BIRDS NEW ZEALAND
Te Kāhui Mātai Manu o Aotearoa

Birds NZ Conference & AGM Auckland

2025 AUCKLAND
Tāmaki Makaurau

85th

Novotel & ibis Ellerslie Hotel
31 May - 2 June 2025

2025
AUCKLAND
Tāmaki Makaurau

Welcome!

Kia ora and welcome to the New Zealand Bird Conference 2025 here in Tāmaki Makaurau /Auckland at the Novotel & Ibis Auckland Ellerslie Hotel. During this conference we are celebrating a significant milestone, with it coinciding with the 85th anniversary of the Ornithological Society of New Zealand.

We are very excited to bring you a wonderful programme of oral and poster presentations, workshops and field trips. Many months of planning and organizing by our committee members have culminated in this conference and I appreciate their efforts and valuable contributions.

Our thanks go to all those who are presenting and sharing their research that greatly enhances our birding knowledge.

We very much hope that you enjoy your visit to Tāmaki Makaurau /Auckland and take the opportunity to explore the fabulous birding destinations within our region. Enjoy the conference and the chance to network and socialize with your fellow birders.

Ian McLean
Auckland Regional Representative

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Committee Olga Brochner, Tony Crocker, Gary Heaven, Barbara Hughes-Cleland, Kathryn LeGrove, Ian McLean, Trina Smith, Chris Thompson, Shelley Trotter, Matt Rayner
Special thanks to Shaun Lee, Brian Gill and all the volunteers.
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The Black Petrel

The black petrel/tākoketai is nationally vulnerable and is now a breeding endemic to the Auckland region. The smallest of the Procellaria petrels, the black petrel/tākoketai formerly bred throughout the North Island and northwest Nelson, but due to habitat loss and the introduction of feral cats, feral pigs, mustelids and rats it was extirpated from mainland Aotearoa/New Zealand. The species is now restricted to breeding colonies on Aotea/Great Barrier Island and Te Hauturu-o-Toi/Little Barrier Island, making it an Auckland region breeding endemic.

With an estimated population of 5000 breeding pairs, the population is declining due to both continued predation on Aotea/Great Barrier Island, fisheries bycatch, pollution and climate change. Black petrel/tākoketai have been caught by both commercial and recreational fishers both in Aotearoa/New Zealand and overseas, with the species recognized as one of the most at-risk seabirds in Aotearoa/New Zealand from commercial fishing.

With dedicated research, predator control by locals on Aotea/Great Barrier Island and greater understanding, care and mitigation by the fishing industry, our hope is that this seabird can recover. Being a breeding Auckland endemic, the fabulous black petrel/tākoketai has been chosen as the bird on our Auckland Conference logo. Please help spread awareness of this magnificent seabird, please share your knowledge, enthusiasm and our hope for its recovery and continued survival.

Notices

Travel: Note buses will replace trains in Auckland at King's Birthday weekend. The AT Journey Planner is available on line at https://at.govt.nz/bus-train-ferry/journey-planner or may be downloaded as an app onto your phone.

Disclaimer: In the event of unforeseen circumstances (industrial or otherwise) that disrupt the conference, the organisers accept no responsibility. The information on the conference website and in the printed material is correct at the time of publication. However, the conference organisers reserve the right to change information if required and to adjust the conference programme accordingly.

Field Trips: a full refund will be made in the event that a field trip is cancelled due to unforseen circumstances.

Health & Safety: The Society is committed to hosting a safe conference where all attendees can enjoy each other's company and actively support the Health and Safety Policy and health regulations in force at the time of the conference.

Contact us: conference@birdsnz.org.nz or call 021 896 698

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PHOTOGEAR

CONFERENCE OUTLINE *		
SATURDAY 31 May		**DAY 1**
07:30	REGISTRATION OPENS	Tea/coffee available
08:30-09:00	**Welcome**	
		Session 1 chair Matt Rayner
09:00-09:30	Dianne Brunton	**PLENARY** Highlights from 35 years of researching birdsong, behaviour, and conservation in New Zealand: building synergies and capability
09:30-09:45	Ilse Corkery	Conservation of the critically endangered tara iti/New Zealand fairy tern: achievements and future challenges
09:45-10:00	Etienne Ossona de Mendez	Addressing the conservation conundrum of the sooty shearwater on Kāpiti Island
10:00-10:15	Erin Patterson	The conservation status of the hihi: past, present and future
10:15-10:30	Chris Bycroft	Rotoehu Ecological Trust: a North Island kōkako success story, Bay of Plenty, Aotearoa New Zealand
10:30-11:00	**Morning tea**	
		Session 2 chair Adrian Riegen
11:00-11:15	James Russell	Birds of Aitutaki and Manuae, Cook Islands
11:15-11:30	Surenya Hilton	Movement and habitat use of fledgling tara iti
11:30-11:45	Megan Jolly	Black-eyed Susan – the dark side of an Australasian Gannet's eyes
11:45-12:00	Michael Anderson	Begging call mimicry and formation of host-specific lineages in the shining bronze-cuckoo
12:00-12:15	Hendrik Schultz	A long-term study of brown skua – past, present and future research
12:15-12:30	Nicolas Rawlence	Genomics clarifies the evolutionary origin of the Manawatāwhi Three Kings toroa with implications for the taxonomy of Buller's albatross
12:30-13:30	**Lunch**	

		Session 3 chair Josie Galbraith
13:30-13:45	Elizabeth Bell	29 years and counting: the value of long-term data sets to understand population trends and identify knowledge gaps – a case study using tākoketai/black petrel on Aotea/Great Barrier Island
13:45-14:00	Ela Hunt	Investigating seasonal mortality patterns in the critically endangered Chatham Island tāiko
14:00-14:15	Giuliana Caldeira Pires Ferrari	Native and introduced bird occupancy and behaviour in apple orchards in Aotearoa
14:15-14:30	Timothy Yang	A multi-species approach to a plastic pollution crisis
14:30-14:45	Lenny van Heugten	Stories from the Hūnua Kōkako Management Area
14:45-15:00	James Braund	J. R. Forster's 1781 paper on penguins: the background to and genesis of a classic early study
15:00-15:30	**Afternoon tea & Poster session**	
		Session 4 chair Dianne Brunton
15:30-15:45	Inka Pleiss	Hidden 'food diaries': stable isotopes reveal the importance of latitude and life stage in sooty shearwater diet
15:45-16:00	Hiltrun Ratz	New Zealand Penguin Initiative: kororā diet from scat DNA – some initial results
16:00-16:15	Wendy Fox	Breeding success and nest predation of karoro/Southern black-backed gull in Canterbury
16:15-16:30	Michelle Bradshaw	Has the Birds NZ global banding permit been useful?
16:30-16:50	Kevin Barker	Speed Talk: Urban Owl Project
	Katie Gray	Speed Talk: Banded dotterel migration patterns: embarking on a resighting project together
	Isabella Brown	Speed Talk: Using Accelerometery to Classify At-sea Behaviours of Breeding Seabirds
	Keith Woodley	Speed Talk: Year of the Wrybill
17:30-19:00	**Drinks, workshop**	Banding Gathering Workshop in the Kauri Room. Grab a drink and join the Banding Advisory Committee, chaired by Banding Officer Michelle Bradshaw, in discussing marking of birds and associated data such as moult.
19:00	**Informal dinner**	

SUNDAY 1ST JUNE		DAY 2
07:00		Tea/coffee available
07:30-08:00	Workshop	eBird Workshop in the conference room before the main events of the day
08:00-08:25	(Free time)	
08:25-08:30	**Announcements**	
		Session 1 chair Natalie Forsdick
08:30-09:00	Matt Maitland	**PLENARY** Tāwharanui Open Sanctuary, a 20-year retrospective
09:00-09:15	Gaia Dell'Ariccia & Maíra Fessardi	The Auckland Council Regional Seabird Monitoring and Research Programme: findings and next steps to restore seabirds in Auckland
09:15-09:30	Rebecca French	Kākāpō 'crusty bum' and beyond: how 'infectome' investigations can help the conservation and management of New Zealand birds
09:30-09:45	Hui Zhen Tan	Two decades of hihi / stitchbird genomics: inbreeding load in a small and managed population
09:45-10:00	Richard Littauer	What's in a name: Understanding scientific names for our birds, according to the ICZN Code
10:00-10:15	Nikki McArthur	More than meets the eye: an update on the status of shorebirds breeding in the lower North Island
10:15-10:30	Johannes Fischer	Towards standardised abundance and trend modelling for albatrosses and petrels
10:30-11:00	**Morning tea & Poster session**	
		Session 2 chair James Russell
11:00-11:15	Edin Whitehead	Ten years of The Seabird Trust: a research recap
11:15-11:30	Rachel Klein	The art of nesting: variations in nest construction among native passerines on Rēkohu, Chatham Islands
11:30-11:45	Ariel-Micaiah Heswall	Bird brains and eyeballs: documenting cranial sensory features and UV detection by tube-nosed seabirds, shags and gannets (Procellariiformes and Suliformes)
11:45-12:00	Zunaira Noreen	Fear responses in a threatened seabird: variation in flight initiation distance of red-billed gulls across an urbanization gradient
12:00-12:15	Graeme Taylor	Status and trends in burrowing seabirds breeding at Bethells Beach, west Auckland, over 35 years
12:15-12:30	Jacinda Woolly	Assessing the conservation status of the birds of Tāmaki Makaurau / Auckland
12:30-13:30	**Lunch**	
		Session 3 chair Brendon Dunphy
13:30-13:45	Alan Tennyson	An update on the Miocene St Bathans fossil avifauna
13:45-14:00	Jamie Darby	Riders on the storm: coordinated movements of toanui in response to a passing storm

14:00-14:15	Colin Miskelly	Hidden in plain sight: genetic analysis of museum specimens confirms the presence of MacGillivray's prion in New Zealand and Australia
14:15-14:30	Matt Rayner	Interaction of kawau tikitiki/spotted shags with northern North Island set commercial net fisheries
14:30-14:45	Campbell James	Speed Talk: A drone survey of a naturalised population of emu on Rēkohu / Wharekauri / Chatham Island, Chatham Islands
	Chris Muller	Speed Talk: New tech in conservation research – Transforming fieldwork with Multi-Track aerial wildlife tracking
	Hui Zhen Tan	Speed Talk: Adaptive management improves the hatching rate and breeding success of the Northern New Zealand Dotterel
14:45-15:05	Closing ceremony	
15:05-15:30	**Afternoon Tea**	
15:30-16:45	AGM and awards	
19:00	**CONFERENCE DINNER**	

MONDAY 2ND JUNE		
Workshops	**06:00**	Private cars depart from the hotel for Mist-netting in the orchard, to arrive by 7am
	10:00 - 11:00	**Faunatech Acoustics Workshop, Kauri Room (Hotel)**
Field trips		Tiritiri Matangi, own transport to ferry. Ferry departs city 8:30, Gulf Harbour 09:25
	07:30	Coach 1 departs from the hotel for Hauraki Gulf Pelagic (Sandspit), return 6pm
	08:30	Coach 2 departs from the hotel for Tawharanui Open Sanctuary, return 5.30pm
	~~**09:00**~~	~~Coach 3 departs from the hotel for Auckland Museum, return in time for afternoon Ambury trip~~
	13:00	Coach 3 departs from the hotel for Ambury, return 5pm
		Note: All field trips are weather dependent and may be cancelled at short notice. Return times are approximate. Wear suitable clothing and footwear. **Participants need to bring their own lunch – there is no packed lunch available.** There is a Woolworths supermarket a few minutes' walk from the hotel (Greenlane).

Posters

Timothy Yang, Ariel-Micaiah Heswall, Anne Gaskett	Seabird plastic ingestion: species-specific patterns?
Inka Pleiss, Alice Della Pennaa, Matt Rayner, & Brendon Dunphy	Feather forecast: unpredictable with a chance of breeding failure
Johannes Chambon, Johannes H. Fischer, Graeme Taylor, Dave Boyle, Philip Seddon, Sarah J. Converse	Population modelling of the Critically Endangered Chatham Island tāiko
Takayasu Amano	Wintering Distribution and Ecological Factors of Barn Swallows (Hirundo rustica) in Southern Japan
Cara R. Thomson, Kristal E. Cain, and Ilse Corkery.	Deterrence and Diversion: Investigating New Ways of Managing Aotearoa's Swamp Harrier (Kāhu) in Sensitive Areas
Natalie Forsdick	Applications of genetics and genomics for conservation management of Aotearoa New Zealand birds
Simon Lamb, Samantha Ray, Dan Burgin	Population estimates and trends for toanui/flesh-footed shearwater on Mauimua/Lady Alice Island and Ohinau Island
Jonathan Hardie	Spectastiq: A new open source spectrogram viewer for bird call audio
Campbell Maclean, David Boyle, Elizabeth Bell	Conservation milestones from monitoring tāiko/Chatham Island taiko (Pterodroma magenta) at the Tuku Nature Reserve, Chatham Islands
Kurien Yohannan	Penguins of New Zealand
Ellen Webb and Alistair Glen	Stick It to Erosion: Protecting New Zealand Fairy Tern Nesting Sites Using A Biopolymer Sand Stabilization Method
Isabella Brown	Using Accelerometery to Classify At-sea Behaviours of Breeding Seabirds

Make sure to get your vote in for the People's Choice Poster ! 

Workshops and Displays

A **Banding Gathering** will be held on Saturday, from 5.30 to 7pm in the Kauri Room. Grab a drink and join the Banding Advisory Committee, chaired by Banding Officer Michelle Bradshaw, in discussing marking of birds and associated data such as moult.

An **eBird Workshop** will be held on Sunday 1st June, 07:30 - 8.00am in the conference room before the main events of the day.

Join **Faunatech** for a hands-on training session on Monday 10:00 to 11:00 to learn the features and set up of the Song Meter Micro 2, Song Meter Mini 2, and SM4 Bird to monitor for birds (and other wildlife!), plus a deep dive into the Song Meter Configurator App. This is a great training opportunity for researchers just starting or already involved in using bioacoustics.

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BirdsNZ Conference 2025

ABSTRACTS

Day 1

Plenary 1

Highlights from 35 years of researching birdsong, behaviour, and conservation in New Zealand: building synergies and capability

Dianne H Brunton[1]

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Behavioural ecology and conservation biology go hand in hand, with some key synergies that enhance both fields. Behavioural studies help predict how species will respond to a changing world. By understanding behaviour and behavioural plasticity we can improve captive breeding programmes and translocation success. If we have knowledge of social interactions, and movement patterns, then we can model threats such as disease spread. Finally, behavioural traits like mate choice and dispersal affect genetic diversity, critical for population viability. Humans have so profoundly altered both the landscape and social environments of our bird species that we have limited knowledge of how our birds behave and whether they will thrive in anthropogenic landscapes of the future. My research interests and avian model systems centre around this conservation behaviour interface. *How can studying bird behaviour support conservation actions and, the reverse perspective, how do conservation actions influence the behaviour of our bird species?* Today I will discuss how Aotearoa New Zealand's past and present conservation approaches aimed at long term protection of our endemic and native birds have provided opportunities to gain insights into the processes of cultural evolution, transmission of song, and vocal complexity. I will use examples from the research that my students and I have conducted over the last 35 years. Our aims have been to test behavioural theory and enhance conservation outcomes. Specifically, I will present some of the key findings from multiple studies of korimako bellbirds (*Anthornis melanura*) and Tieke North Island saddlebacks (*Philesturnus rufusater)* within protected environments.

Conservation of the critically endangered tara iti/New Zealand fairy tern: achievements and future challenges

Ilse Corkery[1], Tony Beauchamp[1], Dianne Brunton[2], Kristal Cain[2], Claire Greenwell[3], Troy Makan[1], Dion Pou[4], Jamie Stavert[1], Tammy Steeves[5] and Alex Wilson[1]

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The conservation of tara iti, or New Zealand fairy tern (*Sternula nereis davisae*), offers a compelling case study on managing critically endangered species in urban-adjacent environments. Here we examine the changes and outcomes of the conservation efforts of the last two decades, picking up from when the last comprehensive review was conducted (Ferreira et al. 2005). At that time, the population was estimated at approximately 30 individuals. The last review underscored the significant positive impact of intensive management, highlighting the effectiveness of targeted actions such as habitat protection, predator control, and breeding site monitoring. However, it also called for further research to better understand breeding dynamics and to explore rapid population growth strategies, including captive breeding. Since 2002, key management actions have included the implementation of results from a Structured Decision-Making Workshop in 2017, community advocacy, increased investment and resources, site ranger activities, predator control measures, habitat enhancement projects, proactive egg rescues, and a captive rearing program. Additionally, a dedicated research program has been established, with management incorporating lessons learned from ongoing studies. Twenty years on from Ferreira's paper, we ask: Have things improved for tara iti, and what does the future hold?

Addressing the conservation conundrum of the sooty shearwater on Kāpiti Island

Etienne Ossona de mendez[1]*, Brendon Dunphy[1], Kristal Cain[1], Sarah Bury[2], Johannes Fischer[3] and Graeme Taylor[3]

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Most tītī/sooty shearwaters (*Ardenna grisea*) breed in Aotearoa New Zealand, and their global population has been rapidly declining over the past decades. On Kāpiti Island, they are the only remaining member of the order Procellariiformes. Despite the establishment of the island as a nature reserve in 1897, and the eradication of non-native mammalian predators in 1996, surveys show that tītī numbers have continued to decrease (250–300 breeding adults remaining). While habitat loss and mammalian pests historically contributed to their decline on the island, current trends are driven by a combination of threats. These include at-sea challenges, such as fisheries impacts and global warming, and breeding ground pressures from weka that heavily prey on chicks, resulting in almost no fledgling production. Both species are considered taonga by local iwi, and invaluable for the health of the island ecosystem. The situation creates a conservation conundrum that needs to be addressed by assessing the demographics of the dwindling tītī colony and understanding the extent and consequences of weka depredation on tītī survival. To address this conservation conundrum, we are using a structured decision-making which aims to work collectively with researchers, DOC, iwi and volunteers, to identify suitable management actions for tītī and weka on the Island. This research aims to support the decision-making by using stable isotope analysis to assess weka individual foraging specialization, spatial analysis to track weka movement around the colony, and demographic models to forecast the trajectory of the tītī population following different mitigation actions.

* PhD student

The conservation status of the hihi: past, present and future

Erin Patterson[1], Lynn Adams[1,2], John Ewen[1,3], Troy Makan[1,4] and Kevin A. Parker[1,5]

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Hihi (*Notiomystis cincta*) originally occurred throughout Te Ika-a-Maui/the North Island but had disappeared by the 1880s, with just a single population remaining on Te Hauturu-o-Toi/Little Barrier Island. Habitat clearance, predation and disease likely all contributed to this loss. Since the 1980s conservation managers have attempted to establish populations at several predator-free sites through translocations, with mixed success. This work indicates that hihi require ongoing management to ensure their survival in all but the most intact forest habitats. The Hihi Conservation Charitable Trust was set up in 2018 to support hihi recovery implementation, as recommended by the Department of Conservation Hihi Recovery Group, by supporting groups managing hihi populations. Early conservation management of hihi focused mainly on establishing new hihi populations. However, an ongoing structured decision-making (SDM) process has been used by hihi experts over the last decade to guide conservation decision-making. SDM helped hihi experts define the following objectives for hihi conservation, along with identifying the best actions to achieve these objectives: 1) increase the total number of hihi nationwide 2) increase the natural ecological setting of the hihi 3) reduce the cost of managing hihi populations 4) increase awareness and appreciation of hihi. Hihi recovery is now guided by a national adaptive management programme that allows cross-site learning and coordinated decision-making using population models and a variety of decision-making tools. Here, we present an update on the national status of hihi, including the eight current populations, along with insights into the challenges faced by hihi and conservation managers.

Rotoehu Ecological Trust: a North Island kōkako success story, Bay of Plenty, Aotearoa New Zealand

Chris Bycroft[1], Jane Bird[1], Margaret Dick[1], Emma Radford[1] and Roger Bawden[1]

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Rotoehu Forest contains one of the largest contiguous and one of the largest relic populations of North Island kōkako (*Callaeas wilsoni*) remaining. Kōkako are an endemic threatened bird species whose numbers have declined markedly due to predation particularly by rats and possums. Rotoehu Forest and its kōkako are within the rohe of Ngati Makino. Management and research of this population has been undertaken since the mid-1990s. Rotoehu Ecological Trust (RET) was formed in 2013 to assist the Department of Conservation (DOC) with managing this population. The combination of the work the Trust and DOC undertake has proven to be highly successful in increasing the kōkako population. The Trust undertakes ground-based pest animal control, primarily focusing on rats. The trust currently undertakes animal control in 1601 hectares of forest, with the potential to expand to c.2,500 hectares when resources allow. DOC currently undertakes an aerial 1080 operation every three years with the most recent being in 2023 covering >3,000 hectares. Prior to the Trust's involvement (between 1995 and 2013), the population slowly increased from 17 to 50 pairs. The last two censuses (2019 and 2023) found the population had increased from 157 to 289 pairs (including singles, 592 birds). Of these, 471 kōkako were within areas with pest control by RET. Birds have also been translocated from Rotoehu Forest to other locations with the aim to help establish and/or improve the genetic diversity of other populations.

Birds of Aitutaki and Manuae, Cook Islands

James C. Russell[1], Sebastian Steibl[1,2], Samuel D. J. Brown[3], Graham Wragg[4], Gerald McCormack[5]

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The distributions of birds on the islands of Aitutaki and Manuae were surveyed from 3 - 17 October 2024. On Aitutaki we describe twenty-two resident and migratory species across the 17 islands, with regionally important colonies of red-tailed tropicbirds, red-footed boobies and wedge-tailed shearwaters, as well as a population of the IUCN-vulnerable blue lorikeet on Aitutaki's main island. While Pacific rats and cats are present on some islands, others potentially remain rat-free. Over the last 25 years, the reef island of Motukitiu has undergone a substantial habitat transformation from introduced coconut forest to native atoll broadleaf forest, enabling the recovery of seabirds. Prevalent threats to the birds of Aitutaki include the introduction of additional rat species, spread of Pacific rat to currently rat-free islands within the almost-atoll, unsupervised tourism, and habitat modification on the small islands. On Manuae we describe fifteen resident and migratory species across the 3 islands, with regionally important colonies of red-tailed tropicbirds and an unidentified Procellariidae, as well as a population of the IUCN-vulnerable bristle-thighed curlew. Pacific rats are the only introduced vertebrate, since common myna and red jungle fowl have died out. Over the last 50 years, the avifauna of Manuae atoll has recovered dramatically following the abandonment of the island by humans, and the abundance of over-wintering bristle-thighed curlew passes the threshold for an Important Bird Area (more than 1% of the estimated global population).

Movement and habitat use of fledgling tara iti

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Tara iti (Sternula nereis davisae; New Zealand fairy tern) is New Zealand's rarest breeding bird with an estimated population of only 40 individuals. Despite extensive conservation efforts, the population remains critically low. Enhancing the survival and recruitment of fledgling tara iti into the breeding population is crucial for population growth. There is limited knowledge about their overwintering habitat use and behavioural interactions, particularly between captive and wild-reared birds. This study aims to improve understanding of overwintering habitat use by analysing spatial data from satellite-tagged birds and conducting systematic surveys of new and historically known roosting sites across the Kaipara Harbour. We can identify key roosting sites by determining the presence and absence of birds across multiple habitats. We can also understand how captive-reared fledglings are integrated into the wider population through systematic surveys. Preliminary data suggests that these birds are travelling much further and utilising a wider range of roost sites than previously documented. This research will provide the first detailed insights into the movements of individual tara iti and subsequently facilitate more effective decision-making, including targeted predator control, habitat enhancement and public awareness initiatives.

*MSc student

Black-eyed Susan – the dark side of an Australasian Gannet's eyes

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High pathogenicity avian influenza (HPAI) H5N1 clade 2.3.4.4b has spread rapidly around the globe since the early 2020s [with the notable exception, at time of writing, of Australasia and the South Pacific resulting in massive mortality in many species of seabirds. The North Atlantic Gannet *Morus bassanus* was particularly badly impacted with tens of thousands of birds dead. Some birds however appear to have survived infection (testing seropositive for antibodies) but had 'black' eyes (Lane *et al*. 2024.*Ibis* 166: 633-650. doi:10.1111/ibi.13275). The eye changes in these birds have not yet been closely examined. Photographs of an Australasian Gannet *M. serrator* with apparently dark eyes off SW Australia in July 2024 and occasional historical records raised the possibility that these southern hemisphere gannets may have been exposed to HPAI or another cause of uveitis. H5N8 HPAI was recorded in Cape Gannets *M. capensis* in 2018, apparently killing several thousand birds (Roberts *et al.* 2023. *Transboundary and Emerging Diseases* doi.org/10.1155/2023/2708458), but there have been no reported occurrences of HPAI in gannets in Australasia. We will report on our study at the Farewell Spit gannet colony between August 2024 and March 2025 during which several birds with dark eyes were recorded and one examined.

Begging call mimicry and formation of host-specific lineages in the shining bronze-cuckoo

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Antagonistic coevolutionary interactions between avian brood parasites and their hosts can lead to selection for the discrimination of parasites by their host via visual or acoustic signals. Therefore, nestlings of some brood parasites may be under selection to evolve visual and vocal mimicry of host nestlings to avoid discrimination by host parents. Some brood parasites diversify into host-specific populations by mimicking visual features of the host offspring (either eggs or nestlings). However, whether a similar mechanism applies to the begging calls of their hosts remains unclear. In this study, we analysed the begging calls of three subspecies of the shining bronze-cuckoo, which present visual mimicry of three different host species (family Acanthizidae) that vary in their ability to discriminate parasite nestlings. We found that the begging calls of each cuckoo subspecies match the respective host more closely than any of the other cuckoo subspecies. Therefore, selection for coevolutionary diversification appears to overcome phylogenetic constraints on cuckoo begging call structure. The coevolutionary interactions in these parasite-host systems have promoted the selection for refined host mimicry by the cuckoo and the formation of geographically isolated evolutionary units across the range of the species.

A long-term study of brown skua – past, present and future research

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Brown skua are large seabirds with a predatory and scavenging lifestyle. They have a predominantly subantarctic breeding distribution, with latitudinal limits ranging from the Antarctic Peninsula to subtropical latitudes. Brown skua on the Chatham Islands have been the subject of intensive study, investigating population dynamics, genetics, movement behaviour, diet and moulting patterns. This body of research has provided important insights into the life history of this charismatic seabird and the role of top predators in the ecosystem. Moreover, brown skua are sexually dimorphic (females larger than males), some breed communally (one female and two or more males), and can solve sophisticated cognitive tasks. Research has shown strong male-female differences in diet and movement patterns during the breeding season, which has implications for human-wildlife conflict. Such differences persist, to a lesser extent, during the non-breeding period when skuas disperse at-sea. Despite more than 50 years of research, many questions remain unanswered. In this presentation, we review past and present research on brown skua in New Zealand, highlighting our recent findings and suggesting opportunities for future research.

Genomics clarifies the evolutionary origin of the Manawatāwhi Three Kings toroa with implications for the taxonomy of Buller's albatross

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Toroa albatross are almost as large as the controversy surrounding their evolutionary relationships and number of species. Previous morphological and genetic data support the recognition of two subspecies of Buller's albatross: *Thalassarche bulleri platei*, which breeds on Rekohu Chatham Islands and *T. b. bulleri*, which breeds on the Snares and Solander Islands. However, the evolutionary origin and taxonomic status of the Manawatāwhi Three Kings population that was only discovered in 1983 remains unresolved. Currently, birds from Manawatāwhi are thought to be *T. b. platei* based on similar breeding times. Using genomic approaches, our research has shown that the Manawatāwhi population clusters within *T. b. platei*, and that previous assertions of genetic structuring between *T. b. platei* and *T. b. bulleri* are not supported by our new data. Our research raises questions about the separate subspecific status of Buller's albatross populations, and highlights the need for close reference genomes for accurate analysis and interpretation of genome-wide genetic variation, with implications for taxonomy of albatross in general.

* MSc student – supervisor presenting

29 years and counting: the value of long-term data sets to understand population trends and identify knowledge gaps – a case study using tākoketai/black petrel on Aotea/Great Barrier Island

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The tākoketai/black petrel (*Procellaria parkinsoni*) population on Aotea/Great Barrier Island, Hauraki Gulf, Aotearoa New Zealand has been intensively monitored since 1995. Recognised as one of many seabird species at high risk from commercial fishing activity within New Zealand waters, understanding the population status and trends of tākoketai is crucial to their conservation. Significant data on a range of population parameters including adult survival, breeding status and success, and behaviour has been collected over the past 29 years. However, despite over 5,000 chicks being banded during this period, juvenile survival and recruitment into the population has been difficult to quantify. Current return rates of juveniles to the Hirakimata/Mt Hobson colony are less than 8%. Understanding the factors affecting return rates of chicks is vital. It is particularly important to determine whether it is related to low juvenile survival or if it is simply due to a lack of detection. Understanding juvenile survival and recruitment is also necessary for accurate population estimates and risk assessment modelling and filling this knowledge gap is critical. Tracking has been undertaken to determine whether different age classes and sexes forage in different areas or migrate via different routes, which may result in differing risk profiles. In addition to fisheries, climate events and plastics have increased the risk to this seabird species and its habitat, both in Aotearoa New Zealand when breeding and in international waters while migrating and overwintering. Focused study on these impacts is needed to determine levels of risk and identify much needed mitigation options for this taonga species.

Investigating seasonal mortality patterns in the critically endangered Chatham Island tāiko

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Seabirds tend to be cryptic and highly migratory, which can make it difficult to identify threats to populations. With around 50 known breeding pairs, the critically endangered Chatham Island tāiko (*Pterodroma magentae*; hereafter tāiko) is one of the world's rarest seabirds. Extensive predator control, habitat protection, and the successful establishment of a new breeding site within a predator-proof fence have facilitated increases in both breeding success and population size. Despite this success, tāiko are still in very low numbers, and any unidentified threats to the species could significantly impact the recovering population. Fortunately, despite being highly migratory, tāiko follow predictable annual patterns in behaviour, breeding over the summer months and migrating east away from New Zealand over winter, often overwintering in waters off the coast of Chile. Using 18 years of RFID data collected by the Department of Conservation and Wildlife Management International Ltd from tagged birds, we are using mark-recapture methods in a Bayesian statistical framework to investigate tāiko survival rates across their annual cycle. Identifying periods of the year with unexpectedly high mortality may imply that an unknown factor is impacting tāiko. Because tāiko behaviour is related to the time of year, we can examine associations between seasonal patterns in survival and tāiko location and therefore consider the potential location-based risks they may be exposed to. By identifying possible threats our work aims to provide direction for future tāiko research and the maintenance of effective conservation management for the species.

* MSc student

Native and introduced bird occupancy and behaviour in apple orchards in Aotearoa

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Agriculture dominates Earth's landscape and rivals with climate change as main drivers of biodiversity loss. Food production systems often rely on benefits provided by wildlife (ecosystem services), while also suffering from drawbacks of the presence of certain species (ecosystem disservices). Nature's significant benefits to humans have been long recognised, but more information is necessary to understand the potential benefits of food production systems to wildlife. Across four seasons in 2024/25, six apple orchards were surveyed in Aotearoa for bird occupancy and behaviour, totaling 112 hours of observations. 20 native and 24 introduced species were spotted within the surveys, and occupancy scores were constructed to investigate how species' presence and abundance varied throughout the seasons. Both native and introduced species peaked in the winter season, where the abundance of fruits left in the trees and in the ground provided an important source of food for the birds. Most species recorded were considered common, but rare migrants and endangered native species were also observed. Edges of orchards held significantly more bird species throughout the year, indicating the importance of habitat heterogeneity to the permanence of wildlife in food production systems. Bird behaviour provided insight on which birds could provide benefits to the orchards through pest control of insects, or damage to the crops through feeding on the fruits. Understanding these synergies is essential to promote better conservation practices for the permanence of wild birds in an ever-changing world of agricultural intensification and expansion of human-managed lands.

* PhD Student

A multi-species approach to a plastic pollution crisis

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Plastic pollution is a major global issue affecting many species. Annual global plastic production has increased nearly 200-fold since 1950. Seabirds are highly vulnerable to plastic pollution, with threatened species disproportionately affected. Ingestion effects include starvation, internal injuries, and false satiation. Current research focuses on exposure risk, i.e., the quantity of plastic in their habitat. However, species in the same areas can vary in plastic ingestion, suggesting other factors at play. Tāmaki Makaurau/Auckland and the Hauraki Gulf is a critical seabird hotspot, home to 88 seabird species (23% of the world's species), with five endemic species. This location allowed for the comparison of specimens from 19 seabird species across six families. Birds had their proventriculus and gizzard examined for plastics, noting the amount, mass, colour, types, and sizes of plastics, along with body condition and dehydration.
Plastics were measured for colour using a spectrometer, modelling the colours into seabird colour vision. The most common plastics found were hard fragments, white and 1–5 mm in diameter. Additionally, what is thought to be glass microbeads commonly used in road markings were found ingested by seabirds. Tītī sooty shearwater, tītī wainu fairy prion, and takahikare white-faced storm petrel had the highest incidence of plastic ingestion. Feeding behaviour and diet were important factors, with surface-feeding birds that prey mainly on plankton ingesting the most plastics. Colours reflecting in the longer wavelengths of the avian visual spectrum (around 600–700 nm) and contrasting highly against the ocean may explain why plastics are commonly ingested.

*MSc Student

Stories from the Hūnua Kōkako Management Area

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This is the story of the remarkable recovery of a very special, at-risk native bird, the North Island kōkako. Prolific in the Hūnua Ranges in the early 1900s, by the 1950s habitat loss and predation had put the population under pressure. Around that time, an ex-World War One soldier found a nest and ensured it was immortalised in the first ever photographs of kōkako on a nest. By 1994, only one breeding pair of kōkako remained in the Hūnua Ranges. In a herculean effort by the Auckland Regional Council, the Department of Conservation and an army of volunteers, the tides were turned and by 2022, 4,000 traps and bait stations over 200 kilometres of tracks hosted the second largest mainland kōkako population at more than 250 breeding pairs, all within an hour of downtown Auckland, the most populous city in New Zealand. This work chronicles the remarkable recovery of the North Island kōkako in the Hūnua Ranges, detailing the collaborative efforts of conservationists, government agencies, and volunteers. It includes insights into habitat restoration, predator control, and community engagement which offer practical lessons for avian conservation. Practical experience as an environmentalist in South Auckland and North Waikato provides a unique perspective on regional conservation challenges and successes. This work aids enriched discussions on avian conservation strategies and inspires continued efforts to protect New Zealand's native bird species.

J. R. Forster's 1781 paper on penguins: the background to and genesis of a classic early study

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J. R. Forster's 1781 paper on penguins, *Historia Aptenodytae*, which drew on observations he had made as official naturalist on James Cook's second Pacific voyage (1772–1775), was one of the earliest scientific texts devoted exclusively to this bird family. Praised by Erwin Stresemann as an example of brilliant, thorough, and comprehensive exposition, Forster's paper is notable for the fact that it contains the first formal descriptions of not one but five different species, one of which is the Little Penguin (*Eudyptula minor*). This oral presentation looks at the background to and genesis of Forster's classic paper. It will briefly 1/ list the different species of penguins he met with over the course of Cook's second voyage; 2/ summarise how his understanding of this bird family developed as the voyage progressed; and 3/ note the key contemporary texts that informed his thinking about penguins during and after the voyage. Special emphasis will be given to Forster's encounters with and description of the Little Penguin.

Hidden ‘food diaries’: stable isotopes reveal the importance of latitude and life stage in sooty shearwater diet

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Sooty shearwaters, or tītī, are native to Aotearoa but well known across the Pacific Ocean for their impressive 64,000 km yearly migration. Unfortunately, human stressors such as climate change have resulted in a decrease in populations over time. The conservation of this wide-ranging species requires detailed knowledge of their breeding biology and foraging ecology. Of particular importance is knowledge of their dietary preferences. Whilst ample studies have explored diet via stable isotopes in non-breeding tītī in the North Pacific, fewer studies have replicated this work on breeding tītī in Aotearoa. This is the first study to present tītī feather and blood stable isotope analysis across 10 degrees of latitude using four study sites across Aotearoa. By accessing museum records, we are also able to present a novel time-series of stable isotope data dating back to 1907. These hidden ‘food diaries’ reveal life stage and latitude to play an important role in dietary differences across Aotearoa’s tītī. There are clear differences in tītī diet between adults, early chicks, and late chicks; and North and South Island colonies are shown to utilise significantly different foraging habitats and prey species. Interestingly, whilst inter-annual differences in diet are evident between 2023 and 2024, our long-term time series does not indicate a clear shift in foraging space or prey preferences over time. This data provides valuable insight into the adaptability of tītī to climate change and highlights the key prey sources that should be preserved to ensure the species' long-term survival.

* Student

New Zealand Penguin Initiative: kororā diet from scat DNA – some initial results

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The diet of little penguins/kororā in Aotearoa New Zealand is only known south of Banks Peninsula. The network of community groups supported by the New Zealand Penguin Initiative (NZPI) throughout Aotearoa provides an opportunity for a nationwide scat DNA study to fill the gap in the diet knowledge of kororā elsewhere in Aotearoa. Scat was collected from eight locations: Muriwai Beach (Auckland), Tiritiri Matangi (Hauraki Gulf), Moturiki Island (Bay of Plenty), Cape Sanctuary (Hawkes Bay), Greta Point (Wellington), Wakefield Quay (Nelson), Cameron's Beach (Westland), and Allans Beach (Otago Peninsula) in October/November 2024 and January 2025, and analysed by Wilderlab Ltd. Family was designated the minimum operation taxonomic unit for fishes, and the relative read abundance of DNA sequence counts of >10% were compared between locations and seasons. Ten fish families were identified as important: anchovies (Engraulidae), sardines (Clupeidae), moki and tarakihi (Cheilodactylidae), gemfishes (Gempylidae), triplefins (Tripterygiidae), mackerel and tunas (Scombridae), warehous (Centrolophidae), lanternfishes (Myctophidae), sauries (Scomberesocidae), and needlefishes (Belonidae). It was not possible to distinguish between primary and secondary prey. Pelagic youngsters were likely taken of those species that have benthic adults. Needlefishes, identified to family only and extralimital from the Kermadec Islands were found as far south as Hawkes Bay, suggesting a possible southward migration with warming oceans caused by climate change. They may increase in importance in the diet of kororā in the future.

Breeding success and nest predation of karoro/Southern black-backed gull in Canterbury

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Karoro/Southern black-backed gull (*Larus dominicanus*) are a large, opportunistic gull species, native to Aotearoa New Zealand. Karoro are considered 'super abundant' in Canterbury, due to their successful exploitation and adaptability to anthropogenic activities. There are limited studies focused on their breeding success, and it has been largely assumed that karoro are universally successful breeders. A study spanning four breeding seasons (October 2021-March 2025) collected life-history data to estimate the breeding success of karoro from colonies on the Waimakariri & Hakatere/Ashburton Rivers. The results varied significantly between years and colonies. Breeding success varied from 0.94-46.15%, and the number of fledglings per nest ranged from 0.02-1.25. Flooding, mammalian predators, and nest predation from other karoro were noted as the primary reasons for breeding failure. Colony density and accessibility also appear to influence factors contributing to nest success or failure.

*PhD student

Has the Birds NZ global banding permit been useful?

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The Ornithological Society inaugurated the New Zealand National Bird Banding Scheme (NZNBBS) in 1950, and the Society (Birds NZ) remains one of the Scheme's biggest stakeholders in terms of participation. In the past decade, one in six non-gamebird banding events nationally were carried out under 42 sub-projects within the Birds NZ Global Authorisation. This tallies to almost 20,000 birds of 66 species of all species groups except kiwi, with passerines making up 89%. Over 40% of banding events were used as training opportunities, with 165 Level 1 and 2 operators being supervised by 28 Level 3 experts during some 8,300 banding events. Successive Birds NZ Banding Liaison Officers have overseen these projects after seeking approval from the Scientific Committee Convenor and Banding Officer, also serving on the NZNBBS Banding Advisory Committee. The Global Authorisation expires in February 2026, and the Banding Office is working with Birds NZ to ensure that this will be renewed – using the FALCON Bird Banding Database as a vehicle for reporting. The presentation will cover highlights and stories from different Birds NZ projects. In particular, we will be highlighting Peter Reese's Bird Banding Studies Canterbury project, contributing one-third of birds banded and 51 trainees supervised since 2016. We can state with utmost confidence that the Birds NZ Global Authorisation has contributed to our increased knowledge of birds while facilitating training opportunities for Birds NZ members.

Day 2

Plenary 2

Tāwharanui Open Sanctuary, a 20-year retrospective

Matt Maitland

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Following pest-proof fencing and a multi-species pest eradication in 2004, New Zealand's first fenced open sanctuary integrating intensive conservation with recreation opportunities and a working farm in a regional park setting re-opened to the public. This signalled the most tangible step in realising the vision "To create an open sanctuary where visitors can freely experience a representative range of natural communities that would have originally been present on Tāwharanui Peninsula". A first-person reflection of the first 20 years of Tāwharanui Open Sanctuary will be presented. An exploration and examination of the social, emotional, technical, and biological realities of this audacious project will attempt to squeeze two decades of endeavour into a single address. Case studies of resident, immigrant and reintroduced wildlife will illustrate life inside and beyond the fence. Although its origins were in these large fencing and eradication interventions, the ongoing success and security of the sanctuary is reliant upon the mahi required by community and park staff to create and protect safe haven and habitats. This effort and outcome have been accessible to and enjoyed by millions of visitors, and of course the children of Tāne for which it is home.

The Auckland Council Regional Seabird Monitoring and Research Programme: findings and next steps to restore seabirds in Auckland

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The Tāmaki Makaurau / Auckland region is an internationally recognised hotspot for seabird diversity. Remarkably, 25 seabird species are known to breed in this region, of which 15 (60%) are New Zealand endemic species or subspecies. However, most of these birds are 'threatened' or 'at risk', requiring urgent management for protection and restoration. This led Auckland Council to establish the first regional government seabird monitoring and research programme. This long-term (>10 years) programme aims to increase our knowledge on the presence, health, and trends of seabird populations in the Auckland Region and the factors affecting their population distributions and trends so as to advise and develop restoration actions to improve their conservation statuses. In the first five years of the seabird programme, we have successfully set up monitoring and research projects for a number of species across the region, and we gathered important new knowledge. Here, we will present the findings of these years of monitoring and the next steps and developments of the programme. We will also present new projects in collaboration with mana whenua and local communities, and the research studies for the assessment of threats. Finally, we will illustrate how our data are used to inform policy and management for the restoration of thriving seabird populations.

Kākāpō 'crusty bum' and beyond: how 'infectome' investigations can help the conservation and management of New Zealand birds

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When a disease emerges in wildlife, determining the causative factor(s) can be extremely challenging, yet crucial for effective management and conservation. Infectome investigations—examining the complete set of microbial and viral communities within a sample—are invaluable for identifying potential pathogens associated with disease, particularly in endangered birds where the number and type of samples that can be obtained is limited. Herein, I will outline how these investigations can aid in bird conservation and management, using exudative cloacitis in kākāpō (*Strigops habroptilus*) as a case study. The kākāpō is a critically endangered flightless parrot which suffers from exudative cloacitis, a debilitating disease resulting in inflammation of the vent margin or cloaca. Despite this disease emerging over 20 years ago, the cause remains elusive. We characterised the infectome of lesions and cloacal swabs from nine affected kākāpō, and compared this to cloacal swabs from 45 non-diseased kākāpō. We identified three bacterial species - *Streptococcus gallolyticus*, *Enterococcus faecalis* and *Escherichia coli* - as significantly more abundant in diseased kākāpō compared to healthy individuals. The genetic diversity observed in both *S. gallolyticus* and *E. faecalis* among diseased kākāpō suggests that these bacteria originate from environmental sources rather than from kākāpō-to-kākāpō transmission. The presence of *E. coli* virulence factors in the diseased kākāpō population suggests that *E. coli* may play a critical role in disease progression, possibly in association with *E. faecalis*. These findings shed light on the causative agents of exudative cloacitis and lay the groundwork for practical conservation interventions and further research.

Two decades of hihi / stitchbird genomics: inbreeding load in a small and managed population

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Population declines result in increasingly small and isolated populations. These small populations often experience genetic diversity loss and increased inbreeding, which can reduce fitness – also known as the genetic load. While genomics is now routinely used to characterise threatened populations, more studies on the dynamics of genetic load and purging of that load are needed to inform adaptive management. Our study system is the hihi / stitchbird, *Notiomystis cincta*, a forest bird endemic to Aotearoa, New Zealand. The hihi went extinct from the North Island of Aotearoa in the late 1800s and underwent a prolonged bottleneck as one population on Te-Hauturu-o-Toi. Translocations began in the late 1900s, and seven reintroduced populations currently exist. In this study, we used whole genome resequencing data across two decades from the reintroduced island population of Tiritiri Matangi. We first quantified inbreeding levels from genomic data that has been imputed. We then tested for evidence of inbreeding depression by modelling lifetime reproductive success against genome-wide inbreeding. We calculated genetic load in lethal equivalents and quantified the opportunity for purging genetic load based on our long-term pedigree. We found high inbreeding levels in the hihi and some evidence for inbreeding depression. The genetic load carried by the population reflects past bottlenecks and subsequent management. Purging of mildly deleterious mutations could be less effective in the face of genetic drift and reduced selection. Our study on the hihi contributes to understanding small population dynamics, the evolutionary mechanisms that affect adaptive potential, and the impact of management strategies.

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What's in a name: Understanding scientific names for our birds, according to the ICZN Code

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The Checklist of the Birds of New Zealand, published by the BirdsNZ Checklist Committee, represents the joint effort of generations of scientists working with birds in Aotearoa New Zealand. The list includes the scientific names for birds which have confirmed records here, as well as fossil records. It contains thousands of bibliographic references, tracking taxonomic shifts and nomenclatural changes. There are roughly 1100 scientific names currently in the Checklist, each of which conforms to the International Commission on Zoological Nomenclature's published Code, which mandates how scientific names are to be formed and changed.

At times, taxonomic revision may be necessary according to the Code. In order to see whether changes were necessary, I reviewed each name in the Checklist, looking at original descriptions, etymologies, and subsequent usages for each name. In this talk, I will cover some of the major reasons why dozens of names may need to be revised, focusing in particular on grammatical gender agreement according to Articles 30-34 of the Code, as well as First Revisers for certain names. I will discuss the process of changing the names, and why it is important to do so. Finally, I'll touch on issues with the Code itself and philosophical differences in its interpretation, with suggestions for how it could be improved in the ICZN's next edition.

[*]PhD Candidate

More than meets the eye: an update on the status of shorebirds breeding in the lower North Island

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Between 2017 and 2025, shorebird census counts were carried out along 998 km of rivers and 931 km of coastline in the Wellington, Hawke's Bay and Manawatū-Whanganui regions, creating the first near-complete picture of the numbers and distribution of shorebirds breeding in coastal and riverine habitats in the lower North Island. During these surveys, teams of observers traversed rivers and coastlines on foot, by kayak and by motorised boat, counting the numbers of all shorebird species found along each 1 km section of river and coastline surveyed, working together to systematically grid-search all areas of open sand, rock and gravel for nesting shorebirds. These surveys have revealed that river and coastal habitats in the lower North Island support nationally significant populations of pohowera / banded dotterels, black-fronted dotterels and tōrea pango / variable oystercatchers. Black-fronted dotterels are now more common and widespread than pohowera / banded dotterels on the rivers of Wellington and Manawatū-Whanganui. Tūturiwhatu / New Zealand dotterels and tōrea / South Island pied oystercatchers both appear to be (re?)colonising the lower North Island. Cyclone Gabrielle, which struck Hawke's Bay in February 2023, and severe flooding in the Wairarapa in mid-2022, caused widespread disturbance to riverine habitats in the lower North Island which coincided with substantial population declines in several shorebird species. These declines serve as an early insight into the vulnerability of New Zealand shorebirds to extreme weather events, and to the impacts of human-induced climate change.

Towards standardised abundance and trend modelling for albatrosses and petrels

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Albatrosses and petrels are among the most threatened taxa on the planet, and since the mid-1900s, vast amounts of resources have been dedicated globally towards understanding their abundance and trends by counting birds at their remote breeding colonies. Despite this common goal, no standardised procedure exists to turn data points into information. This shortcoming is partially caused by highly variable counting methodologies, what is counted, and what sources of error are associated with counts. To be able to robustly estimate and communicate the trends of all albatross and large petrel species, a data processing and standardisation protocol is being developed. This protocol aims to overcome the idiosyncratic and disparate nature of these counts while incorporating uncertainty, and consists of an improved data structure, equations and models accounting for various errors, guided by a decision tree, and conversions that transform counts in number of breeding pairs to number of adults. I illustrate this protocol using three examples of contrasting Aotearoa (New Zealand) endemics: Antipodean albatross, white-capped albatross, and Westland petrel. Following the application of this protocol, data were in an appropriate state to facilitate standardised modelling of trends, while incorporating uncertainty. Results highlight the dramatic decline of Antipodean albatross, the large uncertainty surrounding trends of white-capped albatross, although, potentially, a shallow decline is becoming evident, and the long-term growth of Westland petrels. Combined, the results suggest the protocol is successful in paving a way forwards to standardise abundance and trends modelling for these challenging species, which will have major conservation consequences.

Ten years of The Seabird Trust: a research recap

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The Seabird Trust (Northern New Zealand Seabird Trust) was established in 2015 to undertake research, advocacy, and restoration of seabird populations in Northern Aotearoa New Zealand. Over the past ten years, the Birds New Zealand Research Fund has been integral in completing a number of research projects that have helped to better understand and conserve a variety of seabird species in the region. Huge volunteer efforts have been involved in gathering data to perform population estimates of rako / Buller's shearwaters and New Zealand storm petrels, monitor tara / white-fronted tern populations around Tīkapa Moana for 3 years, track kororā / little penguin foraging trips, undertake surveys of several Northland islands for shearwater species, and begin to use genetic tools to better understand the population of New Zealand storm petrels. In addition, the Trust has supported student and researcher seabird projects and assisted in the training of students and volunteers. This talk provides an overview of work to date, and where to next for The Seabird Trust.

The art of nesting: variations in nest construction among native passerines on Rēkohu, Chatham Islands

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Rēkohu is the largest island in the Chatham Islands group, with unique ecology characterised by a high number of endemic species. Small passerine species are abundant and are critical to the ecosystems on the island. This research aimed to increase ecological knowledge of small passerines on Rēkohu by investigating the nesting construction and materials of three native species: silvereye (Zosterops lateralis), Chatham Island fantail (Rhipidura fuliginosa penita), and Chatham Island warbler (Gerygone albofrontata). A total of 27 abandoned nests were collected from several sites across Rēkohu in February 2023 and analysed to examine the construction. This included determining shape, attachment style and lining style. Additionally, a list of vegetation taxa used in nest construction was compiled to provide preliminary information on the ecological area used by these birds, suggesting potential adaptions they have made due to environmental modification. Furthermore, environmental DNA was utilised to confirm the species ownership of nests. Findings indicate significant variations in nest construction between these three species, with each having a distinctive design. Native vegetation, such as Dicksonia fibrosa, was the most common vegetation found throughout all 27 nests. However, exotic grasses (Anthoxanthum odoratum and Holcus lanatus) were also used, suggesting a degree of adaption to areas cleared for farming. The findings reveal how different species of small passerines incorporate various vegetation into their nests and provides information on the comparison between nests of the same species. The insights from this research may lead the way for further studies to expand our knowledge of passerine nests.

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Bird brains and eyeballs: documenting cranial sensory features and UV detection by tube-nosed seabirds, shags and gannets (Procellariiformes and Suliformes)

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Seabird sensory ecology is tightly and reciprocally linked to behaviour and life history. The sizes of cranial sensory features are a useful proxy for species' relative investment in various sensory modes. Deeper investigation into sensory organs can reveal useful information about their function and effects on behaviour, e.g. the ability of the eyes to see ultraviolet (UV) light. Seabirds are phylogenetically diverse with considerable variation in their ecologies and lifestyles. The tube-nosed seabirds (Procellariiformes) are particularly sensitive to both natural and anthropogenic stimuli, e.g. scents and lights. Although many, but not all, bird taxa can see UV light, for many seabird species, this is unknown and untested. Here we document the cranial sensory features of 11 procellariiform species using micro computed tomography (micro-CT scans). We also record the ocular transmission of UV wavelengths through the eye lenses of eight procellariiform and suliform species. We show that the optic tectum (visual capacity) scales with body size, but the olfactory bulb (olfactory capacity) does not. Although some species appear to have a sensory trade-off, investing in one sensory mode more than another, several other species invested in both olfaction and vision equally. Finally, the eye lenses of most Procellariiformes, but not Suliformes, can transmit UV. This supports a strong phylogenetic component to UV vision in seabirds.

Fear responses in a threatened seabird: variation in flight initiation distance of red-billed gulls across an urbanization gradient

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Urbanization is a major land-use change that introduces novel disturbances and risks into ecosystems, requiring species to adjust their fear responses to avoid fitness costs associated with mismatched anti-predator behaviours. Successful urban species modify their flight responses to balance risk avoidance with maximizing access to human-associated resources. Here, we examined the impact of urbanization on escape responses in red-billed gulls (*Chroicocephalus novaehollandiae scopulinus)*, a nationally threatened species in New Zealand, using flight initiation distance (FID) as an indicator of boldness. We predicted that urban gulls would exhibit shorter FIDs than their rural and semi-urban counterparts, while juveniles and flocks would also display longer FIDs than adults. We recorded 705 FID observations across urban, semi-urban, and rural sites in Otago, New Zealand. Urban gulls exhibited significantly shorter FIDs, while semi-urban and rural gulls retained similar, longer escape distances. Within urban environments, FID varied across micro-habitats, with gulls in high-human-activity areas (e.g. commercial zones, parks, and beaches) displaying shorter FIDs than those in less disturbed areas (e.g., residential, industrial, and harbour sites). Age and social dynamics also influenced escape responses, with juveniles and flocks exhibiting longer FIDs than adults, though this difference diminished in urban settings. Urban gulls primarily used terrestrial escapes and anthropogenic refuges, while rural gulls relied on aerial escapes toward distant refuges. Our study suggests that the growing red-billed gull populations in urban areas are adapting their risk perception and escape strategies to human-modified landscapes, reinforcing their capacity to persist in increasingly urbanized environments.

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Status and trends in burrowing seabirds breeding at Bethells Beach, west Auckland, over 35 years

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A long-term monitoring programme on the burrowing seabird communities at Bethells Beach (Te Henga) started in 1989 and has followed breeding activity annually on Ihumoana and Kauwahaia Islands with >10,000 birds banded. These privately owned inter-tidal islands support a surprisingly diverse seabird community with five breeding species now confirmed: grey-faced petrels, sooty shearwaters, flesh-footed shearwaters, common diving petrels and fluttering shearwaters. The grey-faced petrel colonies on both islands increased over time; from 40 pairs in 1989 to 173 pairs in 2024 on Ihumoana Island but stabilised around 330 pairs on Kauwahaia Island then began declining in the past decade with attrition of burrows. The sooty shearwater colony was stable for 20 years until 2010, with up to 50 breeding pairs, then declined by 50–75%. Flesh-footed shearwaters however started with a few pairs in 1990 and increased rapidly before stabilising around 25 breeding pairs per annum. Common diving petrels built up breeding populations on both islands but have had numerous setbacks from predation by rats and stoats. Despite high adult losses they still show up each year. One pair of fluttering shearwaters recently bred on Kauwahaia Island but the species has been prospecting for 30 years. Additionally, two white-faced storm petrels have been seen prospecting but nesting is unconfirmed. There is a difference between colony growth rates and survival estimates for grey-faced petrels on Ihumoana Island with the colony increasing over time yet annual survival rates began dropping after 2005, with some big losses in breeding birds in recent years. The possible reasons behind these population changes for each species (invasive predators, nest competition, immigration rates, weed incursions, soil stability factors, at-sea foraging patterns and climate change impacts) will be covered in the talk. Some recent findings from tracking movements of different species will be briefly illustrated in the talk to show the importance of healthy marine environments for these species.

Assessing the conservation status of the birds of Tāmaki Makaurau / Auckland

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Species conservation status assessments are important for informing the prioritisation of limited conservation resources. They also provide a measure for reviewing change over time in how species are doing. The Department of Conservation regularly assesses the national conservation status of many taxa using the New Zealand Threat Classification System. While the national assessments are helpful for prioritising conservation management, research, monitoring and natural resource management decisions at a national scale, there are limitations in their use of informing these at a regional scale in relation to the statutory responsibilities of local government - including to manage the habitats of threatened species. A key requirement of managing threatened species' habitats and achieving recovery of threatened species is to have a good understanding of regional population sizes and know where declines are occurring. We undertook the first regional conservation status assessment of the bird taxa of Tāmaki Makaurau / Auckland, using the New Zealand Threat Classification System. We used the draft Regional Threat Classification System methodology developed collaboratively by the Department of Conservation, regional councils and a local authority. We identified a total of 230 bird taxa as present or occasionally present in Tāmaki Makaurau / Auckland. Here we present the results of our assessment and how these results are being used to inform Auckland Council's ongoing conservation work to protect and restore Threatened and At-Risk bird species in the region.

An update on the Miocene St Bathans fossil avifauna

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Since 2001, more than 8,000 bird fossils have been found in the 14–19 million year old Miocene deposits near St Bathans, Central Otago. They come from sediments associated with a huge palaeo-lake (Lake Manuherikia) that occurred in a notably warmer climate than today. The deposits have revealed by far the richest assemblage of freshwater and terrestrial vertebrates of pre-Pleistocene Zealandia and so provide a unique window into the biological history of Aotearoa New Zealand. At least 40 species of bird have been identified, with new discoveries still occurring annually. The known species include: two moa (Dinornithiformes), one kiwi (Apterygidae), ten geese and ducks (Anatidae), one palaelodid (*Palaelodus*), one pigeon and one dove (Columbidae), one owlet-nightjar (*Aegotheles*), one swiftlet (*Collocalia*), one adzebill (Aptornithidae), two rails (Rallidae), two waders and two gull-like species (Charadriiformes), one petrel (*Pelecanoides*), one heron and one bittern (Ardeidae), two raptors (Accipitridae), five parrots (Strigopidae), at least four songbirds (Passeriformes; including one Acanthisittidae wren), and one land bird of uncertain affinities (*Zealandornis*). The avifauna is dominated, both in abundance and diversity, by anatids. This is one of the most diverse pre-Pleistocene waterfowl faunas known globally. The St Bathans assemblage shows that many of New Zealand's unusual and iconic recent taxa (moa, kiwi, adzebills, Strigopidae parrots, and Acanthisittidae wrens) were already present in the Miocene. However, there are also significant differences, such as palaelodids and swiftlets that became extinct in pre-human times. Cooling climate is likely to be responsible for the loss of some groups.

Riders on the storm: coordinated movements of toanui in response to a passing storm

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Pelagic seabirds are known to use wind to move efficiently, often using the wind shear layer to dynamic soar, and travel immense distances using little energy. Shearwaters have been shown to make movement decisions based on wind direction and speed to reduce the energetic cost of movement to productive foraging areas. Here we show how GPS-tracked toanui | flesh-footed shearwaters from Ohinau exploit a passing storm to travel huge distances to productive feeding grounds. Birds tracked mostly showed consistent movement patterns, following the storm track for up to 2300 km east to the Louisville Ridge and beyond. Accelerometer data show that birds travelled almost exclusively via dynamic soaring during this time, very rarely flap-gliding compared to when they experienced headwinds or calmer conditions. This represents an extreme case of weather-driven animal movement and shows how tightly linked pelagic seabird distribution and wind fields can be.

Hidden in plain sight: genetic analysis of museum specimens confirms the presence of MacGillivray's prion in New Zealand and Australia

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Prions as a group are among the most difficult seabirds to identify. MacGillivray's prion (*Pachyptila macgillivrayi*) is next-level difficult, as its taxonomic history is a confusing mess (including being lumped with either broad-billed prion *P. vittata* or Salvin's prion *P. salvini*, before it was recognised as a full species). Long-considered confined as a breeding species to a tiny rock stack in the southern Indian Ocean, its extreme rarity likely contributed to it being overlooked by most field guides and handbooks. A geolocator tracking study of birds that had recolonised St Paul Island (3,300 km southwest of Australia) revealed that about half these breeding adults spent the 2018 winter in the Tasman Sea. As the species was not otherwise known from either Australia or New Zealand, we examined specimens of 'large-billed' beach-cast prions held by Te Papa and South Australia Museum. We identified specimens of MacGillivray's prion in both museum collections using a combination of genetic methods (cytochrome *b* and microsatellite loci) and bill measurements, thereby confirming that MacGillivray's prion should be added to both the New Zealand and Australian lists.

Interaction of kawau tikitiki/spotted shags with northern North Island set commercial net fisheries

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Kawau tikitiki (spotted shags) in the Hauraki Gulf are genetically distinct from other New Zealand populations and regionally threatened. Their population has declined from thousands to 250 breeding pairs within the last 50 years and continues to face an annual decline of 5–10 pairs per year. Since 2020, we have been tracking kawau tikitiki from their major breeding colony on Tarahiki Island in the Firth of Thames to study their inter-seasonal movements, habitat use, and at-sea threats. Bird-borne cell phone network-downloading GPS tags indicate that kawau tikitiki stay within the Firth of Thames and nearby waters year-round, shifting seasonally: using the southern Firth in spring and early summer, and moving north to the mussel farms and deep-water channels near Waiheke in late summer and winter. This study has shown that set net fishing is a major threat to kawau tikitiki, as the birds conduct hundreds of dives per day. At least two birds from 14 tagged individuals were drowned in nets during the study. Here, we summarise the work to date on this beautiful cormorant and report on recent CSP-funded research that seeks to understand the degree of spatial and temporal overlap between tracked kawau tikitiki and commercial set net fisheries in the Firth of Thames region, to inform bycatch mitigation and potential netting restrictions.

Speed talks

Urban owl project

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In this presentation I will discuss ruru / morepork (*Ninox novaeseelandiae*) that have nested in our garden within the Maungakiekie Songbird halo area. This has inspired a project with partners Maungakiekie Songbird Trust, One Tree Hill College and the Tupuna Maunga Authority to help urban ruru across Auckland. Kevin and Olga's back garden is a small remnant patch of trees in a neighbourhood which has suffered a significant loss of habitat. Kevin built and installed two nesting boxes in 2021/2022. Over the last two summers ruru have bred and fledged chicks in this small garden. The success of these urban ruru in our garden was seen as a good opportunity to link with Maungakiekie Songbird and Year 10 technology classes at One Tree Hill College. The aim was to raise awareness of urban ruru, highlight the importance of habitat and to build more than 50 ruru nesting boxes for installation around Maungakiekie and the wider Auckland Isthmus. It was also an opportunity to form a connection between local students and Auckland's birdlife.

Banded dotterel migration patterns: embarking on a resighting project together

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Banded dotterels/Pohowera (*Anarhynchus bicinctus*) exhibit a wide range of seasonal migration patterns, from staying on their breeding ground throughout the winter, to migrating across the Tasman Sea to Australia or New Caledonia. Widespread colour banding and resighting work in the 1980s by the Banded Dotterel Study Group (BDSG) of the OSNZ (now Birds NZ) and the Victoria Wader Study Group (VWSG) revealed varying patterns of movement by different breeding populations around New Zealand. This ground-breaking work still forms the basis of our understanding of migration in banded dotterels. However, fifty years on, conditions faced by the species have changed in ways that may impact the cost-benefit ratio of staying put versus migrating. A collaboration between the Department of Conservation and the Department of Ornithology at the Max Planck Institute for Biological Intelligence now aims to extend the early research and investigate the current migration patterns of the species. The Banded Dotterel Flyways Project began colour banding in the 2020 breeding season and is now calling for public engagement in expanding resighting efforts. This presentation introduces the project, shares resighting data collected so far, and touches on the project's value in the context of the conservation of one of New Zealand's highly mobile terrestrial species.

Using accelerometery to classify at-sea behaviours of breeding seabirds

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Marine heatwaves are increasing in frequency and severity, potentially impacting the energetic costs and breeding success of seabirds. However, quantifying energy expenditure in small, wide-ranging species remains challenging. This study presents the first step toward building a comprehensive time–energy budget for the common diving petrel (*Pelecanoides urinatrix urinatrix*), using accelerometery—a world-first application for this species. We fitted breeding diving petrels in the Hauraki Gulf with tri-axial accelerometers set to record at 50 Hz. From this, we classified four key behaviours including flight, diving, resting at sea/burrow which are expected to differ markedly in energetic costs. Breeding birds exhibited the following daily time-energy budgets: rest at burrow (24.7% of time), flying (11.8 % of time), diving (28.2%) and rest at sea (35.3%). The copious levels of diving show this species truly deserve the 'Diving petrel' moniker, with an average dive depth of 0.425 m and a maximum recorded depth of 5.99 m. These foundational results establish the basis for integrating accelerometery with the doubly labelled water method later this year to directly quantify daily energy expenditure. By correlating accelerometer-derived behaviours with doubly labelled water measurements of energy expenditure, we aim to validate a dynamic body acceleration model across the breeding season. This will provide the first

high-resolution energetic dataset for a New Zealand seabird, offering insights into physiological responses to stressors like marine heatwaves. Our scalable, cost-effective method supports conservation planning and resilience in Aotearoa's vulnerable marine ecosystems.

MSc student

A drone survey of a naturalised population of emu on Rēkohu / Wharekauri / Chatham Island, Chatham Islands

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Species monitoring and surveying is strongly limited by habitat accessibility. A naturalised population of feral emu (*Dromaius novaehollandiae*) that has established from five birds that were deliberately released on Rēkohu / Wharekauri / Chatham Island more than 30 years ago has not yet been quantitatively assessed with respect to its population number and status. To address this issue we conducted a short manual UAV (drone) survey of a portion of the area where this population is said to be concentrated. In 303 minutes of flight/survey time over 5 days (January 2025), a total of 70 observations of emu were made, including 45 adults and 25 juveniles, with catch per unit effort calculated to 13.5 emu observations per drone hour. The most observations in a single day included a total of 28 individual birds, 17 adults and 11 juveniles. The largest flocks of emus were six individuals, three adults with three juveniles and another flock of an adult with five juveniles. There is a need for a more detailed investigation into the ecology of this population to ascertain the potential impact emu may have on the farmland and associated indigenous terrestrial ecosystems on Rēkohu / Wharekauri / Chatham Island. Emu have also been released in several locations in the two main islands of Aotearoa / New Zealand, and we advocate for similar studies there.

New tech in conservation research – transforming fieldwork with Multi-Track aerial wildlife tracking

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Locating and monitoring birds and other wildlife is challenging, particularly in difficult terrain and forested landscapes. GPS and satellite technology can struggle to obtain positions if their view of the sky is obstructed, and these devices are often better suited for tracking larger species. VHF radio telemetry has been used for wildlife tracking for many decades, and works well even under dense canopy. However, traditional receivers have some limitations including single-frequency tracking, triangulation, and no data-logging capability. In this talk, we discuss Multi-Track receiver technology, a revolutionary advancement in VHF radio telemetry which enables the simultaneous monitoring of 500 frequencies, eliminating the need for sequential scanning. It automatically determines positions without requiring triangulation, enabling tracking while in motion without the requirement for hovering and rotating on the spot, and it exports position data for spatial analysis and longitudinal comparisons. We explore several case studies and discuss the advantages of aerial tracking using Unpiloted Aerial Vehicles (UAVs), as well as piloted aircraft. We highlight the increased speed, safety, and efficiency of fieldwork, as well as the support for fully-automated searches. Through comparisons with other sensor technologies such as visual and thermal imagery, we demonstrate the efficacy of Multi-Track receivers in locating cryptic species. In this talk we provide insights into the transformative potential of advanced aerial tracking technologies for conservation research and wildlife management.

Adaptive management improves the hatching rate and breeding success of the northern New Zealand dotterel

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The northern New Zealand dotterel/tūturiwhatu (*Charadrius obscurus aquilonius*) is endemic to New Zealand, with an estimated 2,130 individuals remaining. Dotterels are threatened by coastal development, introduced predators, and disturbance, and site management is key to their conservation. Motuihe Island/Te Motu-a-Ihenga, pest-free since 2005, was identified as a priority site for dotterel management. Dotterels breed regularly on Motuihe Island, with past records of eight breeding pairs producing an average of 1.22 fledglings each. Our project aims to collect updated baseline information about the breeding activities of dotterels on Motuihe and to understand the reasons for breeding failures to inform management strategies. We monitored dotterels over two breeding seasons from 2023 to 2025. During each survey, five beaches on the island are checked for breeding activity, such as defensive behaviour, nests, eggs and/or chicks. In the first breeding season (2023/24), we observed breeding attempts from three pairs, but no chicks survived to fledge. In the second breeding season (2024/25), we introduced three key initiatives: installing a trail camera to capture threats to eggs and chicks, moving nests at risk of inundation by tides, and implementing nest shelters to increase protection from avian predation. The Birds New Zealand Projects Assistance Fund supported these initiatives. With the implementation of these initiatives, hatching rate increased by 2.5 times from the previous season to 0.74 in 2024/25, and six chicks survived to fledge. Our results suggest that our initiatives helped improve breeding success and demonstrate the effectiveness of adaptive management practices.

* PhD student

Posters – alphabetical order surname

Wintering distribution and ecological factors of barn swallows in southern Kyushu, Japan

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Barn swallows migrate to Japan in spring for breeding, with most individuals wintering in Southeast Asia. However, some have been recorded overwintering in southern Kyushu, particularly in Miyazaki and Kagoshima Prefectures. Large-scale studies on this phenomenon remain scarce, and the factors enabling their overwintering are still unclear. In this study, I aimed to identify the ecological factors that allow barn swallows to overwinter beyond their typical wintering range. I surveyed the distribution of wintering swallows in southern Kyushu and analyzed climatic characteristics such as temperature, wind direction and strength, humidity, frost days, and sunshine duration. I also investigated land use and food resources. To analyze diet composition, I identified roosting sites and collected faecal samples. DNA metabarcoding revealed a high occurrence of flying insects associated with riverine environments. This finding was consistent with the observed distribution of wintering swallows, which were predominantly found around rivers and agricultural landscapes. Similarly, in New Zealand, welcome swallows, originating from Australia, have successfully established in river-centred environments. My findings suggest that stable food availability from aquatic insect communities plays a crucial role in enabling barn swallows to overwinter in southern Kyushu. By examining land use, climatic characteristics, and food resources, I have clarified the key factors contributing to their wintering distribution.

* PhD student

Feather forecast: unpredictable with a chance of breeding failure

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Sooty shearwaters, or tītī, are native to Aotearoa, but their foraging and migratory behaviours take them all over the Pacific Ocean. As is the case for many seabird species, tītī are under threat from climate change. Unfortunately, due to their far ranging and isolated habitats, identifying which oceanic processes and patterns are having the greatest impact is challenging. Tītī have great site fidelity and raise a single chick each year. As tītī are prudent parents, their chicks often bear the costs of reduced food availability and unfavourable ocean conditions. This study used GPS tracking of seabirds on Mana Island to identify the Chatham Rise as a potentially important foraging ground for this colony. Chicks from Mana Island were measured in 2023 and 2024 to assess differences in development. In 2024, chicks had on average shorter wings, and greater variability in wing length across the colony. This suggests poorer ocean and foraging conditions in 2024 compared to 2023, and coincided with a decrease in chlorophyll-a on the Chatham Rise derived from satellite imagery. This data highlights the vulnerability of tītī to changing ocean conditions, and identifies a need for more data to identify specific oceanic processes driving tītī breeding success to allow us to forecast how continued climate change might impact this taonga species.

* Student

Using accelerometery to classify at-sea behaviours of breeding seabirds

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Marine heatwaves are increasing in frequency and severity, potentially impacting the energetic costs and breeding success of seabirds. However, quantifying energy expenditure in small, wide-ranging species remains challenging. This study presents the first step toward building a comprehensive time–energy budget for the common diving petrel (*Pelecanoides urinatrix urinatrix*), using accelerometery—a world-first application for this species. We fitted breeding diving petrels in the Hauraki Gulf with tri-axial accelerometers set to record at 50 Hz. From this, we classified four key behaviours including flight, diving, resting at sea/burrow which are expected to differ markedly in energetic costs. Breeding birds exhibited the following daily time-energy budgets: rest at burrow (24.7% of time), flying (11.8 % of time), diving (28.2%) and rest at sea (35.3%). The copious levels of diving show this species truly deserve the 'Diving petrel' moniker, with an average dive depth of 0.425 m and a maximum recorded depth of 5.99 m. These foundational results establish the basis for integrating accelerometery with the doubly labelled water method later this year to directly quantify daily energy expenditure. By correlating accelerometer-derived behaviours with doubly labelled water measurements of energy expenditure, we aim to validate a dynamic body acceleration model across the breeding season. This will provide the first high-resolution energetic dataset for a New Zealand seabird, offering insights into physiological responses to stressors like marine heatwaves. Our scalable, cost-effective method supports conservation planning and resilience in Aotearoa's vulnerable marine ecosystems.

MSc student

Population modelling of the critically endangered Chatham Island tāiko

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The Chatham Island tāiko *Pterodroma magentae* has been intensively monitored since the species' rediscovery in 1978, however, the difficulty of finding burrows at its breeding grounds on the main Chatham Island, New Zealand, has always been a limiting factor to the estimation of the species population size and vital rates. To overcome this obstacle we used the long-term capture-recapture and breeding monitoring datasets to develop three models, a multievent capture-recapture model, a productivity model, and a state-space model, which were combined in one integrated population model (IPM) that accounts for differences between sex, stages of the species life cycle, and conservation methods (i.e., predator control vs predator-proof fence). Results from the IPM showed a steady increase of the overall population, from 68±13 birds in 1994 to 309±41 in 2022. Survival and productivity were consistent over the years. Adult survival was similar between sexes and high for both birds with burrows protected by predator control (Females=93.4%, 95% CI: 90.6–96.2%; Males=93.9%, 91.6–96.2%) and burrows within the predator-proof fence (F=98.0%, 88.9–100%; M=97.4%, 92.9–100%). Juvenile survival was also high (F=97.1%; 88.9–100%; M=94.1%, 87.4–99.6%). The overall breeding probability (predator control=85.2%, 81.7–88.7%; fenced=76.1%, 61.6–86.2%) and breeding success (pred. cont.=70.2%, 65.3–75.0%; fenced=78.7%, 66.7–88.6%) were not significantly different across management methods. This model will further be used to investigate the effect of environmental variables on the species' vital rates and population trend.

* PhD student

Applications of genetics and genomics for conservation management of Aotearoa New Zealand birds

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To achieve Aotearoa New Zealand's national strategy for biodiversity, Te Mana o te Taiao, diverse and innovative approaches are required to protect, restore, and enhance our biodiversity for the future. One tool in the conservation toolbox is genetic and genomic data, used to understand evolutionary relationships and underlying genomic factors that may influence the extinction risk of threatened species. Incorporating this knowledge alongside other aspects of conservation biology builds a deeper understanding of

conservation need, and supports robust, evidence-based management strategies for threatened species. Here I present case studies from three threatened Aotearoa endemic birds: karure (Chatham Island black robin, *Petroica traversi*), kakī (black stilt, *Himantopus novaezelandiae*), and kuaka Whenua Hou (Whenua Hou diving petrel, *Pelecanoides whenuahouensis*). Data ranging from small genetic microsatellite marker sets for black robins, mid-sized marker sets derived from reduced-representation sequencing for kakī, and large marker sets from whole-genome sequencing for kuaka Whenua Hou have been used to resolve questions around genetic diversity and interspecific hybridisation. Results of these studies have been used to inform conservation management strategies for all three species.

Spectastiq: a new open source spectrogram viewer for bird call audio

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Automatic machine recognition of birdsong is becoming more important as a means of detecting presence/absence of bird species and monitoring bird populations. Machine learning models for recognising calls are now well established but these models are only as good as the training data they are supplied. Creating tagged training data is time consuming and requires expertise on the part of the person making classifications. We present Spectastiq, a free and open source web component for interactively visualising audio spectrograms in a web browser without any additional infrastructure required. This tool is designed to work quickly and efficiently even on relatively low-end phones, tablets and laptops. Spectastiq forms a basic building block to create a system that allows users to tag and classify bird calls, primarily to help build up a comprehensive and high quality training data set. This is critical for creating improved bird recognition machine learning models. Spectastiq can also be used to easily embed an interactive spectrogram on your website and allow you to demonstrate unique or interesting characteristics of certain bird calls or songs.

Population estimates and trends for toanui/flesh-footed shearwater on Mauimua/Lady Alice Island and Ohinau Island

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Toanui/flesh-footed shearwater (*Ardenna carneipes*) are a native seabird with breeding colonies found on islands off the coast of northern Aotearoa New Zealand and in the Marlborough Sounds. Outside Aotearoa, colonies also occur off Australia and on St Paul Island (Île Saint-Paul) in the Indian Ocean. Populations are thought to be in decline globally. Wildlife Management International Ltd. have conducted population surveys on Mauimua/Lady Alice Island (off the coast of Whangarei) in 2019 and 2024 and Ohinau Island (off the Coromandel Peninsula) in 2018 and 2024. The island-wide estimated breeding population size (estimated number of breeding pairs) has decreased by 4.2% and 26.4% on Ohinau and Lady Alice, respectively. Dropping from 3,884 (2,060–5,715, 95% CI) to 3,722 (1,870–5,504 95% CI) breeding pairs on Ohinau and 3,217 (2,180–4,255, 95% CI) to 2,367 (1,431–3,303, 95% CI) breeding pairs on Lady Alice. In 2025 we carried out repeat surveys of one sub-colony on each island. These repeated population surveys estimate the number of breeding pairs in the sub-colonies have declined by 43.7% (Ohinau) and 51.8% (Lady Alice) since the first population surveys were carried out. Our surveys highlight a potential worrying trend for this species at these two islands. Continued monitoring at study colonies and frequent population surveys are recommended to understand the trajectories and potential changes of the populations and the species as a whole.

Conservation milestones from monitoring tāiko/Chatham Island taiko at the Tuku Nature Reserve, Chatham Islands

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Tāiko/Chatham Island petrel (*Pterodroma magentae*) are one of the rarest species of seabird on the planet with a fascinating ornithological history. The breeding population was virtually unknown to science until its rediscovery on 1 January 1978 by a group of amateur ornithologists and local landowners, led by David Crockett in the Tuku-a-tamatea (Tuku) Valley, south-west Chatham Island. Since then, the species had received considerable conservation action through Tāiko Expeditions, the Department of Conservation, the Chatham Island Tāiko Trust and Wildlife Management International Ltd. The establishment of a 2.4 ha predator-free enclosure around an old colony site on Murphy's Hill, now known as Sweetwater Covenant, has facilitated a dramatic increase in the population in recent years. Survival and return rates of chicks fledged from Sweetwater have been high and the population within the predator fence has built up rapidly to about half the known breeding population. Work now focuses on trying to expand the area of predator control, maximising productivity through intensive management, finding new burrows, and trying to capture as much genetic diversity as possible in the Sweetwater population. This work represents a significant partnership approach to conservation issues in the Chatham Islands and is a milestone in community driven conservation on these islands. Here we report on key outcomes from over a decade's worth of monitoring work on this enigmatic, yet still nationally critically threatened species.

Deterrence and Diversion: Investigating New Ways of Managing Aotearoa's Swamp Harrier (Kāhu) in Sensitive Areas

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As invasive predator control becomes more effective in Aotearoa, a higher proportion of predation risk to native breeding birds and their chicks now comes from native avian predators such as the Australasian Harrier Hawk (*Circus approximans* - Kāhu) and Southern Black Backed Gull (*Larus dominicanus* - Karoro). Current management strategies for Kāhu include relocation and culling which are both costly and labour intensive, as new nomadic birds quickly replace those that have been removed. Recent advancements in conservation best-practice and drone technology have provided alternative, non-lethal strategies to potentially manage Kāhu around key conservation areas. This study will investigate two novel management strategies: 1. Supplementary feeding at Kāhu nests. This approach aims to meet the nutritional needs of Kāhu thereby reducing predation on local nesting birds. 2. Use of conventional drones vs Bird-mimicking drones (e.g. 'Rofalcon'). This aims to deter Kāhu from hunting in select sensitive areas. These strategies have the potential to make avian predator management more ethical, time efficient and cost effective, compared to the current routine culling methods. Successful implementation of either approach could significantly aid conservation efforts for species such as The New Zealand Fairy Tern (*Sternula nereis davisae* - Tara iti), New Zealand's (NZ's) most endangered bird, which is vulnerable to Kāhu predation.

*MSc Student

Stick It to Erosion: Protecting New Zealand Fairy Tern Nesting Sites Using A Biopolymer Sand Stabilization Method

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Weather events can negatively impact shorebirds through delayed breeding, increased chick and egg mortality, or adult deaths. This study investigates the impacts of weather-related sand movement, focusing on the risk of nest burial caused by sand erosion and accretion, a common yet difficult-to-manage threat to shorebirds. This issue is particularly important for the critically endangered New Zealand Fairy Tern (*Sterna nereis davisae*), whose nesting success is severely limited by small population size, habitat loss and disturbance and egg and chick mortality. The project explores the potential use of an acacia gum biopolymer as a biodegradable,

environmentally friendly adhesive to stabilise sand, control wind erosion and reduce the risk of nest burial. Artificial nest scrapes were established in treatment and control plots at the Waipū Estuary Wildlife Reserve, Northland, one of four nesting sites for the species. The study examines the impact of the biopolymer treatment on the burial rates of these scrapes under natural weather conditions. Preliminary analysis indicates little evidence that burial status or rate differed between treated and control plots. However, graphical summaries indicated small differences, with control plots more frequently exhibiting partial or full burial but generally taking longer to reach buried states than treated plots. The subtle trends observed in this study, combined with prior experimental laboratory evidence, suggest that biopolymer treatment may offer condition-dependent benefits. If validated under field conditions, this novel tool could have broad applications, such as simplifying the maintenance of trap lines in sandy environments.

Seabird plastic ingestion: species-specific patterns?

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Plastic pollution is a major global issue affecting many species. Annual global production of plastics has increased nearly 200-fold since 1950. Seabirds are highly vulnerable to global plastic pollution and ingestion of plastics, with threatened seabird species appearing disproportionately affected. The effects of ingestion include starvation, internal injuries, false satiation, and reduced fitness. Current research primarily focuses on exposure risk, i.e., the quantity of plastic in their typical habitat or distribution. However, even species in the same areas can vary in plastic ingestion, suggesting other factors at play. Tāmaki Makaurau/Auckland and the Hauraki Gulf region is a globally critical seabird hotspot, used by 88 seabird species, representing 23% of the world's species of this very at-risk group, with five species breeding nowhere else. This location enabled us to compare specimens from a wide range of species, which is not feasible in many other regions. Here, we report on plastic ingestion incidence from a preliminary dataset of approximately 15 species from 12 genera of seabirds. We investigated this by dissecting dead seabirds, examining their proventriculus and gizzard for plastics, recording the amount, mass, colour, types, and sizes of plastics, and noting body morphometrics, sex, body condition, and dehydration. We predict that species-specific differences in plastic ingestion may be explained by the diversity of morphological, ecological, and sensory traits across seabird species. This study can provide

crucial insights into plastic pollution, seabird health, and the factors contributing to plastic ingestion, ultimately leading to more informed conservation initiatives.

* MSc student

Penguins of New Zealand

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While working as a DOC Duty Officer, I realised there was a huge gap in the knowledge out there, in the wider world, when it came to identifying the six species of penguins we find here in New Zealand, especially the four crested penguin species that grace our shores – to moult - over the summer. I felt that if there was a resource out there that would help people correctly identify the penguin species they came across, the information passed on to the first responders would be more accurate and the response to the calls could be more targeted. This poster was created primarily as an educational tool. Information on poster provided by Megan Abbott (Biodiversity Ranger – Department of Conservation, Dunedin) and collated from NZ Birds Online (https://www.nzbirdsonline.org.nz/) and Birds of the World (https://birdsoftheworld.org/bow/home). Images captured at Blue Penguins Pukekura (https://www.bluepenguins.co.nz/) and the OPERA (https://theopera.co.nz/).