

Bird Survey in the Upper Waimata Valley

Survey and Report by Malcolm Rutherford
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for

Waimata Catchment Group

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Summary

In November and December 2023, a 123 Five Minute Bird Counts were carried out across four properties in which predator trapping was started in 2020 in the Upper Catchment of the Waimata River, East Coast, New Zealand. The area surveyed offers a wide range of bird habitat including forest,

A total of 1653 birds of 42 species were heard or seen during surveys across the wide range of habitats available in the surveyed area. An additional two species were seen or heard but not during surveys. Highlights included Pūweto (Spotless Crake), Popokatea (Whitehead), and North Island Kākā.



Whitehead (Pōpokotea)

Introduction

Ecological Context

The upper Waimata Catchment is in the Waiapu Ecological District. Leathwick et al, in the Protected Natural Areas Report (1995) note the “profound reduction in both the number of native bird species present and the abundance of many of those species” due to the reduction in habitat and the introduction of predatory species.

The threatened species noted in the Protected Natural Areas Program report relevant to this study include Bittern, Banded Rail, Spotless Crake, and occasional visits by Kotuku. New Zealand Dabchick occurring on a small number of ponds.

Kākā were noted as being recorded occasionally in remnant bush blocks while Falcon are noted as occurring in low numbers throughout the lowlands. Weka were present in the area too, until a marked reduction in the late 1980s.

In addition to the loss of many native species from the upper Waimata Catchment, numerous introduced species have been previously recorded in the mosaic of farmland, plantation forestry, scrub and indigenous forest remnants.



Figure 1 Waimata Catchment

Current vegetation cover as it relates to bird habitat

The Upper Waimata catchment is primarily steep pasture with sheep and beef farms covering much of the land. There are numerous ponds many of which are artificial dams used for stock water while some are naturally occurring. There are also wetlands with the majority of these being on Monowai Station. There are also significant areas of *Pinus radiata* plantation forestry.

In the upper catchment steep slopes, gullies, and waterways have often been planted with willows and/or poplars. These are often mixed with some native vegetation. In some areas on the Waimata river and tributaries the riparian vegetation is predominantly native.

There are also indigenous forest remnants. These are often small and generally don't have many

emergent trees, but where they do these are Pukatea, Kahikatea, Rimu, and Black Beech over a Tawa/Kohekohe canopy.

There are also extensive areas of Mānuka and Kānuka especially on Hiwiroa Station.

There are occasional small stands of old large Macrocarpa, Eucalyptus trees, or Pinus Radiata either growing together or singly.

Pasture on flat or easy country ranges from recently sowed improved pasture with a diverse species mix, to rougher damp flats with rushes.

Hill country pasture, in addition to exotic grasses, often has a range of thistles, rushes in seeps, and occasional Kānuka/Mānuka.

This highly varied mosaic of habitat provides excellent cover food, and nesting opportunities for a wide range of bird species.



Mosaic of habitat

Method

The survey used the standard five-minute bird count (5MBC) methodology (Dawson and Bull 1975) with some minor modifications.

A pragmatic accessible route through the farm was determined, and every 200m along this path a 5MBC station was established. The predetermined path attempted to maximise the habitats covered by 5MBC stations while staying out of areas with very difficult access. Wetlands and ponds were surveyed whether they were 200m from the previous station or not. This resulted in 3 stations being 140, 150, and 160m from their nearest station. Similarly, to capture bird species in remnant areas of bush, the distance between stations was on two occasions extended to 220, and 240 metres.

When approaching wetlands and ponds, any birds which left on my approach were included in the count and the 5 minute timer was started from when they flew off.

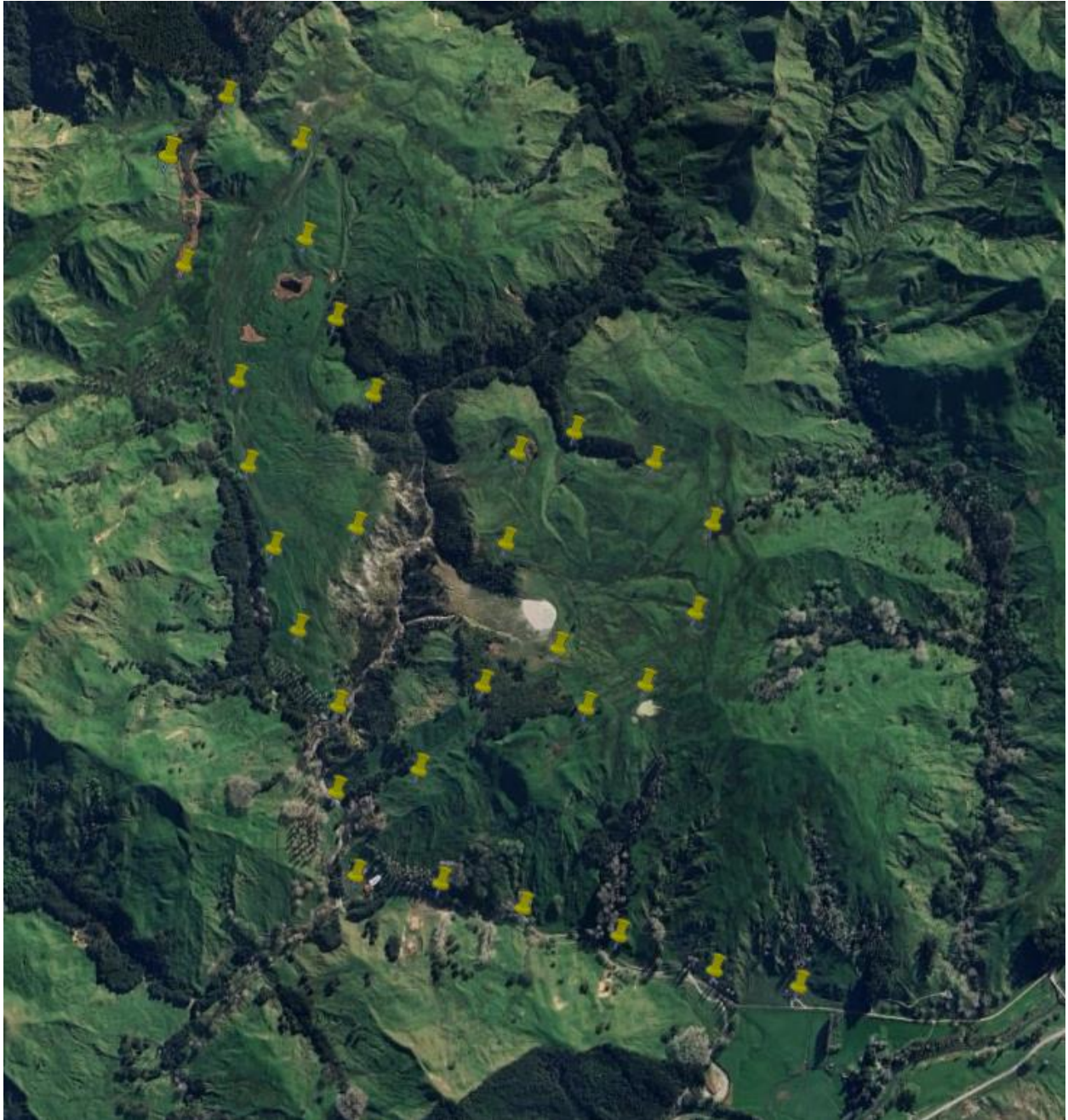
Birds were identified at whatever distance they were heard or seen (rather than at a 200m limit as per the Dawson and Bull methodology)

“Merlin Bird Identification” app was used as the five minute timer and for confirmation of calls of some species. At this stage it cannot identify many New Zealand bird calls so cannot be relied on heavily for this work, but is useful for confirming European species.

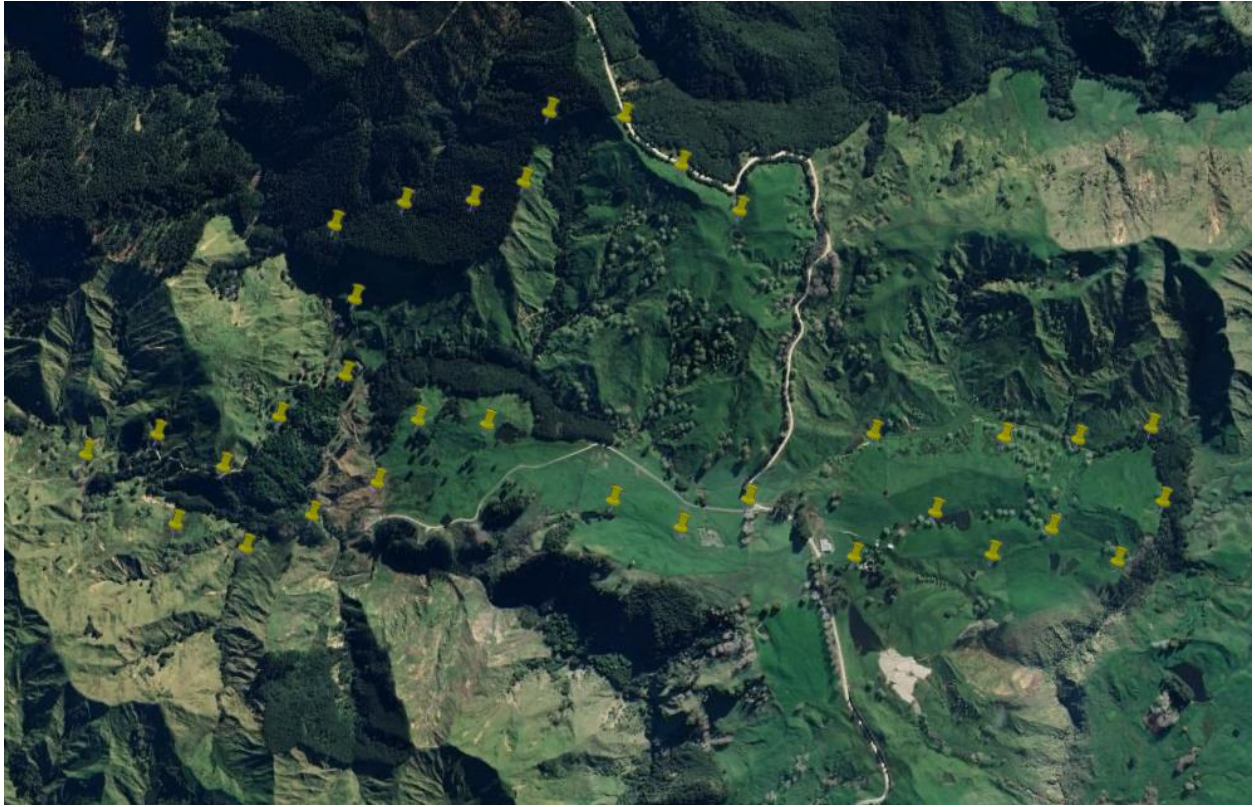
Binoculars were used to identify birds seen rather than to search for birds.



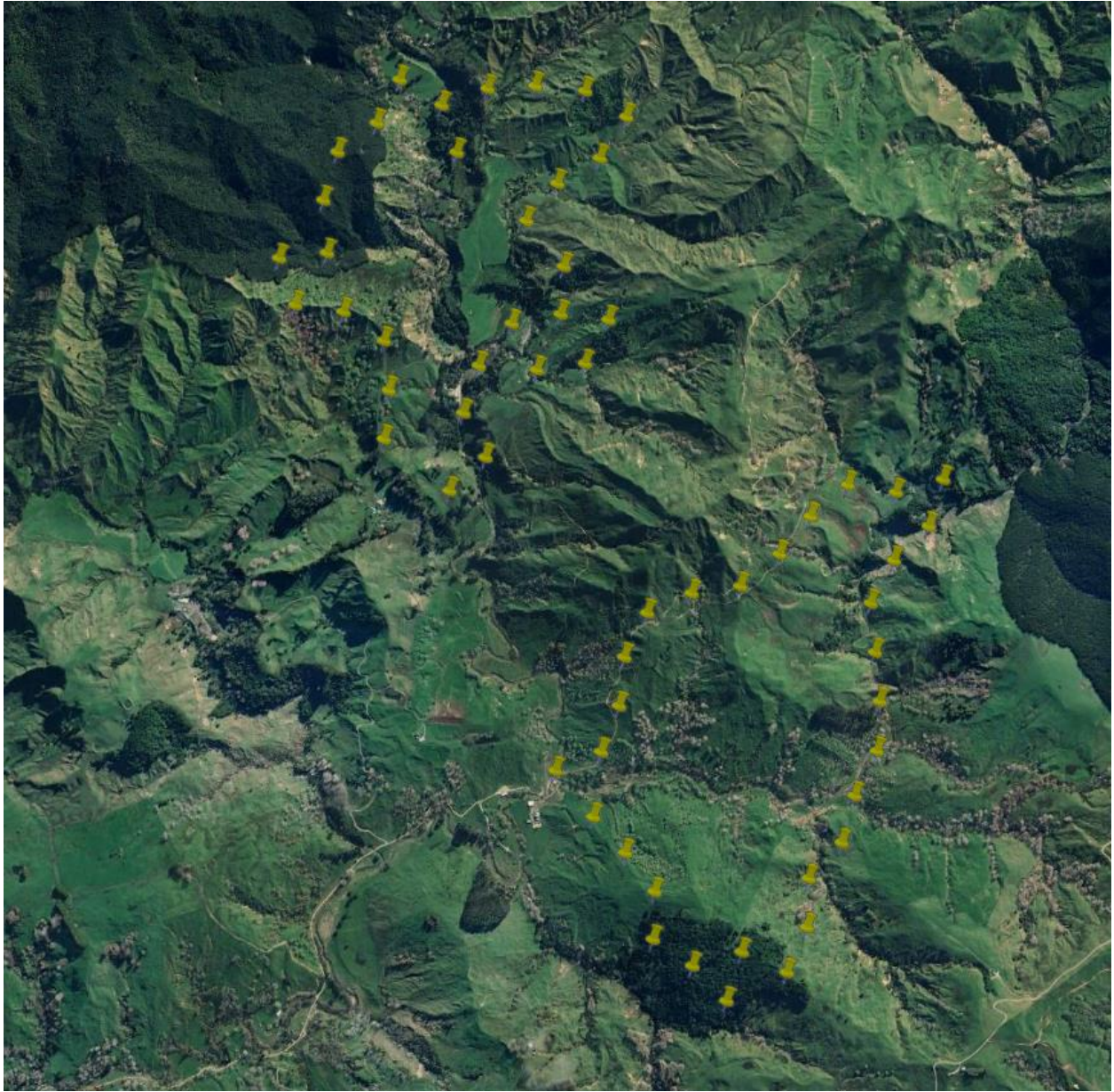
Turkeys



Survey points on Monowai Station (Watsons)



Survey Points on Kaharoa Station (Halls)



Survey Points on Kowhai Station (Uttings), and Hiwiroa (Bailies)

Results

123 listening stations were surveyed across 4 farms. A total of 1653 birds of 42 species were heard or seen (Appendix 1).

All counts were conducted on “normal” days - fine weather, without rain, extreme wind, or extreme heat or cold.

Issues effecting detection of birds included the noise of wind in trees, mooing of cattle, road noise, aircraft, and the flowing of water.

An average count was 10 individual birds of 7 species. The highest species count 17 species was at Halls pond near the house (Figures 2 &3).

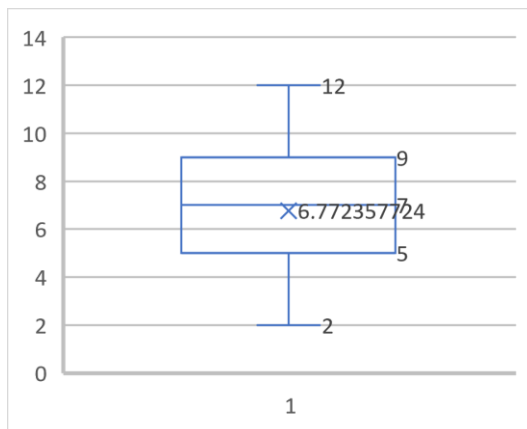


Figure 2 Species per listening station (outlier of 17 not shown on graph)

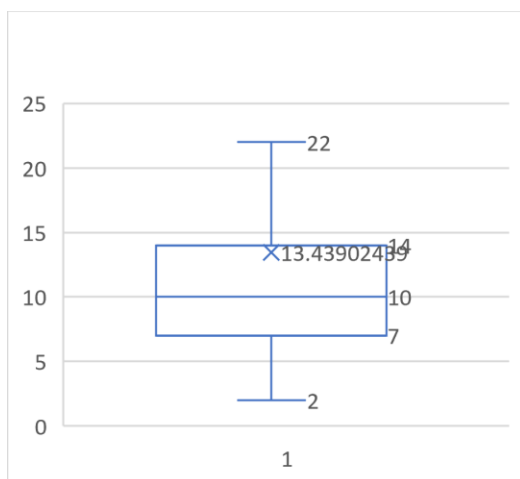


Figure 3 Individual birds seen or heard at each station. (outliers (204,83,51,38) not shown in graph)

The outliers in the individual birds heard at each station included flocks of starlings, Halls house pond, and a flock of 48 Spur Winged Plovers and 13 Whitefaced herons (among other things).

When considering passerines (perching birds), more exotic birds were seen in more modified habitats. Finches, Sparrows, Mynas etc. were seen or heard more in grasslands and willows than in native vegetation. Tomtit, Tui, Fantail were detected more in Native vegetation. (Appendix 2)

It should be noted that this survey records how often a species is detected rather than how many of any species there is. For example, a fantail would only be heard or seen from close by, but a single Peafowl calling could be heard across many stations from up to 1km away. For this reason the counts cannot be used to compare abundance between species, but rather are a tool for comparing change in abundance of a species over time.

The results do show the likelihood of seeing or hearing any given species as shown in Appendix 1.

Rare and Threatened species

The following are the description of the rare and threatened categories for birds (Robertson *et al* 2021).

Nationally Vulnerable - Facing a risk of extinction in the medium term

Nationally Increasing - Small but increasing population still facing a risk of extinction in the medium term

Declining - Population declining but still moderately common

Relict - Small population stabilised after declining

In the catchment the following were recorded

Grey Duck (Nationally Vulnerable) – Williams (2019)

Grey ducks hybridise with Mallards and can be very difficult to tell apart. Grey ducks have a strong black facial marking, a green wing coloration, and brown feet. Hybrids may have a green wing and strong facial markings but often have orange feet. Some of the grey ducks seen appeared to have very strong grey genetics, although without seeing a wing and feet an individual cannot be accurately identified.

Bush Falcon (Nationally increasing)

A falcon was heard at the back of Monowai Station. Land owners mentioned having seen them on other stations too.

New Zealand Dabchick (Nationally Increasing) –

A pair was recorded at Monowai Station.

Spotless Crake (Declining)

A call was heard during a 5 minute count. The next 30 minutes was spent playing calls intermittently, which got a strong calls in response. While it was difficult to tell it seemed there were two birds present. Crake calls were played at every wetland which was deemed to be appropriate habitat. This was done after a 5 minute survey had been concluded so as not to influence the results but no response calls were heard.

Black Shag (Relict) notes

A black Shag was seen flying up the catchment during a survey on Monowai Station.

Cirl Bunting

A recording made on Monowai Station was identified by the Merlin app as a Cirl Bunting. The Cirl Bunting alarm call is very similar to a Yellowhammer and yet lacks the small trill of the Yellowhammer alarm call. After some consultation there is agreement that this is most likely a Cirl Bunting however, the bird making this call was not seen, therefore the record is inconclusive. Pairs have been released from Gisborne (Daryl Coulter pers comm) so it is not out of the question.

This species is of little consequence other than from an interest point of view due to it being an uncommon exotic of limited range.

Whitehead

While not threatened, these are a native bird of interest – these were recorded at Halls, and Uttings and Bailies

Tomtit

While not threatened, these are a native bird of interest – these were recorded at Bailies

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Species seen while walking between survey points that were not seen during five minute counts included:

A pair of Pipit at Kowhai Station

A Kākā was heard at Kowhai Station. The kākā had been heard in the area recently (Mat Bailie pers comm).

Ruru (Morepork) was also heard making a single call during the day at Halls.

Appendix 1 Number of birds recorded and mean number per station

Species	count	# per station
Starling	204	1.66
Magpie, Australian (magpie sp.)	103	0.84
Tui	92	0.75
Chaffinch	91	0.74
Plover, Spur-winged	88	0.72
Shelduck, Paradise	87	0.71
Sparrow, House	87	0.71
Warbler, Grey	84	0.68
Pheasant	63	0.51
Goldfinch	62	0.50
Kingfisher, NZ	62	0.50
Gull, Southern Black-backed	58	0.47
Duck, (Grey or Mallard)	55	0.45
Blackbird	49	0.40
Yellowhammer	49	0.40
Turkey	45	0.37
Silvereye	42	0.34
Skylark	41	0.33
Fantail, Nth Is	40	0.33
Peafowl (peacock/peahen)	40	0.33
Teal, Grey	35	0.28
Harrier, Australasian	32	0.26
Swallow, Welcome	27	0.22
Greenfinch	17	0.14
Myna, Indian	16	0.13
Heron, White-faced	14	0.11
Thrush, Song	13	0.11
Cuckoo, Shining	12	0.10
Pigeon, NZ/Kereru/Kupapa	9	0.07
Duck, Grey	8	0.07
Whitehead	8	0.07
Duck, Mallard	4	0.03
Dabchick, NZ	3	0.02
Shag, Black	3	0.02
Pukeko	2	0.02
Tomtit, Nth Is	2	0.02
Bellbird, (mainland)	1	0.01
Bunting, Cirl	1	0.01
Crake, Marsh	1	0.01
Falcon, NZ	1	0.01
Goose, Feral/ Domestic	1	0.01
Swan, Black	1	0.01

Appendix 2 Habitat in which species were generally found

Forest/scrub	Willows/Poplars	Pasture	Ponds/wetlands	Plantation Forest
Bellbird	Blackbird	Blackbird	Chaffinch	Falcon, NZ
Blackbird	Chaffinch	Chaffinch	Falcon, NZ	Harrier, Australasian
Bunting, Cirl	Cuckoo, Shining	Falcon, NZ	Goldfinch	Kingfisher, NZ
Chaffinch	Falcon, NZ	Goldfinch	Gull, Black-backed	Magpie, Australian
Cuckoo, Shining	Fantail, Nth Is	Gull, Black-backed	Harrier, Australasian	Fantail, Nth Is
Falcon, NZ	Goldfinch	Harrier, Australasian	Kingfisher, NZ	Warbler, Grey
Fantail, Nth Is	Gull, Black-backed	Kingfisher, NZ	Magpie, Australian	Sparrow, House
Goldfinch	Harrier, Australasian	Magpie, Australian	Starling	
Gull, Black-backed	Pheasant	Myna, Indian	Goose, Feral/ Domestic	
Harrier, Australasian	Pigeon, NZ/Kereru	Starling	Heron, White-faced	
Pheasant	Silvereye	Yellowhammer	Plover, Spur-winged	
Pigeon, NZ/Kereru	Tui	Goose, Feral/ Domestic	Pukeko	
Silvereye	Warbler, Grey	Heron, White-faced	Shelduck, Paradise	
Tomtit, Nth Is	Greenfinch	Plover, Spur-winged	Fantail, Nth Is	
Tui	Kingfisher, NZ	Pukeko	Pheasant	
Warbler, Grey	Magpie, Australian	Shelduck, Paradise	Crake, Marsh	
Whitehead	Myna, Indian	Skylark	Dabchick, NZ	
	Peafowl	Turkey	Duck, Grey	
	Sparrow, House		Duck, Mallard	
	Starling		Swallow, Welcome	
	Thrush, Song		Swan, Black	
	Yellowhammer		Teal, Grey	

Further investigation

This survey should be carried out over multiple years to determine a trend in bird numbers using statistical analysis.

More investigation should be carried out regarding crane numbers and range.

During duck shooting season, hunters could photograph head, top of open wing, and feet of mallard/grey ducks shot in the catchment. This will give a better indication of the proportion of grey ducks in the catchment.



References

Robertson, H.A.; Baird, K.; Elliott, G.P.; Hitchmough, R.A.; McArthur, N.J.; Makan, T.; Miskelly, C.M.; O'Donnell, C.F.J.; Sagar, P.M.; Scofield, R.P.; Taylor, G.A.; Michel, P. 2021. *Conservation status of birds in Aotearoa New Zealand birds, 2021*. *New Zealand Threat Classification Series* 36. Wellington, Department of Conservation. 43p.

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