# **Biodiversity**

VOLUME 1 / ISSUE 1 / 2023

Published ahead of issue Received: 6 April 2023 Accepted: 4 July 2023 Published: October 2023

# Observations of avifauna on Rēkohu / Wharekauri / Chatham Island, Chatham Islands group, in February 2023

Marleen Baling, Dayna J. M. McKenzie, Rowan K. Scott, Leon H. van Vugt, Hamish Tuanui Chisholm, Peter J. de Lange

https://doi.org/10.34074/pibdiv.001102

Observations of avifauna on Rēkohu / Wharekauri / Chatham Island, Chatham Islands group, in February 2023 by Marleen Baling, Dayna J. M. McKenzie, Rowan K. Scott, Leon H. van Vugt, Hamish Tuanui Chisholm and Peter J. de Lange is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

This publication may be cited as: Baling, M., McKenzie, D., J., M., Scott, R. K., van Vugt, L. H., Chisholm, H. T. & de Lange, P. J. (2023). Observations of avifauna on Rēkohu / Wharekauri / Chatham Island, Chatham Islands group, in February 2023. *Perspectives in Biodiversity*, 1(1): 1–24.

#### Contact:

epress@unitec.ac.nz www.unitec.ac.nz/epress/ Unitec | Te Pūkenga Private Bag 92025, Victoria Street West Tāmaki Makaurau Auckland 1142 Aotearoa New Zealand





# Observations of avifauna on Rēkohu / Wharekauri / Chatham Island, Chatham Islands group, in February 2023

Marleen Baling<sup>1</sup>\* , Dayna J. M. McKenzie<sup>1</sup>, Rowan K. Scott<sup>2</sup>, Leon H. van Vugt<sup>1</sup>, Hamish Tuanui Chisholm<sup>3</sup>, Peter J. de Lange<sup>1</sup>

- 1. School of Environmental and Animal Sciences, Unitec | Te Pūkenga, Private Bag 92025, Victoria Street West, Auckland 1142, New Zealand
- 2. NorthTec | Te Pūkenga, Private Bag 9019, Whangarei 0148, New Zealand
- 3. 1007 Waitangi-Tuku Road, Chatham Islands 8016, New Zealand
- \* Corresponding author: m.baling@gmail.com

Associate Editor: Sarah Wells Article type: Annotated checklist

#### Abstract

Rēkohu / Wharekauri / Chatham Island (hereafter Rēkohu) is the largest island in the Chatham Islands group, 800 km east of Te Wai Pounamu / South Island, Aotearoa / New Zealand. This island has an avifauna of 170 taxa. Here, we present a list of bird species encountered during an eight-day undergraduate field trip in February 2023. We also provide the first attempted comprehensive listing of avifauna of the island. Based on visual encounters or via calls heard, we encountered 38 species of bird (two seabirds, eight coastal birds, six freshwater birds and 22 terrestrial birds) across 13 locations over six days. The most common species sighted were common starlings (Sturnus vulgaris vulgaris), followed by white-fronted terns (Sterna striata) and black swans (Cygnus atratus). We encountered a Chatham Island tui (Prosthemadera novaeseelandiae chathamensis) in Nikau Bush Reserve, c.35 km north of the translocated population in Awatotara Valley. We also present the first list of bird species for Motuhinahina and a nearby limestone rock stack in Te Whanga Lagoon. Birds encountered there included Chatham Island shag (Leucocarbo onslowi), Pitt Island shag (Phalacrocorax featherstoni), buff weka (Gallirallus australis hectori) and New Zealand little penguin (Eudyptula minor minor). We formally report the presence of feral emu (Dromaius novaehollandiae), including chicks, at Te Matarae, where there is self-sustaining population following their release to the wild years ago. In previous observations, feral chicken (Gallus gallus gallus) and turkey (Meleagris gallopavo) were 'semi-wild' on the basis that observations made of these species were well outside sites of human habitation. In the case of turkey, they are in the process of self-establishing. We suggest a full census is required to determine the status of these populations, particularly emu. As the emu population is self-sustaining, they should be considered as a new addition not only to the avifauna of the Chatham Islands group but to Aotearoa / New Zealand.

#### **Keywords**

Bird survey, Aotearoa / New Zealand, Rēkohu / Wharekauri / Chatham Island, emu, *Dromaius novaehollandiae*, feral chicken, *Gallus gallus gallus*, turkey, *Meleagris gallopavo*, Motuhinahina

#### Introduction

The Chatham Islands group is an archipelago c.800 km east of Te Wai Pounamu / South Island, Aotearoa / New Zealand. The group consists of c.10 islands, with Rēkohu / Wharekauri / Chatham Island (hereafter Rēkohu, Figure 1) at 920 km² (92,000 ha) the largest island (Miskelly 2008). Rēkohu is low lying, reaching a maximum elevation of 299 m a.s.l. in the south, with much of the northern two-thirds of the island <20 m a.s.l. Notably, most of the island is dominated by Te Whanga, a 186 km² (18,600 ha) lagoon, as well as myriad dune and peat lakes (Miskelly 2008).

The indigenous vegetation cover of Rēkohu has been extensively cleared, and what little remains is severely modified. With the exception of some portions of the southern tablelands, kawenata / covenants, conservation areas and a few scenic reserves, much of the island is now given over to pasture, degraded peatland, and gorse (Ulex europaeus L.) (de Lange et al. 2008). The last conspectus of the Chatham Islands flora accepted 875 taxa of vascular plants (including hybrids), of which 41 were considered endemic and 400 indigenous (de Lange et al. 2011). Subsequent taxonomic adjustments have added five endemic flowering plants, and others have yet to be described (de Lange et al. 2011). Overall, the vegetation associations reflect drainage and underlying geology; in poorly drained sites, peat bogs dominated by the restiad Sporadanthus traversii (F.Muell.) Buchanan, and Dracophyllum scoparium Hook.f. dominate. Sandy and free-draining soils once supported dense stands of hakapiri (Olearia traversiorum (F.Muell.) Hook.f.) and mixed hakapiri, mataira (Myrsine chathamica F.Muell.), hikoa karamu (Coprosma chathamica Cockayne) forest. On the more elevated southern tablelands, the forests are similar but tend to have greater dominance of tarahinau, with the occasional co-dominance of mataira karupuru (Myrsine coxii Cockayne). The only other major forest association of note is swamp forest, which once dominated the floodplains and margins of lakes. This vegetation is dominated by the swamp hakapiri (Olearia telmatica Heenan & de Lange). Along the western side of Te Whanga Lagoon the limestone outcrops and rock stacks support a low, wind-shorn shrubland in which hokopēke puapiki (Leucopogon parviflorus (Andrews) Lindl.), hokotaka (Corokia macrocarpa Kirk) and harapepe (Phormium tenax J.R.Forst. et G.Forst.) are prominent, and, in forested areas, kowhai (Sophora chathamica Cockayne). The dunes of Rēkohu were once dominated by pingao (Ficinia spiralis (A.Rich.) Muasya & de Lange) and Poa chathamica Petrie on the active margins, and, in the more stable swales and back dunes, kopakopa (Myosotidium hortensia (Decne.) Baill.) and pūhā pārākau rahi (Sonchus grandifolius Kirk).

Rēkohu has an avifauna of c.170 taxa including two monotypic endemic genera (*Cabalus* Hutton, 1874, and *Diaphorapteryx* Forbes, 1892), three endemic species and c.120 indigenous and 20 introduced species (Appendix 1) (Millner 1991; Imber 1994; Aikman & Miskelly 2004; Cooper & Tennyson 2008; Mitchell et al. 2014; Wood et al. 2014; Cole et al. 2019; Miskelly 2022; OSNZ Checklist Committee 2022; Shepherd et al. 2022). A further 21 exotic birds are accepted as naturalised (n = 19) or semi-wild to the island (n = 2) (Appendix 1) (Aikman & Miskelly 2004).

The indigenous avifauna of Rekohu has been and continues to be negatively affected by anthropogenic effects, mainly introduced predators, changes in the landscape, and wild harvests (West 1988; Aikman et al. 2001). Currently, 13 birds have been extirpated from Rēkohu (two of these, Anas chathamica (Oliver, 1955), and Mergus milleneri Williams & Tennyson, 2014, appear to have been endemic to Rēkohu) (Appendix 1). To prevent further losses there are now conservation restoration programmes and management for important endemic birds such as taiko / tchaik (Pterodroma magentae (Giglioli & Salvadori, 1869)), torea tai / Chatham Island oystercatcher (Haematopus chathamensis Hartert, 1927), Chatham Island tui (Prosthemadera novaeseelandiae chathamensis Hartert, 1928), and parea (Hemiphaga chathamensis (Rothschild, 1891)) on Rēkohu (Dilks & Kearvell 1996; Dilks et al. 1998; Urlich & Brown 2005; Moore 2008; Moore & Reid 2009; Taylor et al. 2012; Miskelly & Powesland 2013; Taylor 2013 [updated 2022]; Moore 2014).

Rēkohu has a variety of introduced species, including kiore (*Rattus exulans* (Peale, 1848)), mice (*Mus musculus* Linnaeus, 1758), brown and ship rats (*R. norvegicus* (Berkenhout, 1769), *R. rattus* (Linnaeus, 1758)), common brush-tailed possums (*Trichosurus vulpecula* (Kerr, 1792)), European hedgehog (*Erinaceus europaeus* Linnaeus, 1758), feral pigs (*Sus scrofa* Linnaeus, 1758), feral ungulates (*Bos taurus* Linnaeus, 1758, and *Ovis aries* Linnaeus, 1758), feral cats (*Felis catus* Linnaeus, 1758), and buff weka (*Gallirallus australis hectori* (Hutton, 1873)) (Miskelly et al. 2006). Weka were introduced to Rēkohu in 1905 (Aikman & Miskelly 2004) and are now commonly seen throughout the island.

Here, we present a list of the birds we encountered during an eight-day undergraduate field trip to Rēkohu in February 2023. We also discuss three new bird

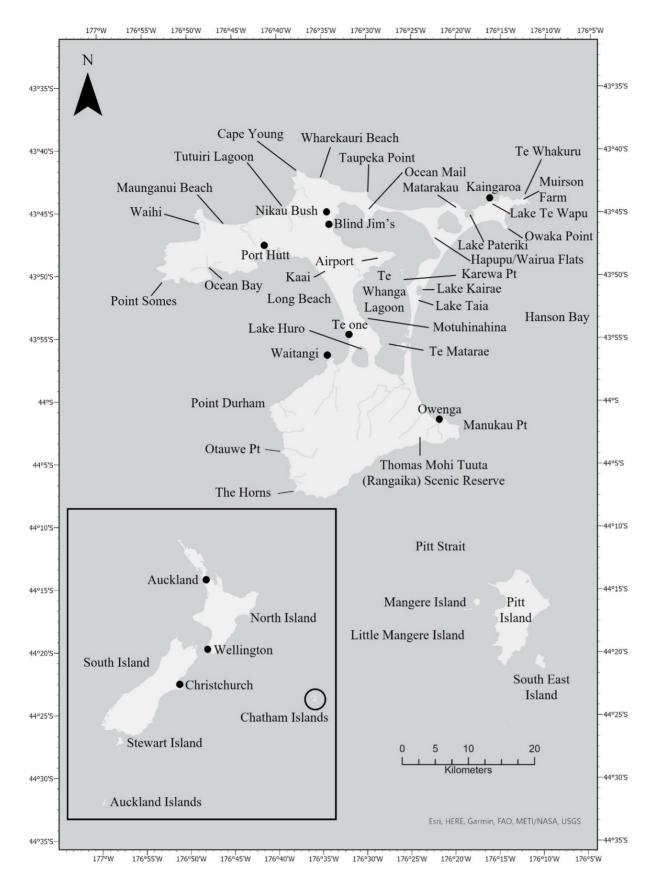


Figure 1. Map of Rēkohu / Wharekauri / Chatham Island within the Chatham Island Group.

species for Rēkohu, emu (*Dromaius novaehollandiae* (Latham, 1790), which is considered fully naturalised, feral chicken (*Gallus gallus gallus* (Linnaeus, 1758)) and turkey (*Meleagris gallopavo* Linnaeus, 1758), which are treated as 'semi-feral'.

#### **Methods**

Five persons conducted anecdotal sightings and identified bird species based on visual encounters or via calls heard while travelling to and from, and visiting 13 locations at Rēkohu (Figure 1). We also counted (where possible) individuals encountered. On 14–15 February 2023, Cyclone Gabrielle arrived at the island, so we visited only few locations during those two days.

We travelled to Motuhinahina and a limestone rock stack known locally as 'Shag Rock' in Te Whanga Lagoon on 12 February 2023, via boat from 10:00 am–1:40 pm. We spent three hours on the island. We travelled to Shag Rock via boat and circled the rock stack within 15 minutes. We did not land on Shag Rock. Six persons conducted anecdotal sightings and identified bird species on that day.

#### **Results and Discussion**

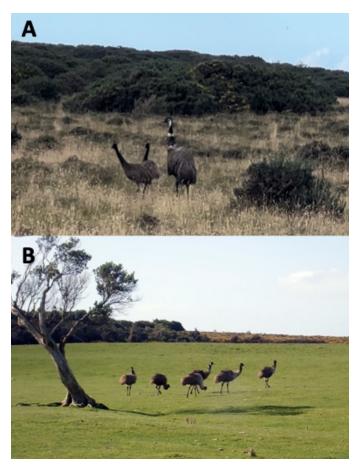
A total of 38 bird species was identified during our survey on 10-15 February 2023 (Table 1) at Rekohu. The most common species sighted were common starlings (Sturnus vulgaris vulgaris Linnaeus, 1758), followed by white-fronted terns (Sterna striata Gmelin, 1789) and black swans (Cygnus atratus (Latham, 1790)) (Table 2). Most of these birds were seen on paddocks, lakes or Te Whanga Lagoon, and along the coasts. The most commonly seen shag species was the papua / Chatham Island shag (Leucocarbo onslowi (Forbes, 1893)), where the highest number sighted in one day was on Te Whanga Lagoon at Shag Rock (n = 50) and at Manukau (n = 47). The second most frequent shag species seen was the kawau o Rangihaute / Pitt Island shag (Phalacrocorax featherstoni Buller, 1873), with the highest numbers observed at Motuhinahina and Shag Rock, Te Whanga Lagoon (n = 39) (Table 2). Locations of sightings for these two species concur with the census conducted in 1997/98 (Bell & Bell 2000).

A notable record during this trip includes a call of a Chatham Island  $t\bar{u}\bar{\iota}$  heard in Nīkau Bush Reserve. We did not expect to hear a  $t\bar{u}\bar{\iota}$  at Nīkau Bush because the majority of the island's population is on the southern

part of Rēkohu (c.35 km south of this station), where a population has been successfully translocated to the Awatotara Valley, South Chatham (Fleming 1939; Aikman & Miskelly 2004; Bell et al. 2013). However, tūī on the mainland can travel up to 30 km within a day (Bergquist 1985), therefore Nīkau Bush from Awatotara would be within the distance limit for a typical tūī. We also sighted five northern giant petrels (*Macronectes halli* Mathews, 1912) and two northern royal albatrosses (*Diomedea sanfordi* Murphy, 1917) flying just offshore of Te Wakaru Island (Table 2). Northern giant petrel and the northern royal albatross are commonly seen on most islands in the Chatham Islands group (Imber 1994; Aikman & Miskelly 2004; Miskelly et al. 2006).

We also present the first formally published listing of bird species for Motuhinahina and Shag Rock, Te Whanga Lagoon (Table 2, 12 February 2023). Previously, only shags had been recorded from these locations (Debski et al. 2012). Here we recorded the presence of buff weka with chicks, kororā / New Zealand little penguin (Eudyptula minor minor (J.R. Forster, 1781)) sheltering within limestone rubble and outcrops along the coastline of Motuhinahina, and abundant southern black-backed gull (Larus dominicanus Lichtenstein, 1823). There were both Chatham Island and Pitt Island shags present at the location. The central portion of Motuhinahina supports a wind-shorn 'forest' of 2-3 m tall taupata (Coprosma repens A.Rich.), inihina, kawakawa (Piper excelsum G.Forst. subsp. excelsum), kopi (Corynocarpus laevigatus J.R.Forst. et G.Forst.) and Muehlenbeckia aff. australis (G.Forst.) Meisn. vineland. The ground cover, understorey vegetation, lower foliage and trunks of the canopy species were spattered with faecal matter and feathers indicative of the island being used as an evening roost by common starlings. We also found feathers (including wing feathers) in deep limestone overhangs and caves on the southern side of the island, which belong to a seabird, most likely māpunga / black shag (Phalacrocorax carbo novaehollandiae Stephens, 1826) (G. Taylor, J. Galbraith & M. Galbraith, pers. comm. to M. Baling, April 2023).

One species we observed that was not on the current bird list for the Chatham Islands is emu (*Dromaius novaehollandiae* Latham, 1790) (Table 2) (Aikman et al. 2001; Aikman & Miskelly 2004; Miskelly et al. 2006). Whilst we have been unable to obtain exact dates, we are aware that six emu were imported to Rēkohu at least 30 years ago to form the basis for a tourist industry centred on selling emu eggs carved with Māori and Moriori motifs (D. Goomes, pers. comm. to P. J. de



**Figure 2**. (A) An adult and two juvenile emu (*Dromaius novaehollandiae*) at Te Matarae. Photo: D. J. M. McKenzie, February 2023. (B) Six emu, part of a larger flock of 20 seen on Rapanui Road. Photo: P. de Lange, September 2019.

Lange, August 2021; T. Gregory-Hunt to P. J. de Lange, September 2023). One bird died in an accident with a vehicle on Rapanui Road, while the other five, after some time in captivity, failed to lay eggs and so were turned loose on the farmland bordered by Rapanui and Te Matarae Roads and Lake Huro. Ironically, these birds promptly bred and there is now a feral, unmanaged, selfsustaining population located over multiple properties, within dense gorse shrubland, rough pasture and indigenous forest. Locals estimate between 60-200 birds on the island (see also observations from the Chatham Islands posted on iNaturalist NZ, https:// inaturalist.nz). Those observations reported flocks of ≥20 individuals, and on one occasion up to 50 individuals (P. J. de Lange, pers. obs., see https:// inaturalist.nz/observations/75587059), including chicks and fledglings. This species is currently not listed as a pest on the island (Chathams Islands Council & Environment Canterbury Regional Council 2011). A full census is required to determine the extent and size of this population. The observation of a self-sustaining feral population of emu on Rēkohu is not only an addition to the accepted avifauna listings for the island (Aikman et al. 2001; Aikman & Miskelly 2004; Miskelly et al. 2006) but also, it would seem, to the avifauna of the wider New Zealand Archipelago (see www.birdsnz.org.nz/society-publications/checklist/).

Two other species, feral chicken and turkey, though not seen by us on this visit, have been recorded as 'semi-wild' by P. J. de Lange during past visits to the island. Feral chickens have been observed by islanders and one of us (P. J. de Lange) across Rēkohu; notably at Te Matarae, along North Road, near Kaingaroa (J. Kamo, K. Silbery, and the late Mana Cracknell, pers. comm. to the author, 2018-2021), in shrubland bordering North Road (P. J. de Lange, pers. obs., 2020), near Pana / Jim's Blind (P. J. de Lange, pers. obs., 2021), Nīkau Bush Conservation Area (P. J. de Lange, pers. obs., 2021), and Waitangi West (P. J. de Lange, pers. obs., 2022). These birds, undoubtedly escapees from those held by landowners, are believed to be in the process of selfestablishing. In Waitangi West, adults, subadults and chicks have been observed near Point Somes (P. J. de Lange, pers. obs., December 2020).

Wild turkeys were seen once in May 2019 inhabiting rough pasture and partially drained restiad bog below Matakitaki Hill near Rototangoio, Waitangi West (P. J. de Lange, pers. obs., https://inaturalist.nz/ observations/24865397). These birds were descended from turkey that escaped from a captive free-ranging flock near the houses of Waitangi West Farm (G. Roper, pers. comm., 2019). As with feral chickens, adult turkey, subadults and chicks have been observed. Both feral chicken and turkey we still consider 'semi-wild' as their ranges are still limited (mostly within the confines of managed lands), and evidence of sustained breeding is minimal. These observations contrast with the breeding status of emu, where there is now a sizeable (at least 50 birds), self-sustaining population that has established itself within a large area of unmanaged gorse shrubland, rough pasture and indigenous forest.

## Data accessibility statement

No additional database.

#### **Author Contributions**

**Marleen Baling**: Conceptualisation (lead); data curation (lead); investigation (equal); methodology (lead); supervision (supporting); validation (equal); visualisation (lead); writing – original draft (equal); writing – review and editing (equal).

**Dayna J. D McKenzie**: Investigation (equal); validation (equal); visualisation; writing – review and editing (equal). **Rowan K. Scott**: Investigation (equal); validation (equal); writing – review and editing.

**Leon H. van Vugt**: Investigation (equal); writing – review and editing.

**Hamish Tuanui Chisholm**: Investigation (equal); resources; validation (equal); writing – review & editing. **Peter J. de Lange**: Conceptualisation (supporting); investigation (equal); project administration (lead); resources (lead); supervision (lead); data curation; validation (equal); writing – original draft preparation (equal); writing – review and editing (equal).

# **Acknowledgements**

This survey was conducted during an undergraduate course fieldtrip (NSCI7108, Bachelor of Applied Science, School of Environmental and Animal Sciences, United | Te Pūkenga). We thank the owners of Whareweka / Science House, David Johnston and Jocelyn Powell, for using their facilities at Te One. Jonathan Reriti, Tony Anderson, Jim and Sally Muirson, Vinnie Tuuta, Maui Solomon, Susan Thorpe, Levi Lanauze, Elizabeth and Bruce Tuanui, and Eileen and Gary Cameron granted access across their lands and / or permission to visit locations around Rēkohu. Peter de Lange wishes to acknowledge comments made by Debra Goomes about the attempted emu egg-farming on Rekohu, and comments and observations from Judy Kamo, Gary Roper and Kaai Silbery about feral chickens and turkeys. The authors thank Colin Miskelly, Dave Boyle and Alan Tennyson for comments on Chatham Islands birds and their review of an earlier draft of this paper, and Josie Galbraith and Mel Galbraith for offering an identification of feathers collected from Motuhinahina. We also thank the two anonymous reviewers for their feedback on the manuscript.

#### References

- Aikman, H., Davis, A., Miskelly, C., O'Connor, S., Taylor, G. (2001). *Chatham Islands threatened birds: Recovery and management plans.*Wellington: Department of Conservation. 20 pp.
- Aikman, H., Miskelly, C. (2004). Birds of the Chatham Islands. Wellington: Department of Conservation. 129 pp.
- Bell, M., Bell, D. (2000). Census of the three shag species in the Chatham Islands. Notornis, 47: 148-153.
- Bell, M., Tuanui, E. A., Tuanui, B. M. (2013). Returning Chatham Islands tui (*Prosthemadera novaeseelandiae chathamensis*) to Chatham Island. *Notornis*, 60: 49–54.
- Bergquist, C. A. L. (1985). Movements of groups of tui (*Prosthemadera novaeseelandiae*) in winter and settlement of juvenile tui in summer. *New Zealand Journal of Zoology*, 12(4): 569–571. http://www.doi.org/10.1080/03014223.1985.10428305
- Chathams Islands Council & Environment Canterbury Regional Council (2011). *Chatham Islands biosecurity: A snapshot 2011–2017.* Chatham Islands: Chathams Islands Council. 92 pp.
- Cole, T. L., Ksepka, D. T., Mitchell, K. J., Tennyson, A. J. D., Thomas, D. B., Pan, H., Zhang, G., Rawlence, N. J., Wood, J. R., Bover, P., Bouzat, J. L., Cooper, A., Fiddaman, S. R., Hart, T., Miller, G., Ryan, P. G., Shepherd, L. D., Wilmshurst, J. M., Waters, J. M. (2019). Mitogenomes uncover extinct penguin taxa and reveal island formation as a key driver of speciation. *Molecular Biology and Evolution*, 36(4): 784–797. http://www.doi.org/10.1093/molbev/msz017
- Cooper, J. H., Tennyson, A. S. J. D. (2008). Wrecks and residents: The fossil gadfly petrels (*Pterodroma* spp.) of the Chatham Islands, New Zealand. *Oryctos*, 7: 227–248.
- de Lange, P. J., Heenan, P. B., Rolfe, J. R. (2011). *Checklist of vascular plants recorded from the Chatham Islands*. Wellington: Department of Conservation. 63 pp.
- de Lange, P. J., Heenan, P. B., Sawyer, J. (2008). Flora. In: Miskelly, C. (ed), *Chatham Islands: Heritage and Conservation*. Christchurch: University Canterbury Press, pp. 97–115.
- Debski, I., Bell, M., Palmer, D. (2012). Chatham Island and Pitt Island shag census 2011: MCSPOP2010-02 Final Report. Department of Conservation. 21 pp.
- Dilks, P., Onley, D., Kemp, J. (1998). Ecology and breeding of Chatham Island tui. Wellington: Department of Conservation. 38 pp.
- Dilks, P. J., Kearvell, J. (1996). *Preliminary studies of Chatham Island tui: January 1996 population status and aspects of ecology.* Wellington: Department of Conservation. 26 pp.
- Fleming, C. A. (1939). Birds of the Chatham Islands. Emu Austral Ornithology, 38: 495–509.
- Freeman, A. N. D. (1994). Landbirds recorded at the Chatham Islands, 1940 to December 1993. Notornis, 41: 127-141.
- Greene, T. (1989). Forbes' parakeet on Chatham Island. Notornis, 36(4): 82–83.
- Imber, M. J. (1994). Seabirds recorded at the Chatham Islands, 1960 to May 1993. Notornis, 41: 97-108.
- Millner, P. R. (1991). The Quaternary avifauna of New Zealand. In: Vickers-Rich, P., Monaghan, J. M., Baird, R. F. & Rich, T. H. (eds), *Vertebrate palaeontology of Australasia*. Melbourne: Pioneer Design Studio in co-operation with the Monash University Publications Committee, pp. 1317–1344.
- Miskelly, C. (2008). Chatham Islands: Heritage and conservation. Christchurch: Canterbury University Press. 205 pp.
- Miskelly, C. M. (2022). New Zealand birds online, 2022. Available online: nzbirdsonline.org.nz [Accessed 2023].
- Miskelly, C. M., Bell, M. (2004). An unusual influx of Snares crested penguins (*Eudyptes robustus*) on the Chatham Islands, with a review of other crested penguin records from the islands. *Notornis*, 51: 235–237.
- Miskelly, C. M., Bester, A. J., Bell, M. (2006). Additions to the Chatham Islands' bird list, with further records of vagrant and colonising bird species. *Notornis*, 53(2): 215–230.

#### OBSERVATIONS OF AVIFAUNA ON REKOHU (FEBRUARY 2023)

- Miskelly, C. M., Powesland, R. G. (2013). Conservation translocations of New Zealand birds, 1863–2012. Notornis, 60: 3-28.
- Mitchell, K. J., Wood, J. R., Scofield, R. P., Llamas, B., Cooper, A. (2014). Ancient mitochondrial genome reveals unsuspected taxonomic affinity of the extinct Chatham duck (*Pachyanas chathamica*) and resolves divergence times for New Zealand and sub-Antarctic brown teals.

  Molecular Phylogenetics and Evolution, 70: 420–428. https://www.doi.org/10.1016/j.ympev.2013.08.017
- Moore, P. J. (2008). The recovering population of the Chatham Island oystercatcher. Notornis, 55: 20-31.
- Moore, P. J. (2014). Conservation assessment of the Chatham Island oystercatcher *Haematopus chathamensis*. *International Wader Studies*, 20: 23–32.
- Moore, P. J., Reid, C. (2009). Effectiveness of management on the breeding success of Chatham Island oystercatchers (*Haematopus chathamensis*). New Zealand Journal of Zoology, 36(4): 431–446. http://www.doi.org/10.1080/03014223.2009.9651476
- OSNZ Checklist Committee (2022). Checklist of the birds of New Zealand, 5th edition. Wellington: Ornithological Society of New Zealand. 336 pp.
- Powlesland, R. G., Crockett, D. (1989). A glossy ibis on the Chatham Islands. Notornis, 33(4): 232.
- Shepherd, L. D., Miskelly, C. M., Bulgarella, M., Tennyson, A. J. D. (2022). Genomic analyses of fairy and fulmar prions (Procellariidae: *Pachyptila* spp.) reveals parallel evolution of bill morphology, and multiple species. *PLoS ONE*, 17(9): e0275102. http://www.doi.org/10.1371/journal.pone.0275102
- Taylor, G., Cockburn, S., Palmer, D., Liddy, P. (2012). Breeding activity of Chatham Island taiko (*Pterodroma magentae*) monitored using PIT tag recorders. New Zealand Journal of Ecology, 36(3): 425–432.
- Taylor, G. A. (2013 [updated 2022]). Chatham Island taiko | tāiko. Available online: www.nzbirdsonline.org.nz [Accessed 2023].
- Urlich, S. C., Brown, K. P. (2005). *Monitoring the effects of animal pests on Chatham Islands vegetation: A plan for 2004–2013.* Wellington: Department of Conservation. 36 pp.
- West, J. A. (1988). Bird counts on the Chatham Islands. Notornis, 53: 159-161.
- Wood, J. R., Mitchell, K. J., Scofield, R. P., Tennyson, A. J. D., Fidler, A. E., Wilmshurst, J. M., Llamas, B., Cooper, A. (2014). An extinct nestorid parrot (Aves, Psittaciformes, Nestoridae) from the Chatham Islands, New Zealand. *Zoological Journal of the Linnean Society*, 172(1): 185–199. http://www.doi.org/10.1111/zoj.12164

# **Tables**

Table 1. List of avifauna species sighted or heard at Rēkohu / Wharekauri / Chatham Island on 10–15 February 2023.

Species name	Common name	Moriori name	Māori name
Seabirds			
Diomedea sanfordi Murphy, 1917	northern royal albatross	-	toroa
Chroicocephalus novaehollandiae scopulinus (Forster, 1843)	red-billed gull	-	tarāpunga
Macronectes halli Mathews, 1912	northern giant petrel	-	pāngurunguru
Coastal birds			
Egretta novaehollandiae novaehollandiae (Latham, 1790)	white-faced heron	-	matuku moana
Egretta sacra (Gmelin, 1789)	reef heron	-	matuku moana
Eudyptula minor minor (J.R. Forst, 1781)	New Zealand little penguin	-	kororā
Haematopus chathamensis Hartert, 1927	Chatham Island oystercatcher	tōrea tai	tōrea
Phalacrocorax featherstonii Buller, 1873	Pitt Island shag	kawau o Rangihaute	-
arus dominicanus Lichtenstein, 1823	southern black-backed gull	-	karoro
eucocarbo onslowi (Forbes, 1893)	Chatham Island shag	papua	kawau
Sterna striata Gmelin, 1789	white-fronted tern	-	tara
Freshwater birds			
Anas platyrhynchos Linnaeus, 1758	mallard	-	rakiraki
Anas superciliosa Gmelin, 1789	grey duck	-	pārera
Cygnus atratus (Latham, 1790)	black swan	-	kakīānau
Himantopus himantopus leucocephalus (Gould, 1837)	pied stilt	-	poaka
Phalacrocorax carbo (Linnaeus, 1758)	black shag	-	māpunga
Terrestrial birds			
Alauda arvensis Linnaeus, 1758	Eurasian skylark	-	kairaka
Anthus novaeseelandiae chathamensis Lorenz-Liburnau, 1902	Chatham Island pipit	-	pīhoihoi
Circus approximans Peale, 1848	swamp harrier	-	kāhu
Chrysococcyx lucidus (Gmelin, 1788)	shining cuckoo	-	pīpīwharauroa
Cyanoramphus novaezelandiae chathamensis Oliver, 1930	Chatham Island red-crowned parakeet	henga	kākāriki
Dromaius novaehollandiae (Latham, 1790)	emu	-	-
Emberiza citronella Linnaeus, 1758	yellowhammer	-	hurukōwhai
Fringilla coelebs Linnaeus, 1758	chaffinch	-	pahirini
Gallirallus australis hectori (Hutton, 1873)	buff weka	-	weka
Gerygone albofrontata G.R. Gray, 1845	Chatham Island warbler	-	-
Hemiphaga chathamensis (Rothschild, 1891)	parea	parea	-
Hirundo neoxena neoxena Gould, 1842	welcome swallow	-	warou
Passer domesticus (Linnaeus, 1758)	house sparrow		

# OBSERVATIONS OF AVIFAUNA ON RĒKOHU (FEBRUARY 2023)

Porphyrio melanotus melanotus Temminck, 1820	pūkeko	-	pūkeko
Prosthemadera novaeseelandiae chathamensis Hartert, 1928	Chatham Island tūī	-	tūī
Prunella modularis (Linnaeus, 1758)	dunnock	-	-
Rhipidura fuliginosa penita Bangs, 1911	Chatham Island fantail	tchitake	pīwakawaka
Sturnus vulgaris vulgaris Linnaeus, 1758	common starling	-	tāringi
Turdus merula Linnaeus, 1758	Eurasian blackbird	-	manu pango
Turdus philomelos clarkei Hartret, 1909	song thrush	-	manu-kai-hua-rakau
Vanellus miles novaehollandiae Stephens, 1819	spur-winged plover	-	-
Zosterops lateralis lateralis (Latham, 1802)	silvereye	-	tauhou

Table 2. The number and location of avifauna species sighted or heard at Rēkohu / Wharekauri / Chatham Island on 10–15 February 2023.

Common name	Num	nber of si	ightings i	Locations					
	10/02 11/02		12/02 13/02		14/02 15/02	15/02	2 Total	_	
Seabirds									
northern royal albatross	0	0	0	2	0	0	2	Te Wakaru Island	
northern giant petrel	0	0	0	5	0	0	5	Te Wakaru Island	
Coastal birds									
white-faced heron	1	2	0	2	0	0	5	Pana/Jim's Blind, Muirson Farm, Te Wakaru Island (+colony >100), Te Whanga Lagoon (near Nīkau Bush)	
reef heron	1	0	0	0	0	0	1	Korako, Pana/Jim's Blind.	
Chatham Island little penguin	1	0	3	0	0	0	4	Motuhinahina, Pana/Jim's Blind, Wharekauri (nests seen)	
Chatham Island oystercatcher	7	0	0	0	0	2	9	Kaingaroa, Manukau, Wharekauri	
Pitt Island shag	7	1	39	3	0	9	59	Kaingaroa, Limestone Rock Stack, Manukau, Motuhinahina, Te Whanga Lagoon, Te Wakaru Island	
southern black-backed gull	4	1	25	41	10	44	125	Cape Young, Kaai, Kaingaroa, Limestone Rock Stack, Makara River/Te Awa Inanga, Manukau, Motuhinahina, Muirson Farm, Ocean Mail, Ohuru, Owenga, Pana/Jim's Blind, Pt Durham, Taupeka, Te Matarae, Te One, Te Wakaru Island, Te Whanga Lagoon, Te Whanga Lagoon (near Nīkau Bush), Waitangi	
Chatham Island shag	0	0	50	0	0	47	97	Limestone Rock Stack, Manukau, Motuhinahina	
white-fronted tern	6	0	0	160	0	3	169	Kaingaroa, Pana/Jim's Blind, Manukau	

Freshwater birds								
mallard	0	0	0	1	0	0	1	Pana/Jim's Blind
grey duck	0	0	0	2	0	0	2	Pana/Jim's Blind
red-billed gull	5	0	2	10	15	0	32	Kaingarua, Limestone Rock Stack, Te One, Te Wakaru Island, Te Whanga Lagoon, Te Whanga Lagoon (near Nīkau Bush), Waitangi
black swan	15	20	9	40	0	50	134	Lake Huro, Lake Koomutu, Lake Te Wapu, Limestone Rock Stack, Ohuru, Pana/Jim's Blind, Te One, Te Whanga Lagoon
pied stilt	1	0	0	0	0	0	1	Ocean Mail
black shag	1	0	2	10	0	0	13	Lake Te Wapu, Limestone Rock Stack, Motuhinahina, Pana/Jim's Blind, Te Whanga Lagoon (near Nīkau Bush)
Terrestrial birds								
Eurasian skylark	4	0	0	14	2	13	33	Awatotara, Cape Young, Koromaunga, North Road, North Road (Lake Pateriki), Makara River/Te Awa Inanga, Manukau, Matarakau, Muirson Farm, Te Wakaru Island (including calls), Owenga, Waitangi
Chatham Island pipit	5	0	3	33	6	14	61	Airport, Awatotara, Kaai, Kaingaroa, close to Koromaunga, Makara River/ Te Awa Inanga, Manukau, Muirson Farm, Ocean Mail, Ohira Bay, Ohuru, Owenga, Pana/Jim's Blind, Pt Durham, Taupeka, Te One, Te Wakaru Island, Waitangi, Wharekauri
swamp harrier	5	4	0	17	2	4	32	Awatotara (including calls), Kaai, Lake Pateriki, Muirson Farm, North Road (Lake Pateriki), Owenga, Pana/Jim's Blind, Te One, Waitangi
shining cuckoo	0	1	0	0	0	0	1	Nīkau Bush
Chatham Island red- crowned parakeet	0	0	0	0	1	0	1	Awatotara
emu	0	4	0	0	0	0	4	Te Matarae
yellowhammer	0	1	0	0	0	0	1	Nīkau Bush
chaffinch	0	1	0	0	15	1	17	Awatotara (including calls), Nīkau Bush, Owenga
buff weka	3	9	8	21	1	1	43	Awatotara, Matarakau, Motuhinahina (+egg), Muirson Farm, Nīkau Bush, Ohuru, Owenga, Pana/Jim's Blind, Port Hut, Te One, Te Wakaru Island
Chatham Island warbler	0	0	0	0	3	0	3	Awatotara (including calls)
parea	0	0	0	0	4	0	4	Awatotara (including calls)
welcome swallow	1	0	5	4	0	1	11	Limestone Rock Stack, Manukau, Motuhinahina, Muirson Farm, Ohuru, Pana/Jim's Blind, Taupeka

# OBSERVATIONS OF AVIFAUNA ON RĒKOHU (FEBRUARY 2023)

Total	85	66	157	483	186	299	1,276	
silvereye	0	14	3	0	19	3	39	Awatotara (including calls), Manukau, Nīkau, Ohuru.
spur-winged plover	8	4	6	6	4	3	31	Ohuru, Te One, Te Whanga Lagoon (near Nīkau Bush), Waitangi, Wharekauri
song thrush	1	0	0	0	0	0	1	Te One
Eurasian blackbird	0	1	1	0	0	0	2	Nīkau Bush, Ohuru
common starling	0	0	0	106	89	95	290	Awatotara, Kaai, Kaire, Makara River/ Te Awa Inanga, Manukau, Muirson Farm (including calls), Ocean Mail, Owenga, Pt Durham, Taupeka, Te One, Te Whanga Lagoon (near Nīkau Bush), Waitangi
Chatham Island fantail	5	2	0	0	11	0	18	Awatotara (including calls), Manukau (old nest), Nīkau, Pana/Jim's Blind
dunnock	0	0	1	4	0	0	5	Motuhinahina, Muirson Farm, Taupeka
Chatham Island tūī	0	1	0	0	4	0	5	Awatotara (including calls), Nīkau Bush
pūkeko	4	0	0	2	0	0	6	Korako, Pana/Jim's Blind, Taupeka, Wharekauri
house sparrow	0	0	0	0	0	9	9	Owenga

# Appendix 1. Avifauna of Rēkohu / Wharekauri / Chatham Island

List of avifauna recorded on Rēkohu / Wharekauri / Chatham Island, complied from the literature (Greene 1989; Powlesland & Crockett 1989; Millner 1991; Freeman 1994; Imber 1994; Aikman & Miskelly 2004; Miskelly & Bell 2004; Miskelly et al. 2006; Miskelly 2022; OSNZ Checklist Committee 2022) and new additions from our survey. Names and nomenclature are based on the OSNZ checklist Committee 2022.

#### **Abbreviations**

- $\lambda$  Endemic to the Chatham Islands (34 taxa)
- § Endemic to Rēkohu (4 taxa)
- \* Vagrant (71 taxa)
- γ Migrant (2 taxa)
- Naturalised (19 taxa)
- ‡ Semi-wild breeding out of sites of captivity and starting to naturalise (2 taxa)
- † Extinct (19 taxa)
- ξ Extirpated from the Chatham Islands but still extant on Aotearoa / New Zealand (20 taxa)
- ψ Extirpated from Rēkohu but still extant on the other Chatham Islands (13 taxa)

•	Class Aves	
S	Subclass: Palaeognathae	
P	Parvclass: Ratitae	
(	Order: Casuariiformes	
F	amily: Casuariidae	
E	Oromaius novaehollandiae (Latham, 1790)	emu
S	subclass: Neognathae	
(	Order: Galliformes	
F	amily: Phasianidae	
S	Subfamily: Odontophorinae	
(	Callipepla californica brunnescens (Ridgeway, 1884)	California quail / tikaokao
S	Subfamily: Phasianinae	
(	Gallus gallus gallus (Linnaeus, 1758)	feral chicken
s	Subfamily: Meleagridinae	
٨	Meleagris gallopavo Linnaeus, 1758	wild turkey
	Order: Anseriformes	

**Suborder: Anseres** 

Family: Anatidae

**Subfamily: Anatinae** 

Tribe: Anatini

†λ§ Anas chathamica (Oliver, 1955) Chatham Island duck

ξ Anas chlorotis G.R. Gray, 1845 brown teal / pāteke

\* Anas gracilis Buller, 1869 grey teal / tētē-moroiti

Anas platyrhynchos Linnaeus, 1758 mallard/ rakiraki

Anas superciliosa superciliosa Gmelin, 1789 grey duck / pārera

ξ Aythya novaeseelandiae (Gmelin, 1789) New Zealand scaup / pāpango

Spatula rhynchotis (Latham, 1802) Australasian shoveler / kuruwhengi

#### **Subfamily: Anserinae**

#### Tribe: Anserini

\* Anser anser (Linnaeus, 1758) greylag goose / kuihi

\* Branta canadensis (Linnaeus, 1758) Canada goose / kuihi

#### Tribe: Cygnini

\* Cygnus atratus (Latham, 1790) black swan / kakīānau

†λ Cygnus sumnerensis chathamicus Oliver, 1955 Chatham Island swan / poūwa

#### **Subfamily: Dendrocygninae**

Dendrocygna eytoni (Eyton, 1838)
plumed whistling-duck

#### **Subfamily: Merginae**

†\\$ Mergus milleneri Williams & Tennyson, 2014 Chatham Island merganser

#### **Subfamily: Oxyurinae**

Tribe: Oxyurini

† Malacorhynchus scarletti Olson, 1977 Scarlett's duck

#### **Subfamily: Tadorninae**

#### Tribe: Tadornini

\* Tadorna variegata (Gmelin, 1789) paradise shelduck / pūtangitangi

†λ Tadorna sp. (Tennyson & Millener, 1994) Chatham Islands shelduck

#### **Order: Spenisciformes**

#### Family: Spheniscidae

Aptenodytes patagonicus J.F. Miller, 1778 king penguin / tokoraki

Eudyptes chrysolophus schlegeli Finsch, 1876 royal penguin

\* Eudyptes robustus Oliver, 1953 Snares crested penguin / pokotiwha

Eudyptes sclateri Buller, 1888 erect-crested penguin / tawaki nana hi

†λ *Eudyptes warhami* Cole, Tennyson, Ksepka & Thomas, 2019 Chatham Island crested penguin

Eudyptula minor minor (J.R. Forster, 1781)

New Zealand little penguin / kororā

Kupoupou stilwelli Blokland, Reid, T. Worthy, Tennyson, Clarke & Scofield, Stilwell's penguin

2019

†λ Megadyptes antipodes richdalei Tennyson & Cole, 2019 Chatham Island yellow-eyed penguin

#### **Order: Procellariiformes**

#### Family: Diomedeidae

ψ\* Diomedea antipodensis antipodensis Robertson & Warham, 1992 Antipodean albatross / toroa

Diomedea epomophora Lesson, 1825 southern royal albatross / toroa

γ Diomedea exulans Linnaeus, 1758 wandering (snowy) albatross / toroa

Diomedea sanfordi Murphy, 1917 northern royal albatross / toroa

Phoebetria palpebrata (J.R. Forster, 1785) light-mantled sooty albatross<sup>1</sup> / toroa pango

Thalassarche bulleri platei (Reichenow, 1898) northern Buller's albatross / toroa

Thalassarche cauta steadi Falla, 1933 New Zealand white-capped albatross / toroa

Thalassarche chrysostoma (J.R. Forster, 1785) grey-headed albatross / toroa

#### Family: Procellariidae

‡ψ Ardenna bulleri (Salvin, 1888) Buller's shearwater / rako

‡ψ Ardenna carneipes (Gould, 1844) flesh-footed shearwater / toanui

Ardenna grisea (Gmelin, 1789) sooty shearwater / tītī

Daption capense australe Mathews, 1913 Snares cape petrel / karetai hurukoko

ξ Fregetta tropica (Gould, 1844) black-bellied storm petrel / takahikare-rangi

Fulmarus glacialoides (A. Smith, 1840)
Antarctic fulmar

ψ Garrodia nereis (Gould, 1841) grey-backed storm petrel / reoreo

Lugensa brevirostris (Lesson, 1833) Kerguelen petrel

Macronectes giganteus (Gmelin, 1789) southern giant petrel / pangurunguru

Macronectes halli Mathews, 1912 northern giant petrel / pāngurunguru

blue petrel

Chatham fulmar prion

Pachyptila desolata (Gmelin, 1789)

Antarctic prion / totorore

Pachyptila crassirostris pyramidalis C. A. Flaming, 1939

Halobaena caerulea (Gmelin, 1789)

\*

λ

\*

## OBSERVATIONS OF AVIFAUNA ON REKOHU (FEBRUARY 2023)

	Dead and the control of the state of the sta	Calain's arian
*	Pachyptila salvini (Mathews, 1912)	Salvin's prion
*ξ	Pachyptila turtur (Kuhl, 1820)	fairy prion / tītī wainui
	Pachyptila vittata (G. Forster, 1777)	broad-billed prion / pararā
ψ	Pelagodroma marina maoriana Mathews, 1912	New Zealand white-faced storm petrel / takahikare
*ψ	Pelecanoides urinatrix chathamensis Murphy & Harper, 1916	southern diving petrel / kuaka
*ξ	Pelecanoides urinatrix urinatrix (Gmelin, 1789)	northern diving petrel / kuaka
ξ	Pelecanoides georgicus whenuahouensis Fischer, Debski, Miskelly, Bost, Fromant, Tennyson, Tessler, Cole, Hiscock, Taylor & Wittmer, 2018	South Georgian diving petrel
<b>*</b> ξ	Procellaria aequinoctialis Linnaeus, 1758	white-chinned petrel / karetai kauae mā
*ξ	Procellaria cinerea Gmelin, 1789	grey petrel / kuia
*ξ	Procellaria parkinsoni G.R. Gray, 1862	black petrel / tāiko
*ξ	Procellaria westlandica Falla, 1946	Westland petrel / tāiko
λ	Pterodroma axillaris (Salvin, 1893)	Chatham petrel / ranguru
	Pterodroma externa (Salvin, 1875)	Juan-Fernandez petrel
<b>*</b> ξ	Pterodroma inexpectata (J.R. Forster, 1844)	mottled petrel¹ / kōrure
†λ	Pterodroma imberi Tennyson, Cooper & Shepherd, 2015	Imber's petrel
*ξ	Pterodroma gouldi (Hutton, 1869)	grey-faced petrel / ōi¹
*	Pterodroma lessoni (Garnot, 1826)	white-headed petrel
λ§	Pterodroma magentae (Giglioli & Salvadori, 1869)	Chatham Island taiko / tāiko / tchaik
	Pterodroma mollis Gould, 1844	soft-plumaged petrel
Ξ	Pterodroma neglecta neglecta (Schegel, 1863)	Kermedec petrel / pia koia
*ψ	Pterodroma nigripennis (Rothschild, 1893)	black-winged petrel¹ / karetai kapa mangu
<b>*</b> ξ	Puffinus elegans Giglioli & Salvadori, 1869	Subantarctic little shearwater
*	Thalassoica antarctica (Gmelin, 1789)	Antarctic petrel

#### Order: Pelecaniformes

#### Family: Fregatidae

\* Fregata ariel ariel G.R. Gray, 1845

### Family: Phalacrocoracidae

λ Leucocarbo onslowi (Forbes, 1893) Chatham Island shag / papua

Microcarbo melanoleucos brevirostris (Gould, 1837) little shag / kawaupaka

Phalacrocorax carbo novaehollandiae Stephens, 1826 black shag / māpunga

λ Phalacrocorax featherstoni Buller, 1873 Pitt Island shag / kawau o Rangihaute

lesser frigatebird

#### Family: Sulidae

Morus serrator (G.R. Gray, 1843)

Australasian gannet / tākapu

	Order: Ciconiiformes	
	Suborder: Ardeae	
	Family: Ardeidae	
	Subfamily: Ardeinae	
*	Ardea alba modesta (J.E. Gray, 1831)	white heron / kōtuku
*ξ	Botaurus poiciloptilus (Wagler, 1827)	Australasian bittern / matuku-hūrepo
*	Bubulcus ibis coromandus (Linnaeus, 1758)	eastern cattle egret
	Egretta novaehollandiae novaehollandiae (Latham, 1790)	white-faced heron / matuku moana
	Egretta sacra sacra (Gmelin, 1789)	reef heron / matuku moana
†	lxobrychus novaezelandiae (Purdie, 1871)	New Zealand little bittern / kaoriki
	Suborder: Threskiornithes	
	Family: Threskiornithidae	
	Subfamily: Threskiornithinae	
*	Platalea regia Gould, 1838	royal spoonbill / kōtuku ngutupapa
*	Plegadis falcinellus (Linnaeus, 1766)	glossy ibis
	Order: Accipitriformes	
	Subfamily: Accipitrinae	
	Circus approximans Peale, 1848	Swamp harrier / kāhu
	Order: Falconiformes	
	Family: Falconidae	
ξ	Falco novaeseelandiae Gmelin, 1788	falcon / kārearea
	Order: Gruiformes	
	Family: Rallidae	
	Subfamily: Rallinae	
†λ	Cabalus modestus (Hutton, 1872)	Chatham Island rail / mātirakahu
†λ	Diaphorapteryx hawkinsi (Forbes, 1892)	Hawkins' rail / mehonui
†λ	Fulica chathamensis Forbes, 1892	Chatham Island coot
*	Gallirallus australis hectori (Hutton, 1873)	buff weka
†λ	Gallirallus dieffenbachii (G.R. Gray, 1843)	Dieffenbach's rail / moeriki / mehoriki
	Porphyrio melanotus melanotus (Temminck, 1820)	pūkeko
	Zapornia pusilla affinis (G.R. Gray, 1845)	marsh crake / kotoreke

ξ Zapornia tabuensis tabuensis (Gmelin, 1789)

spotless crake / puweto

#### **Order: Charadriiformes**

#### Family: Charadriidae

#### **Subfamily Charadriinae**

\* Anarhynchus frontalis Quoy & Gaimard, 1830 wrybill / ngutu pare

Charadrius bicinctus bicinctus Jardine & Selby, 1827 banded dotterel / pohowera

\* Charadrius mongolus Pallas, 1776 lesser sand plover

\* Charadrius veredus Gould, 1848 oriental dotterel

\* Pluvialis fulva (Gmelin, 1789) Pacific golden plover / kuriri

Pluvialis squatarola (Linnaeus, 1758) grey plover

ψ Thinornis novaeseelandiae (Gmelin, 1789) shore plover / tuturuatu / tchūriwat'

Vanellus miles novaehollandiae Stephens, 1819 spur-winged plover

#### Family: Haematopodidae

λ Haematopus chathamensis Hartert, 1927 Chatham Island oystercatcher / tōrea tai

\* Haematopus finschi Martens, 1897 South Island pied oystercatcher / tōrea

#### Family: Recurviroastridae

#### **Subfamily: Recurvirostrinae**

Himantopus himantopus leucocephalus Gould, 1837 pied stilt / poaka

#### Family: Scolopacidae

#### **Subfamily: Arenariinae**

Arenaria interpres interpres (Linnaeus, 1758) ruddy turnstone

#### **Subfamily: Calidrinae**

\* Calidris acuminata (Horsfield, 1821) sharp-tailed sandpiper / kohutapu

Calidris alba (Pallas, 1764) sanderling

Calidris canutus (Linnaeus, 1758) red knot / huahou

\* Calidris ferruginea (Pontoppidan, 1763) curlew sandpiper

\* Calidris ruficollis (Pallas, 1776) red-necked stint

\* Calidris melanotos (Vieillot, 1819) pectoral sandpiper

#### **Subfamily: Gallinaginnae**

†λ Coenocorypha chathamica (Forbes, 1893) Forbes's snipe

‡ψλ Coenocorypha pusilla (Buller, 1869) Chatham Island snipe

#### **Subfamily: Tringinae**

Limosa haemastica (Linnaeus, 1758) Hudsonian godwit

y Limosa lapponica baueri Naumann, 1836 eastern bar-tailed godwit / kuaka

Limosa limosa melanuroides Gould, 1846 Asiatic black-tailed godwit

Numenius hudsonicus Latham, 1790 American whimbrel

Numenius madagascariensis (Linnaeus, 1766) eastern curlew

Numenius phaeopus variegatus (Scopoli, 1786)

Asiatic whimbrel

Tringa brevipes (Vielliot, 1816) grey-tailed tattler

\* Tringa flavipes (Gmelin, 1789) lesser yellowlegs

\* Tringa incana (Gmelin, 1789) wandering tattler

\* Tringa nebularia (Gunnerus, 1767) common greenshank

#### Suborder: Lari

#### Family: Laridae

Chroicocephalus novaehollandiae scopulinus (J.R. Forster, 1843) red-billed gull / tarāpunga

Larus dominicanus dominicanus Lichtenstein, 1823 southern black-backed gull / karoro

#### Family: Stercoraridae

Stercorarius antarcticus Ionnbergi (Mathews, 1912) Subantarctica skua / hākoakoa

Stercorarius longicaudus Vieillot, 1819 Long-tailed skua

Stercorarius parasiticus (Linnaeus, 1758) Arctic skua

#### Family: Sternidae

ξ Chlidonias albostriatus (G.R. Gray, 1845) black-fronted tern / tarapirohe

\* Hydroprogne caspia (Pallas, 1770) Caspian tern / taranui

\* Sternula albifrons sinensis (Gmelin, 1789) eastern little tern / tara teo

\* Sterna paradisaea Pontoppidan, 1763 Arctic tern

Sterna striata Gmelin, 1789 white-fronted tern / tara

‡§ Sterna vittata bethunei Travers, 1896 New Zealand Antarctic tern

#### **Order: Columbiformes**

# Suborder: Columbae

# Family: Columbidae

\* Columba livia Gmelin, 1789 rock pigeon/ kererū aropari

λ Hemiphaga chathamensis (Rothschild, 1891) Chatham Island pigeon / parea

	Order: Psittaciformes	
	Family: Psittacidae	
	Subfamily: Platycercinae	
ψλ	Cyanoramphus forbesi Rothschild, 1893	Forbes' parakeet
λ	Cyanoramphus novaezelandiae chathamensis Oliver, 1930	Chatham Island red-crowned parakeet / kākāriki
	Family: Strigopidae	
	Subfamily: Nestorinae	
†λ	Nestor chathamensis Wood, Mitchell, Scofield & Tennyson, 2014	Chatham Island kaka
	Order: Cuculiformes	
	Suborder: Cuculi	
	Family: Cuculidae	
	Subfamily: Cuculinae	
*	Chrysococcyx lucidus lucidus (Gmelin, 1788)	shining cuckoo / pīpīwharauroa
*	Eudynamys taitensis (Sparrman, 1787)	long-tailed cuckoo / koekoeā
	Order: Apodiformes	
	Suborder: Apodi	
	Family: Apodidae	
	Subfamily: Apodinae	
	Tribe: Chaeturini	
*	Hirundapus caudacutus caudactus (Latham, 1801)	white-throated needletail
	Order: Coraciiformes	
	Suborder: Alcedines	
	Family: Halctonidae	
*	Todiramphus sanctus vagans (Lesson, 1828)	New Zealand kingfisher / kōtare
	Order: Passeriformes	
	Suborder: Passeres	
	Family: Acanthizidae	
λ	Gerygone albofrontata G.R. Gray, 1845	Chatham Island warbler
	Family: Alaudidae	

#### **Subfamily: Carduelinae**

\* Acanthis flammea (Linnaeus, 1758) common redpoll

\* Carduelis carduelis britannica (Hartert, 1903) European goldfinch/ kōurarini

\* Chloris chloris (Linnaeus, 1758) European greenfinch

#### Family: Corvidae

\*\* Corvus frugilegus Linnaeus, 1758 roo

†λ Corvus moriorum moriorum Forbes 1892 Chatham Island raven

#### Family: Fringillidae

#### Subfamily: Fringillidae

\* Fringilla coelebs Linnaeus, 1758 chaffinch / pahirini

#### Family: Hirundinidae

Hirundo neoxena neoxena Gould, 1842 welcome swallow / warou

\* Petrochelidon nigricans nigricans (Vieillot, 1817) tree martin

#### Family: Locustellidae

†λ Poodytes rufescens (Buller, 1869) Chatham Island fernbird

#### Family: Meliphagidae

†λ Anthornis melanocephala G.R. Gray, 1843 Chatham Island bellbird

Prosthemadera novaeseelandiae chathamensis Hartert, 1928 Chatham Island tūī / kōkō

#### Family: Motacillidae

λ

λ Anthus novaeseelandiae chathamensis Lorenz-Liburnau, 1902 Chatham Island pipit

#### Family: Passeridae

\* Passer domesticus domesticus Linnaeus, 1758 house sparrow / tiu

#### Family: Petroicidae

λψ Petroica macrocephala chathamensis C.A. Fleming, 1950 Chatham Island tomtit / miromiro

λψ Petroica traversi (Buller, 1872) black robin / kakaruia / karure

#### Family: Prunellidae

\* Prunella modularis (Linnaeus, 1758) dunnock

#### Family: Rhipiduridae

# OBSERVATIONS OF AVIFAUNA ON RĒKOHU (FEBRUARY 2023)

λ	Rhipidura fuliginosa penita Bangs, 1911	Chatham island fantail / pīwakawaka / tchitake
	Family: Sturnidae	
*	Sturnus vulgaris vulgaris Linnaeus, 1758	common starling / tāringi
	Family: Turdidae	
*	Turdus merula merula Linnaeus, 1758	Eurasian blackbird / manu pango
*	Turdus philomelos clarkei Hartert, 1909	song thrush / manu-kai-hua-rakau
	Family: Zosteropidae	
	Zosterops lateralis lateralis (Latham, 1801)	silvereye / tauhou

<sup>1</sup> Reported from the island from middens and sub fossils (Cooper & Tennyson 2008) and also recorded as beach-cast specimens or as stragglers (Millner 1991; Imber 1994; Miskelly 2022).

# **Authors**

Marleen Baling is a senior lecturer at the School of Environmental Sciences, Unitec | Te Pūkenga. Marleen is a wildlife ecologist who publishes articles and books mainly on reptile and bird ecology. She co-authored the book Reptiles and Amphibians of New Zealand: A Field Guide published by Auckland University Press, Bloomsbury Press and Princeton University Press. She is a member of the IUCN Reintroduction Specialist Group, IUCN Skink Specialist Group and a Fellow of the Linnean Society. m.baling@gmail.com

Dayna J. M. McKenzie is a third-year student currently completing the Bachelor of Applied Science, majoring in Biodiversity Management, at the School of Environmental Sciences, Unitec | Te Pūkenga. She currently works in the native nursery of BirdCare Aotearoa, Green Bay, Auckland, a bird rehabilitation centre caring for both sick and injured native and non-native species. Dayna has interests in botany and conservation. mckend23@myunitec.ac.nz

Rowan K. Scott is a current undergraduate student in the Bachelor of Applied Science at the School of Applied and Environmental Sciences, Northtec | Te Pūkenga. She is a graduate of the University of Auckland with a Bachelor of Science (BSc) majoring in Psychology with a focus on learning and behaviour. She currently works at Northland Regional Council as a land management advisor. Her role focuses on working with the community around stabilising erosion-prone soils, reducing sediment entering waterways, and riparian restoration. Rowan is interested in behavioural ecology, conservation and natural resource management. rowanqu@gmail.com

Leon H. van Vugt is a third-year student in the Bachelor of Applied Science at Unitec | Te Pūkenga, majoring in Biodiversity Management. Leon's main interests include conservation, restoration, and New Zealand plants, lichen and fungi. Leon\_NZ@hotmail. co.nz

Hamish Tuanui Chisholm has completed a Bachelor of Arts and Bachelor of Law at the University of Canterbury. He has worked in the ecology field for over ten years, both nationally and internationally. Hamish is a sixth-generation Chatham Islander and moved home to accept the role of Project Co-ordinator for Predator Free Chathams two years ago. Passionate about all things Chatham Islands, Hamish is also an elected trustee on the Chatham Island Enterprise Trust and wants to ensure their unique wildlife and way of life are preserved for generations to come. h.t.chisholm@gmail.com

Peter J. de Lange is a professor teaching at the School of Environmental and Animal Sciences, Unitec | Te Pūkenga. A biosystematist, Peter publishes on plant taxonomy, conservation, threat listing, and the flora of South Pacific and outlying Aotearoa / New Zealand islands. A recipient of the New Zealand Botanical Society Allan Mere Award (2006) and Loder Cup (2017), Peter is a Fellow of the Linnean Society and a lifetime member of the New Zealand Plant Conservation Network. pdelange@unitec.ac.nz

