5792465	3	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 10 mins until marker for 'J' line. Enter here and follow J line, passing T8 & T3 until reaching 'L' line. Follow pink marking tape as L line crosses to K line then O line, passing T7 along the way. End of T2 between O18 & O17.
250m /end	1953116	5792285		
<b>TR3</b>				
Start	1952901	5792179	1	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 10 mins until marker for 'J' line. Enter here and follow J line, passing T8 until end of T3 reached around J6. It starts between J9 & L1.
250m /end	1952806	5792324		
<b>TR4</b>				
Start	1952402	5791599	2	From the main lookout car park go to the eastern edge of the grass and follow the pink marking tape to F1, where TR4 begins. Transect continues down the ridge past G1, F12 and finishes between F13 & F14.
250m /end	1952611	5791677		
<b>TR5</b>				
Start	1951996	5791763	3	From main lookout car park follow main Toi's track 3 mins west to B7 marker on your right, on the left follow double pink tape to D13 where transect begins. Transect follows 'D' line, finishing between D10 & D9.
250m /end	1951951	5791731		
<b>TR6</b>				
Start	1953028	5792661	3	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 20 mins until you reach the track marker for the beginning of 'O' line. Walk in along TR1. T6 starts between O5 & O6 and ends just after O9.
250m /end	1952976	5792555		
<b>TR7</b>				
Start	1953081	5792167	2	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 10 mins until marker for 'J' line. Enter here and follow J line, passing T8 & T3 until reaching 'L' line. Follow pink marking tape as L line crosses to K line then O line. T7 starts at O19. It follows O line and ends between O21 & O22.
250m /end	1953070	5792014		
<b>TR8</b>				
Start	1952473	5792271	1	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 10 mins until marker for 'J' line. Enter here and T8 starts around J1, ending between J3 & J4.
250m /end	1952681	5792252		
<b>TR9</b>				
Start	1952593	5792395	1	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 15 mins until marker for 'L' line. Go into E line and T9 starts before E13.
250m /end	1952626	5792637		
<b>TR10</b>				
Start	1951827	5791801	1	From main lookout car park follow main Toi's track 7 mins west to B1 marker. T10 starts on your right, crossing main track, then coming out on main track and finishing past C1.
	1951630	5791890		
<b>TR11</b>				
Start	1952363	5792017	2	From main Kohi Point car park follow Toi's track north past Tauwhare Pa for 5 mins until marker for 'E' line. T11 starts at E line crossing, then goes down to F line. Follow pink marking tape to end of transect at F25. Can follow marked track through to start of T8.
250m /end	1952522	5792149		
<b>TR12</b>				
Start	1952755	5791739	3	From the main lookout car park go to the eastern edge of the grass and follow the pink marking tape to F1, and follow TR4 begins past G1, F12, F13 & F14. Go onto H line where T12 starts at H2, following H line before crossing over to I line, finishing at I7.
250m /end	1952745	5791831		

Appendix B

**Bird Monitoring Field Sheets**

**Transects**

**5MBCs**

**TRANSECT BIRD MONITORING FIELD-SHEET**

Location Name: Kohi Point Scenic Reserve		Grid Refs: E: N:		Date:	
Transect No:		Start:		Finish:	
Sun:		Temp:		Wind:	
		Rain:		Other Noise:	
Fieldworker: C Quinn					

Species	Tally		Total No.
	Seen*	Heard*	
Australasian Harrier			
Bellbird			
Blackbird			
Chaffinch			
Falcon NZ			
Fantail			
Fernbird			
Goldfinch			
Grey Warbler			
Kaka			
Kereru			
Kingfisher			
Long-tailed cuckoo			
Maggie			
Myna			
Paradise Shelduck			
Peacock			
Pheasant			
Pukeko			
Quail, California			
Redpoll			
Robin, New Zealand			
Rosella, Eastern			
Shining Cuckoo			
Silvereye			
Skylark			
Sparrow, Hedge			
Starling			
Swallow, Welcome			
Thrush, Song			
Tomtit			
Tui			
Turkey			
Whitehead			
Yellowhammer			
Unknown			

\* If seen and heard, record it only as seen

**Flowering, fruiting** – record details if relevant

Plant Species	Fruit or Flowers	Rare, occasional, common, abundant, or very abundant	Notes

**5MBC BIRD MONITORING FIELD-SHEET**

Location Name: Kohi Point Scenic Reserve		Grid Refs: E: N:		Date:	
5MBC no:		Start:		Finish:	
Sun:		Temp:		Wind:	
		Rain:		Other Noise:	
Fieldworker: Quinn					

Species	Tally and distance			Total No.
	>20m	20m-100m	100m+	
Australasian Harrier				
Bellbird				
Blackbird				
Chaffinch				
Falcon, NZ				
Fantail				
Fernbird				
Goldfinch				
Grey Warbler				
Hedge Sparrow				
Kaka				
Kereru				
Kingfisher				
Kokako				
Long-tailed cuckoo				
Maggie				
Myna				
Paradise Shelduck				
Peacock				
Pheasant				
Pukeko				
Redpoll				
Robin, New Zealand				
Rosella, Eastern				
Shining Cuckoo				
Silvereye				
Starling				
Swallow, Welcome				
Thrush, Song				
Tomtit				
Tui				
Turkey				
Quail, California				
Whitehead				
Yellowhammer				
Unknown				

## Appendix C – Common, Scientific and Maori names of birds

Common Name	Scientific Name	Maori Name	2016 Threat Category
Australian magpie*	<i>Gymnorhina tibicen</i>	n/a	Introduced and Naturalised
Bellbird	<i>Anthornis melanura</i>	Korimako	Not Threatened
Blackbird*	<i>Turdus merula</i>	n/a	Introduced and Naturalised
California quail*	<i>Callipepla californica</i>	n/a	Introduced and Naturalised
Chaffinch*	<i>Fringilla coelebs</i>	Pahirini	Introduced and Naturalised
Common pheasant*	<i>Phasianus colchicus</i>	Peihana	Introduced and Naturalised
Eastern rosella*	<i>Platycercus eximius</i>	n/a	Introduced and Naturalised
Falcon, NZ	<i>Falco novaeseelandiae</i>	Kārearea	Recovering
Fantail	<i>Rhipidura fuliginosa placabilis</i>	Pīwakawaka	Not Threatened
Fernbird, North Island	<i>Bowdleria punctata vealeae</i>	Mātātā	Declining
Goldfinch*	<i>Carduelis carduelis</i>	n/a	Introduced and Naturalised
Greenfinch	<i>Carduelis chloris</i>	n/a	Introduced and Naturalised
Grey warbler	<i>Gerygone igata</i>	Riroriro	Not Threatened
Harrier hawk	<i>Circus approximans</i>	Kāhu	Not Threatened
House sparrow*	<i>Passer domesticus</i>	n/a	Introduced and Naturalised
Kaka (bush parrot)	<i>Nestor meridionalis</i>	Kaka	Recovering
Kereru (wood pigeon)	<i>Hemiphaga novaeseelandiae</i>	Kereru	Not Threatened
Long-tailed cuckoo	<i>Eudynamys taitensis</i>	Koekoeā	Naturally Uncommon
Myna*	<i>Acridotheres tristis</i>	n/a	Introduced and Naturalised
Morepork (NZ owl)	<i>Ninox novaeseelandiae novaeseelandiae</i>	Ruru	Not Threatened
New Zealand kingfisher	<i>Todiramphus sanctus vagans</i>	Kōtare	Not Threatened
North Island robin	<i>Petroica longipes</i>	Toutouwai	Declining
Paradise shelduck	<i>Tadorna variegata</i>	Pūtakitaki	Not Threatened
Peacock*	<i>Pavo cristatus</i>	n/a	Introduced and Naturalised
Pukeko (Australasian swamphen)	<i>Porphyrio melanotus melanotus</i>	Pukeko	Not Threatened
Redpoll*	<i>Carduelis flammea</i>	n/a	Introduced and Naturalised
Starling*	<i>Sturnus vulgaris</i>	n/a	Introduced and Naturalised
Shining cuckoo	<i>Chrysococcyx lucidus lucidus</i>	Pīpīwharau	Not Threatened
Silvereye	<i>Zosterops lateralis lateralis</i>	Tauhou	Not Threatened
Song thrush*	<i>Turdus philomelos</i>	n/a	Introduced and Naturalised
Tomtit	<i>Petroica macrocephala toitoi</i>	Miromiro	Not Threatened
Tui (parson bird)	<i>Prothemadera novaeseelandiae</i>	Tui	Not Threatened
Weka (woodhen)	<i>Gallirallus australis greyi</i>	Weka	Recovering
Welcome swallow	<i>Hirundo neaxena neoxena</i>	Warou	Not Threatened
Whitehead	<i>Mohoua albigilla</i>	Pōpokatea	Declining
Wild Turkey*	<i>Meleagris gallopavo</i>	n/a	Introduced and Naturalised
Yellowhammer*	<i>Emberiza citrinella</i>	n/a	Introduced and Naturalised
*Introduced species			



## Appendix C - Raw results from 2019 5MBC counts

Station No.	Date (dd/mm/yy)	Bellbird	Blackbird	Chaffinch	Fantail	Grey Warbler	Kereru	Kingfisher	Magpie	Myna	Pheasant	Rosella, Eastern	Shining Cuckoo	Silvereye	Sparrow, hedge	Swallow, Welcome	Tomtit	Tui
1a	6.12.19	1	1			4		1						2			1	6
1b	6.12.19	1	1	4				1						5				5
2a	22.11.19	2		2		5		1					2	4				8
2b	22.11.19	2		2		5							1	3				11
3a	22.11.19	2	2			4	1							5			2	7
3b	22.11.19	3				3	1	1					1					9
4a	30.11.19	2	2	3			1			3					2	2	2	13
4b	30.11.19	2									1			3				8
5a	6.11.19	2	4		1	3			3					4		3		9
5b	6.11.19	2	2	1	1	2		1						4		2		5
6a	22.11.19	4		2	1	3		1									1	10
6b	22.11.19	2		4	2	3	1	1						3			1	12
7a	22.11.18	3		3		2	1						1	3				8
7b	22.11.19	3			1	3							1	7				8
8a	30.11.19	1	1	2	1	2								4				8
8b	30.11.19	1	1	3	1	4		1						2				10
9a	6.12.19	2		3	2	3		1						3				8
9b	6.12.19	1	3	2		3	1							1				6
10a	6.12.19	2	2		1	3		1			1		1	4			1	7
10b	6.12.19	1	1	2		5		1				2		2				6
11a	30.11.19		1	3		2								2				6
11b	30.11.19			4	1	3		1						2				10
12a	30.11.19	2		3	1						1			3			1	12
12b	30.11.19	1	2		1	3							1					7