

Pūkorooro Miranda News

Journal of the Pūkorooro Miranda Naturalists' Trust

May 2024 Issue 132



Editorial

Pūkorokoro featured on the cover of Forest & Bird’s Autumn magazine – for an entirely unwelcome reason. A trail bike rider on the shell bank is riding through a flock of oystercatchers. An undesirable activity at any time, the location of this incident is totally unacceptable. Outrageous even, given the status of this place, renowned globally for its biodiversity values.



It brings into sharp focus an issue that has long been a source of concern. Much of the intertidal zone of southern Tikapa Moana Firth of Thames is listed as a wetland of international importance under the Ramsar Convention. It is also listed as an East

Asian-Australasian Flyway Network (EAAFN) site. One of the roles of the Shorebird Centre has been to host and help facilitate research. Recent work by an international consortium of researchers tracking Bar-tailed Godwits, generated colossal interest around the world. PMNT assisted with that work. So the area is incredibly important. And well protected, right?

Well yes and no. Both the Ramsar and EAAFN designations are nominal: real protection needs to be mandated and enforced by both national and local government. Which is where we are not performing as well as we should be.

Shorebird habitats are contiguous with regional and district boundaries. Most shorebirds forage over the mudflats at low tide, which is in the Coastal Marine Area (CMA) within the jurisdiction of Waikato Regional Council. During high tide they roost along the shoreline, which is also where species such as New Zealand Dotterel and Variable Oystercatcher nest, locations that may be on the Findlay Reserve or elsewhere in areas that fall within the jurisdiction of Hauraki District Council or DOC. But as reported in the last issue, the key request in our submission to the Waikato Regional Coastal Plan was for official recognition of just how unsatisfactory this is.

As well as dotterels and oystercatchers, Black-billed Gulls and White-fronted Terns also nest on the shell bank. At any time of the year the big shorebird flocks may be roosting there, along with others, such as Caspian Terns, shags and Royal Spoonbills. Roosting birds are particularly

vulnerable to disturbance. Of particular concern is inappropriate access to the coast and shell spit. The incident with the trail bike rider was just one of several recently: a 4WD vehicle was also seen on the shell bank.

The high biodiversity values of the area are recognised in documents like the New Zealand Coastal Policy Statement, the Waikato Regional Coastal Plan (RCP), which recognises the Pūkorokoro Coast as a Significant Natural Area (SNA), and district council bylaws, although the latter are geared towards protecting people. So a degree of protection does exist. But we need multi-agency cooperation and enforcement of laws and by-laws. The National Policy Statement of Indigenous biodiversity (NPSIB) requires Regional Councils to record areas outside SNAs that are highly mobile fauna areas. When it comes to shorebirds, the Findlay Reserve and adjacent coastline are clearly highly mobile fauna areas.

PMNT has a role, and is in a good position to assist with improving the situation. Advocacy for shorebirds and their habitats is one of our core aims. We are on site and we have our kaitiaki rangers. But their work monitoring the reserve and its surrounds, needs to be fully supported. We need confidence that agencies responsible for protecting this area will act to implement and enforce legal restrictions and bylaws, or any other measures that may be needed.

We are organising a meeting of relevant agencies and iwi to work towards achieving this objective.

Keith Woodley

EVENTS CALENDAR 2024

Sunday 19 May 10am AGM Guest speaker Dr Emma Williams: The Status of Bitterns

Sunday 30 June Firth of Thames Winter Wader Census

Saturday 17 August: Working Bee and Potluck Dinner

13-15 September Printmaking Workshop with Sandra Morris

Saturday 12 October Welcome to the Birds Open Day
Guest speaker Clare Fearnley, former New Zealand Ambassador to China and South Korea

Sunday 3 November Firth of Thames Summer Wader Census

15-17 November Wader ID Course

12-18 January 2025 Field Course

Please contact Chelsea admin@shorebirds.org.nz

Recent sightings at Pūkorokoro

810 Bar-tailed Godwits	371 Red Knots
3 Sharp-tailed Sandpipers	1 Pectoral Sandpiper
9 Turnstones	1875 Wrybill
1044 Pied Stilts	82 Banded Dotterels
75 Royal Spoonbills	109 Caspian Terns
4300 South Island Pied Oystercatchers	
30 New Zealand Dotterels	
(at a flocking site near Kaiaua)	

Shorebird Snippets

Bird Items

There were several interesting things about Widgey Lake this summer. Most years it dries completely, reduced to a bed of cracked mud. White-faced Herons could probe in the crevices seeking out items such as small, stranded eels. But this year it did not completely disappear. We had sufficient rain to maintain shallow water over at least a third of the lake area. Two Pied Stilts became a daily presence, confirming we were in fact a Shorebird Centre. A few times we had a Royal Spoonbill stop by, and on one occasion there were four of them. One sunny morning at the beginning of April we watched one forage for about 20 minutes. What it was taking could not be determined, but whatever the prey there appeared to be plenty of it, for the bird seemed to be successful every few seconds.



Spoonbill near the edge of Widgey Lake KEITH WOODLEY

Normally there is a good suite of Arctic waders on show at Pūkorokoro. This year however, while knots and godwits, and Pacific Golden Plovers were reliable enough, much of the small stuff remained elusive. In past years you could all but guarantee seeing a few Sharp-tailed Sandpipers, but this season they were rarely recorded – seeming to prefer Piako. From time to time a Red-necked Stint would be reported, but these too were erratic sightings. Even Ruddy Turnstones, known to be present on the coast, were only occasionally seen. All of which made the discovery, in late March, of a Great Knot most welcome.



Great Knot STEVE GROOBY

Although slightly bigger than Red Knots, they can often be overlooked among a flock. They breed in northeastern Russia and winter in southeast Asia and northern Australia. Great Knot was the species perhaps most impacted by the development of Saemangeum in South Korea. The destruction of the combined estuaries of the Mangyeong and Dongjin Rivers removed their major stopover fueling site during northward migration. Between 2006 and 2008, the global population declined by 22 per cent. A rare straggler to New Zealand, there are about 12 records for Pūkorokoro.



Great Knot STEVE GROOBY

In the 1990s the general migration strategies of Bar-tailed Godwits were not well known. Today, thanks to a network of researchers – in this country primarily Jesse Conklin and Phil Battley – we understand the strategies of individual birds over multi-year periods. 4BBRW for instance, banded in 2019, has now been tracked through four complete migrations. But there is more to come, because in early April he arrived on the Geum Estuary in South Korea, for the fifth year in a row. We shall need to wait until September to learn if he completes this fifth migration.



W4BBRW at Seocheon, South Korea JU YUNG-KI



Our kaitikai rangers are delighted with recent improvements to the functional value of their work space. Thanks to Adrian Riegen and Peter Fryer there is now a sheltered entrance to the cabin.
KEITH WOODLEY



A happy U3A group with their guide Chelsea Ralls (centre)

Lynda Underhill 1926-2024



Lynda Underhill

For most of my time at the Shorebird Centre Lynda Conyngham was a valued member of our Pūkoro-roko family. I met her shortly after I arrived in 1993. Then unmarried, she and several friends would come and spend Christmas at the Centre. I joined in what became a tradition, which continued for several years. But then her life changed significantly. She had met and married Alan Underhill.

And it was abundantly clear that she was very happily married. Soon the two of them were regular visitors, often spending extended periods as resident volunteers.

Their assistance was immensely valuable to me, and I enjoyed their visits. And their travel yarns - for those stints assisting at the Centre had to fit between trips abroad. For a few more years after Alan died, she continued to relieve at the Centre. She also continued her travels, in which the beaten track did not always feature. For that is one of the qualities I shall remember of Lynda: adventurous and intrepid. She was also a deceptively sharp observer of people. I did not get to see her in recent years, though I do remember her visit to Pūkoro-roko soon after she turned 90. For she had just bungee jumped off the Sky Tower. Did I say Intrepid?

Wendy and Alan

We are extremely grateful to Australian-based members Wendy and Alan Pilkington for their assistance with our operations over summer. They were in residence here in their campervan for 10 days over Christmas-New Year, and then for all of February. Wendy staffed the shop and kept our administrative processes up to date while Alan was the shore guide, both immensely valuable tasks. Indeed, Chelsea and I felt rather spoiled by it all.



R-L Alan Pilkington, Wendy Pilkington, and their God-daughter Cassandra Mealey HELEN CLAYSON

David Baker on Taranaki



David Baker and Helen Baker near the summit of Taranaki HELEN BAKER

A long time supporter of PMNT, in the 1990s David Baker and his wife Helen lived at Waharau. When I arrived at Pūkoro-roko, David was the contractor who mowed the lawns at the Centre. As much a feature as his ride-on mower, would be the inevitable cheery grin and wave as he passed by. In February the Plains Profile published an account of his latest exploit.

Use it or lose it has always been the attitude of Ngatea nonagenarian David Baker. Not only has the 90-year-old made good use of his legs throughout his life, traversing tracks overseas and throughout NZ, he has now become the oldest known person to have ever reached the summit of Mt Taranaki (2518 m).

He climbed the peak alongside his wife Helen, 71, and family for his birthday celebrations in January. It was both a mental and physical challenge spurred on by a fundraiser for Starship.

‘For the last five or six month Helen and I have been working towards it: we knew how hard it was going to be.’ It took 12 hours to ascend and descend the mountain.

They lived at Waharau before moving to Ngatea eight years ago. He was responsible for 400 bait stations in the Waharau Regional Park, a steep climb he said, kept his heart rate up. But things were different on the Hauraki Plains.

‘Ngatea is so flat ‘ he said, ‘ so what I do every day besides my walk, is go up and down the steps at the pavilion for 15 to 30 minutes. Thirty minutes is my record, that’s 90 times walking up and down 15 steps – and that’s the reason when I came off the mountain, the next day there were absolutely no muscle twinges. Nothing.’

Bird Girl: Discovering the Power of Our Natural World by Mya-Rose Craig.

2023 Penguin Random House

Among the steady stream of new titles arriving in the shop recently, this one caught my eye. There are now quite a few books out there recounting individual birding experiences. Mark Cocker's *Birders: Tales of a tribe*; *The Big Twitch* by Sean Dooley; and *The Big Year* by Mark Obmascik (later made into a feature film starring Steve Martin and Jack Black) are just three. In *Kingbird Highway*, (1997) Kenn Kaufman tells how, in January 1972, he dropped out of school at 16 and hitch-hiked back and forth across America in search of birds. He was doing a Big Year, a quest to see at least 600 species before the end of December. *Bird Girl* is quite different to all of these. The author of *Bird Girl* was only 6 when she started out birding.

She is just 21, but already Mya-Rose Craig has spent a lifetime birding. She describes how her parents met in an underground music club in Bristol. Her father Chris, came from a 'background of hunt-sabotaging, animal rights and environmental activism; he was also, and most significantly, a birder.' Her mother Helena was from the Bangladeshi community, worked in a law firm and was definitely not a birder. But she was to become one. And a very keen one.

So, from the very beginning, daughter Mya-Rose was also destined to take the same path. 'Birdwatching has never felt like a hobby,' she writes: 'it's not a pastime I can pick up and put down, but a thread running through the pattern of my life, so tightly woven that there's no way of pulling it free and leaving the rest of my life intact.'

It made her stand apart at school. After a weekend away with her family to see a Sandhill Crane on the Orkneys, a return drive the length of Britain, she describes returning to school in Bristol on Monday. "Do anything much this weekend?" asked the teacher. "No Miss." And so began the fracturing of my worlds: twitching with my family was one thing and my life after school with my friends was another. I wasn't aware of this gradual separation, but there was something vaguely overwhelming about the idea of having to explain to others why Mum, Dad and I dropped everything at the bleep of a pager.'

There followed a succession of birding trips around Britain and overseas: South America, Africa, Antarctica, Queensland and California. But while accounts of these expeditions and the spectacular birds encountered are fascinating, it is quickly evident that this is more than a book about birding culture. All her life, Helena Craig has battled mental illness: her bipolar disorder was not diagnosed until she was in her forties. Her manic and depressive episodes formed a constant backdrop to Mya's life, and to those birding trips. But organising those trips, and her own keen interest in seeing new birds, made them immensely helpful to Helena. And to her family.

'While Mum usually thrived on our holidays, her illness came with us, ever present. Our desire to see the birds is what drove us, and we proved that being in nature helped both Mum and Dad. While travelling had never provided a solution to Mum's bipolar or Dad's coping mechanisms, it had massively improved our lives together. Today, we have no expectations that travelling or anything else is going to make Mum's mental health situation go away but we are better as a family when we do it. Most importantly, our trips shore up the rest of our lives; the birds tend to linger around long after we have walked out of the rainforest, left the savannah or climbed off the boat.'



But there is something else which sets this story apart. For Mya, those birding expeditions became a window on the world and its acute problems. And a path to activism. For instance, she observed how deforestation was destroying not only biodiversity, but also impacting the lives of local people. How climate change posed risks to everything. Her own background also revealed to her how monocultural birding, and most environmental and conservation activism, tends to be. At fourteen she founded Black2Nature to engage minority ethnic teenagers in nature. And at seventeen she became the youngest Briton to receive an honorary doctorate, awarded by Bristol University for this pioneering work. She has since joined the likes of Greta Thunberg, promoting global climate justice.

So there is much more to *Bird Girl* than just birding. Perhaps Margaret Atwood says it best, calling this fascinating book 'lyrical, poignant and insightful.' Exactly.

Keith Woodley



The Piako Roost

Keith Woodley reports on progress in securing shorebird habitat at Piako.

A glimpse into the future of coastal farming: the remains of a hay barn prove useful to Royal Spoonbills and White-faced Herons. The flood breach and Piako River can be seen in the background. WAIKATO REGIONAL COUNCIL

For those of us in the Shorebird Centre at the time, the events of Friday 5, 2018 remain indelibly etched in the mind. The tail end of a tropical cyclone and a king tide conspired, that morning, to bring the Firth of Thames to our doorstep. The crisis passed, the tide receded, and within a few days we were back in full operation. Meanwhile, across the bay, near the Piako River mouth, there was to be another long-lasting legacy of that weather event.

A stop bank breach flooded 15.7 ha of farmland. Within a few months the site was covered in sediment and mangrove seedlings and was being used as a roost by hundreds of shorebirds. Within a year it had become one of the most important high tide roosts on the Firth, and a core area of interest for the Trust. We began to factor it in when advising visitors of what birds are around. There is widespread movement of birds to and from Pūkorokoro, depending on the tidal cycle, but we also know it can hold species of interest that may or not venture our way. Whimbrel, for instance, were being seen at Piako more frequently than Pūkorokoro. This season it was the favoured place of Sharp-tailed Sandpipers and several vagrant terns – Whiskered and Gull-billed. The wider Piako region has also been fairly reliable over the years for Cattle Egret.

All of which makes the place highly attractive to birders. Yet much to the frustration of some of them, for the last two years access to the site has been restricted. However, there was a very good reason for those restrictions, and the ultimate outcome promises to be a fantastic shorebird site.

Following the 2018 flood there were questions over the site's future. Would the landowner be able to repair the breach and restore the site to farm production? That became increasingly unrealistic. Waikato Regional Council recognised the breach posed significant risks to its Piako River flood scheme assets. Allowing the uncontrolled breach to remain was not a feasible long-term solution. Defences had to prevent land erosion as well as manage the much larger volume of water expected in a future tidal surge event. So, the council purchased the land.

The council officer who informed me of the deal was careful to stress the purchase was made for infrastructure asset protection, not for the birds as such. Nevertheless, we had made council aware of the site's important biodiversity values, and they were amenable to exploring ways of retaining as much habitat as possible. The Trust has since been working with council and we are now poised to see the fruits of this joint approach.

The site was part of an 830-ha area in the lower Piako serviced by three aging floodgates. The land purchase provided an opportunity to rationalise those assets nearing the end of their useful lives with one new floodgate. The council faced several challenges in designing a scheme that achieved its aims of strengthening flood defence.



Image 1.1 Eastern Foreshore Asset Rationalisation WAIKATO REGIONAL COUNCIL



Culvert crossing construction WAIKATO REGIONAL COUNCIL

These included the gradual eastward migration of the Piako River and riverbank erosion on the western edge of the flooded site, and surrounding farmland being at mean low sea level. More importantly for the Trust, the land needed for the scheme covered only part of the flooded site, leaving over 10ha available for shorebird habitat. With completion of the engineering works, the area will be reopened to the tide.

Image 1.1 shows an aerial view of the site with the Piako River (top left), and the Hauraki Rail Trail extending along the eastern side of the cleared area (centre right). The lower section shows the location of flood protection infrastructure work. The roost will be constructed in the upper centre, parallel with the rail trail.

As reported in previous issues, we have been advising the council on the creation and management of high tide roosts for shorebirds. The mangroves that were steadily colonising the site were removed. A raised island covering 3.5ha is being built. To ensure it remains suitable for birds, it will need to be carefully managed. Roosting shorebirds require a wide field of view, which primarily means controlling vegetation. At Piako it is hoped to achieve this by using periodic tidal inundation, which is why the raised area has been designed to be flooded by only the highest tides in the lunar cycle. The water should still be shallow enough for waders to roost.

Ongoing maintenance of the physical assets will be undertaken by the Waikato Regional Council funded from Piako Flood scheme rates. This will include periodic removal of accumulated sediment with material reused as earth fill for stop bank maintenance. Retaining open space mud flats is essential for maintaining shorebird habitat, so further mangrove incursion will be an issue. A floating screen has been included in the tidal outlet to restrict mangrove propagules from entering the site, but it is recognised that this will not fully prevent incursion. PMNT has undertaken to assist with clearance of mangrove seedlings when required. The Trust has also been commissioned to provide plans for a bird hide along with interpretive signage.



Terns and gulls and chicks MEG COLLINS

In the last issue we reported on the complete failure of the large tern and gull colony at Kaiaua. **Meg Collins**, Convenor of the Ohiwa Reserves Care Group reports on better success at their site.

In early December 2023, lots of Taranui Caspian Terns were flying aimlessly around Ohiwa Harbour, looking for a safe place to nest over the summer. Their previous nesting spot on a sand island opposite the Ohope Wharf had disappeared underwater in late 2021.

Twelve of them found a site on the west end of Whangakopikopiko (Tern Island. See *PM News* 129) This tiny island, home of the rare Kanuka, had split in half in 2021. Under pest control by the Ohiwa Reserves Care Group for over 20 years, the island has been a safe nesting haven for the Tirituriwhatu New Zealand Dotterel, Toreapango Variable Oystercatcher, and Mātātā Fernbird.

By late December 50 Tara White-fronted Terns had joined the Caspians, who had now reached 50 adults. In early January there were over 200 White-fronted terns nesting. This was the first time since 2006, that they had established a colony here. They were then joined by 12 Tarapunga Red-billed Gulls, and 10 Tarapuka Black-billed Gulls.

Whangakopikopiko is designated as a wildlife refuge, and as people can easily access it at low tide, the care group made up five signs and put them around the entry points to the harbour. We notified the local iwi, Upokorehe, and posted on local social media what was happening on the island and emphasised to the public to keep away and let the birds to their thing.

Over the next eight weeks we posted on the Community Notice board weekly updates and photos of the nests, the young chicks, and finally the fledglings. We had good feedback and gathered over 200 followers.

On the last visit, we spied a young chick going around in circles. It had been tangled up in a long tendril of grass and was stuck. We gently removed the tangled stems from its foot, and it finally ran away with a slight limp, and eventually flew away.

By the end of January, we estimated that there were over 100 White-fronted Tern chicks, 18 Caspian Terns, 20 Red-billed Gulls and 12 Black-billed Gulls. The residents around this end of the harbour and the Opotiki community took a great interest in this colony by staying well away.

We all hope they will return next year.



Chick with tangled foot MEG COLLINS



The shop is not only a key source of income for the Trust, but also the main point of interest to many of our visitors. **Keith Woodley** reports on being a bookseller, and some recent titles in stock.

I often claim the Shorebird Centre shop has the most extensive selection of natural history book titles on sale anywhere in the country. To date, no one has successfully disputed that claim. Visitors are surprised, even overwhelmed, by the number of titles on sale. Yet it has been relatively easy to achieve, and we do have advantages over other bookshops. In specialising in natural history, we know it is an interest many of our visitors share. And unlike other bookshops, we do not have to carry the broader range of subjects they do.

We have certainly come a long way from the early days of the Centre, when the shop comprised a trestle table with copies of Stuart Chambers' *Birds of NZ Locality Guide*, some handmade photo cards by Folkert Nieuwland, and a few souvenir items by Monty Widgery. Our inventory has steadily grown over the years, as has the specialised furniture installed to display it. From 2005 there was a notable growth spurt when Jenni Hensley took up the role of Centre Assistant and expanded the range of stock. Her successors continued the trend, but since the arrival of Chelsea Ralls six years ago, the operation has been transformed. We are both always on the lookout for new titles, but to her falls the regular role of finding suitable display and shelf space for them. I am invariably impressed by her success in doing so.

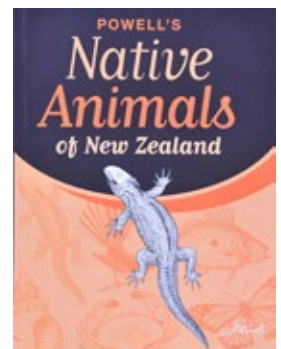
From the thousands of books we have sold over the years, there emerges some interesting trends. Far and away the most popular title is Heather and Robertson *Handguide to the Birds of New Zealand*. We have sold hundreds of copies since it appeared in 1999 and are continually reordering it. The New Holland *Photographic Guides*

are a compact, pocket friendly series, that have always sold well. Titles cover everything from birds and marine mammals to fishes, rocks and fossils, alpine plants, and wildflowers. Unsurprisingly, the volume on birds is very popular and is second to the *Handguide* in copies sold, albeit a long way behind. However, a more recent title – *A Naturalists Guide to Birds of New Zealand* by Oscar Thomas has nudged the New Holland guide into third place in terms of numbers reordered.

Then there are the perennials. The Chambers *Locality Guide* 1989 was the first book to be stocked here: a variation of it is still on the shelves today. *The Field Guide to the Birds of New Zealand* by Heather and Robertson, parent to the *Handguide*, was published in 1996, and has been continually in stock since. *Old Blue*, Mary Taylor's charming account of the famous Black Robin story appeared in 1993. We began stocking it sometime around 1994-95, and still do today.

Finally, and nostalgically, there is *Powell's Native Animals of New Zealand*. Visitors of a certain vintage invariably date themselves as they

react to seeing this on the shelves. First appearing in 1947, for generations of New Zealanders it was their introduction to identifying New Zealand fauna. I recall it as a class set at school. A W B Powell was a curator and assistant director at Auckland Museum: he was also an excellent illustrator, and his fine drawings are what make this book so special. The latest printing was in 2019.

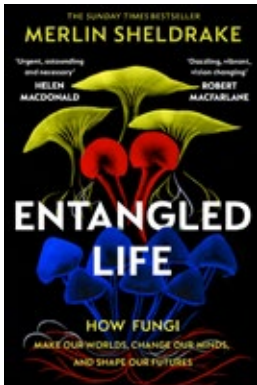


Powell Native Animals of New Zealand

Booksellers Aotearoa New Zealand

We recently took our role as book-sellers a step further by joining Booksellers Aotearoa New Zealand. Booksellers are a national not-for-profit trade organisation, and work to help independently owned and chain bookstores to grow and succeed. Booksellers Aotearoa provides education, information, business products, and services; creates relevant programs; and engages in public policy and industry advocacy.

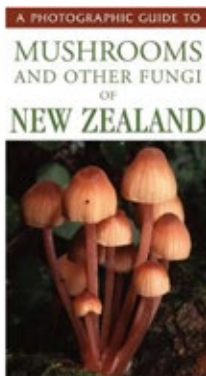
As a member of Booksellers we are entitled to benefits of RetailNZ membership, receive discounts from suppliers, are kept up-to-date with all the news and releases from the book and publishing industry and much more.



Merlin Sheldrake *Entangled Life: how fungi make our worlds, change our minds, and shape our futures.* 2020. Penguin Random House.



Liv Sissons *Fungi of Aotearoa: A Curious Foragers Field Guide.* 2023. Penguin Books NZ



Geoff Ridley. *A Photographic Guide to Mushrooms and Other Fungi of New Zealand.* 2006



Rebecca Bowater. *Zealand Fungi: A Photographic Celebration.* 2020

One recent initiative is BookHub, a collaboration between independent bookshops around New Zealand and Booksellers Aotearoa. Kiwi designed and made, BookHub is the first and only site in the English-speaking world that offers book buyers access to the inventory of independent bookstores nationwide, all in one place. The website went live on National Bookshop Day in October 2023 and includes more than a million local and international titles held by NZ bookstores around the motu.

With BookHub, you can search for your favourite titles and authors and immediately see which stores have copies in stock. Using the geolocation feature, you can see which of your nearest bookshops have stock available and from there, you can buy online through the bookshops website and have it shipped to you or visit the site in person to purchase your next great read. BookHub is not a distributor. It does not compete with existing independent bookshop websites; it enhances and supports their online presence.

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A Natural History Bookshop

It must often seem to visitors that we are all about birds, especially shorebirds. Well, many of us do tend to be rather focused on them, and we do have a lot of bird books on sale. But sometimes we also need to remind ourselves that we are a *Naturalists'* Trust. Fortunately, the range of titles we stock offers compelling testimony to just that. In this issue we highlight just one sector of the natural world, the extensive but often little-known world of fungi.

Entangled Life

They can change our minds, heal our bodies, and even help us avoid environmental disaster; they are metabolic masters, earth-makers, and key players in most of nature's processes. 'As you read these words, fungi are changing the way that life happens, as they have done for more than a billion years. They are eating rock, making soil, digesting pollutants, nourishing, and killing plants, surviving in space, inducing visions, producing food, making medicines, manipulating animal behaviour, and influencing the composition of the Earth's atmosphere. Fungi provide a key to understanding the planet on which we live, and the ways we think, feel, and behave. Yet they live their lives largely hidden from view, and more than 90 per cent of their species remain undocumented. The more we learn about fungi, the less makes sense without them.'

There is some very fine writing and storytelling here, complemented by 43 pages of notes, many of them immensely detailed.

Fungi of Aotearoa

While *Entangled Life* has a global focus, there are several titles looking at fungi in New Zealand. Liv Sissons's *Fungi of Aotearoa: A Curious Forager's Field Guide* is a practical and up-to date guide. Sisson shares her top tips and takes the reader on a journey to discover the unique and diverse fungi Aotearoa has to offer. The reader discovers how to identify the best edible varieties, and how to cook with them, how these incredible organisms have shaped the world as we know it, and the role they are playing in modern medical and environmental research. Featuring stunning full-colour photographs, fun facts, and current descriptions of over 130 species (including our brilliant blue national fungus, Werewere Kokako), *Fungi of Aotearoa* is packed full of information and advice that will delight armchair enthusiasts, backcountry explorers and budding experts alike. This is a best seller at Pūkoro and a worthy finalist in the 2024 Ockham Book Awards.

Photographic guide to mushrooms and fungi

This guide introduces readers to New Zealand's mushrooms and fungi, which number up to some 19,000 species and include extraordinarily diverse types, from the familiar 'mushroom' to brackets, coral and cup fungi and slime moulds. Over a hundred species are presented, with spectacular close-up colour photographs accompanying each entry. It will appeal to walkers, nature lovers, tour guides and educators, and fungi photographers wishing to identify their subjects.

If it is unsurprising that *Birds* is the most popular volume in this series, somewhat less predictably, *Mushrooms and Other Fungi* is in second place. Indeed, it is ahead of all other titles in the series by a substantial margin. From time to time there is a spurt in sales or online enquiries. The reasons for this are not clear although we suspect there may be a link to trends on social media.

Rebecca Bowater Fungi

Liv Sisson's book presents a stunning array of photos. So does this one, but it also lives up to its name. Suited more for the desk or coffee table rather than as a field guide, its larger format accentuates the amazing forms and colours of so many New Zealand species.

Fitting in – moths and their food plants

Restoration of the Robert Findlay Wildlife Reserve is an on-going lesson about ‘fitting in’. What or who belongs where, what is its function, what or who is missing and what or who is surplus to requirements? **Tansy Bliss** describes her exploration of these connections.

At low tide when the birds are not pulling me towards the mud flats, I take a relaxed walk through the Robert Findlay Wildlife Reserve. Robust stands of native plants emerge from a waving sea of colourful exotic weeds, many in full flower. Insects are busy collecting nectar and pollen, caterpillars chewing through leaves and sucking bugs dining on sap. When I drop to ground level and fossick through the tangle of grasses and low growing vegetation, I disturb beetles, catch a glimpse of a skink - plague I assume - and see other insects jumping and scurrying out of the light. I sit back and wonder just how everything fits in.

I think about moths. In early December 2023, our moth researchers, Tony Steer from the Coromandel, and Sean Clancy from the UK joined me again at Pūkoro. Our task was to identify what moths were in the Reserve. We hoped to find links between the moths we caught and the plant species in the Reserve. Over the course of a week, a small battery-powered light trap was set out each night in different habitats. Despite the inclement weather, moths were on the wing, and we pieced together bits of their story.



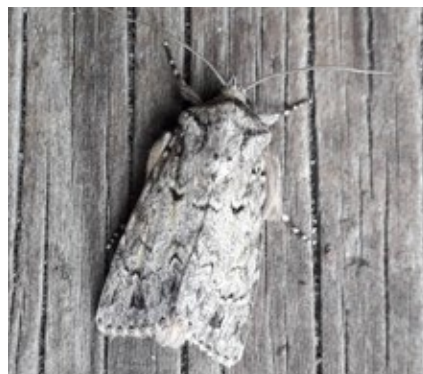
Light trap in Reserve TANSY BLISS

Moths lay their eggs on specific plants that provide the right food for their hatched caterpillars (larvae) to feed on. Some moths are monophagous, and their larvae will feed only on one specific plant. Others are oligophagous with larvae feeding on a range of plants within the same plant family. Those moths that are polyphagous, have larvae that can feed on a wide variety of vegetation.

A lovely example of a monophagous species is a chunky, native moth, *Ectopatria aspera*, with a wingspan of 36-38mm.

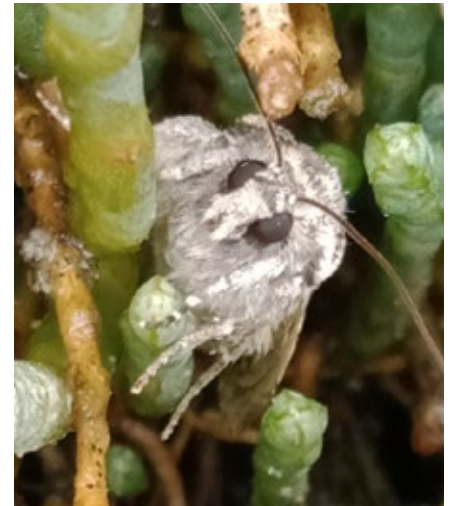
Its larvae only feed only on Glasswort, *Sarcocornia quinqueflora*. Local entomologist and long-standing PMNT

member Peter Maddison, informed me that the larvae are smooth and green just like the new growth of the Glasswort itself. He assured me the best time to search for these well camouflaged caterpillars is at high tide when the salty water is almost covering the glasswort and the larvae crawl to the tips of the plant to avoid drowning. Sean Clancy added that the larvae are normally active at night, so I was quite relieved when we caught an adult moth at the light trap and searching for caterpillars in the dark, at high tide could be delayed. *Ectopatria aspera* is a beautiful moth with muted greys and subtle patterning across its wings. We nicknamed it ‘Saltmarsh Grey’, in recognition of its chosen habitat and colouration. The male has extraordinary hair tufts on its middle leg giving it a very furry, bold look.



Ectopatria showing leg hair tufts SEAN CLANCY

There is little information on this moth, so I imagined the female nestled among the Glasswort laying her eggs and then the green larvae munching their way through the salty succulent before spinning themselves into silken cocoons. I am not sure how long the moths remain in the pupae stage before



Moth (*Ectopatria aspera*) in the *Sarcocornia* TANSY BLISS

the adults emerge and, fly silently across the marsh searching for a mate.

My musings were interrupted when two adult Banded Rails were seen strutting through the Glasswort with six newly hatched chicks. It was evening, the light was low, and they were actively foraging, picking insects out of the Glasswort, dashing rapidly between clumps of Sea Rush and open ground. I thought of those smooth green caterpillars being ideal food for the chicks, and a deft peck by an adult being the end of our ‘Saltmarsh Grey’!



Banded Rail family in the saltmarsh SEAN CLANCY

I then wondered if any other moths used Glasswort as a food plant and a quick search on Plant-SyNZTM led me to a non-native moth from Europe, Chenopod Casebearer *Coleophora versurella*. It is oligophagous and the larvae will also feed on other plants in the Amaranth family.

In contrast to our chunky Saltmarsh Grey, it is a small slim moth with a wingspan of 11-15mm. We caught an adult in early February and although I knew it was different, I did not know it was the Chenopod Casebearer I was looking for until Tony Steer identified it and added it to our iNaturalist records.



Chenopod Casebearer moth (adult) TONY STEER

The larvae initially bury into the glasswort as they feed and later spin a silken case which becomes coated with feeding detritus. They continue to feed from within the case until they pupate. The silken larval feeding case is shown in the photo courtesy of Stephen Thorpe (via iNaturalist), who found the larval stage of this moth on *Sarcocornia quinqueflora* in the Manukau Harbour. This is something to look out for in our Reserve.



Chenopod Casebearer larvae STEPHEN THORPE

However, not every moth is so specialised and one of the more numerous species drawn to our traps was *Bactra noteraula*. It is a rather indistinct small and pale moth with a forewing length of 11mm, and with noticeable palps pointing forward. It is readily disturbed from vegetation during the day though it only actively flies at night. It is polyphagous and will lay its eggs on a range of native and exotic rushes and sedges, both of which are abundant in the Reserve. The Giant Umbrella Sedge, or Coastal Cutty Grass, *Cyperus ustulatus* we have planted is already well established, seeding and expanding across the Reserve. I was therefore pleased to learn that the larvae of *B. noteraula* tunnel into and feed on the shoots, stems, and flowers of this plant.

Later, a walk at dawn in the Reserve after a wet night helped me further 'fit' this moth into the ecosystem. The moths must have been clinging to the damp rushes and sedges. As I walked through the long vegetation, they flew up, slow and relatively low. Swallows immediately took advantage of the situation and swooped with speed, agility, and grace, sweeping the air in front of me.

I also considered the mangroves and whether they served a purpose in the moth world. There are three well-documented associations on Plant-SyNZ™ and two of those moths have been caught in the Reserve or at the Shorebird Centre.



B. noteraula on rush TANSY BLISS

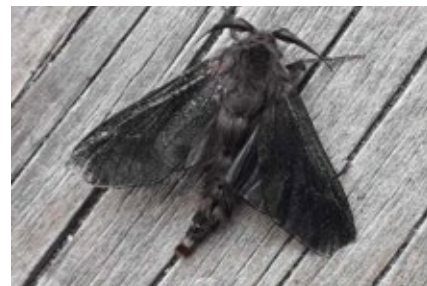
The Common Bag Moth, *Liothula omnivora*, is associated with mangroves, although being polyphagous, the larvae can feed on a wide range of vegetation. It is doubtful you will have seen the adult moth, but you may be familiar with the leathery-looking case that is dragged around by the caterpillar and left suspended on posts, twigs, and branches while the caterpillar becomes a pupa and then an adult.



Common Bag Moth case STELLA McQUEEN StellaMcQ / CC BY-SA (<https://creativecommons.org/licenses/by-sa/4.0>)

Only the male metamorphoses into a recognisable moth. The adult female never leaves her bag and has no wings, merely an abdomen and rudimentary head and thorax. The male flies around until he locates a female in her case. He inserts the telescopic end of his abdomen into the narrow end of the female's case and then mating can occur. The female lays the eggs within the case before she dies. The caterpillars hatch, leave the case and march off, naked so to speak, before weaving their own silken cases incorporating bits of vegetation.

In July 2023, while exploring the mangroves at Awhitu Peninsula with naturalist and PMNT member John Charteris, we found an empty bag moth case fastened tightly to a mangrove branch. We puzzled over the restricted lifestyle of the creature inside. I didn't really think about the male or what he might look like until we caught a dark, almost black, ragged-looking moth in the light trap at the Shorebird Centre. He is an odd creature, with a long tapering abdomen, and dark, dull semi-opaque wings. Once identified, it became an additional piece of the puzzle completed - more 'fitting in'. I am now searching for Common Bag Moth cases in the Reserve.



Adult male Common Bag Moth SEAN CLANCY

Another moth we caught in the Reserve, *Ptyomaxia trigonogramma*, also utilizes the mangroves as a food plant, with its larvae feeding on the mangrove flowers. There is little information about this moth, but due to its distribution outside of where mangroves grow, I have assumed it is polyphagous.

The adult can vary in colour and pattern on the wings, so it was a little confusing when, on the night the light trap was located specifically within the mangroves, we caught what I thought were three different moths, Sean assured me that they were all the same species.



P. trigonogramma TANSY BLISS

As Tony and Sean departed, I considered all that we had learnt - the tentative links between habitat, the moths, and their place in the ecosystem. Equally it highlighted how much we didn't know and how much there is left to discover.



Bittern on the brink?

They are very impressive birds. There is a mystique to them, partly driven by their cryptic nature, the wetlands they inhabit, and their scarcity. But as **Wendy Hare** reports, that scarcity of Bittern indicates a species in serious trouble.

The Australasian Bittern above has found a good meal (if it succeeds) but others are starving. IMOGEN WARREN

As a child walking down the road to catch the school bus – it was a regular treat to find a Bittern - frozen, large beak pointing skyward, almost taller than me, pretending it wasn't there. A generation later my niece and nephews enjoyed that same privilege as they too trod the gravel road to and from the bus. That swamp, in the embrace of the Whenuakite River as it curves around Harebridge Farm, remains, largely intact thanks to the husbandry of my brother Ralph and the family farmers before him.



Harebridge Swamp WENDY HARE

Sadly, the same cannot be said for the rest of the river where pastures reach right down to the waters' edge. A circumstance reflected throughout New Zealand with more than ninety percent of our former wetlands lost, mostly to agriculture. Those which remain are in a sorry state through poor water quality and invasive species.

Australasian Bittern/Matuku-Hurepo is a flagship species for our wetlands although its streaked plumage, shy nature and cryptic behaviour mean that there is much we do not know about its lifestyle. What we do know and have known

for years is that the population is in steady decline – now believed to be only 800 birds throughout New Zealand and described as Nationally Critical (DOC Threats Classification) - the last step before extinction. Hard to imagine that in the early 1900's there are descriptions of flocks of Bittern 100 strong!

But it gets worse. Drones with thermo-imaging cameras can now fly known Bittern hotspots on early spring mornings searching for the birds and their nests. This season, the search of 1300ha (27 wetlands) in prime habitat in Bay of Plenty, Waikato, Northland, and the Coromandel, yielded 50 adult Bittern but only three Bittern nests. Plenty of Pukeko and Harrier nests were also located. Two of the Bittern nests were in Bay of Plenty in an area that has been managed for Bittern for the last two decades. The third was in a harbour on the Coromandel, a place which has the unenviable distinction of having lost at least four birds to roadkill in the last twelve months. On one nest the female (which has sole charge) was observed off the nest for up to five hours at a time – presumably in search of food - leaving her offspring highly vulnerable.

Past survey methods have focussed on counting booming males: females are much more difficult to find, transmitter and track. This new survey technique strongly suggests the females are faring even worse than their males. Starving chicks, not yet able to fly, have been regularly handed in to DOC Tauranga having been discovered emaciated in harbourside gardens. It looks like they are not doing well either. We do not know for sure, but the anticipated lifespan of our Bittern is 10 -11years, so unlike Kakapo, we do not have a long time to work this out. A 2021 estimate has suggested a mere 125 pairs left.

I am grateful a chance conversation led me to the recent Coromandel Matuku- Bittern Workshop and opened my eyes to the decimation of this iconic bird of my childhood. Join me in turning the tide for our Matuku-Hurepo.

See the page 13 for ways you can help and links for further information.



Our Bittern need help and they need it now – how can you help?



- ➔ Spread the word – share the link to the NZ Geo article on your FB page
www.nzgeo.com/stories/the-grief-bird/
- ➔ Advocate for an urgent national collaborative approach to Bittern management. Talk to your local District Council; Regional Council & local DOC office. Use any influence and contacts you have.
- ➔ Our Bittern are starving – farmers drains are now an important hunting habitat. Ideal conditions are clean clear water, 8-75cm deep (15cm best) with good fish passage to the sea i.e. no high culverts and the like. See this link for details on fish passage:
www.doc.govt.nz/nature/habitats/freshwater/fish-passage-management/
- ➔ Advocate with any lowland farmers you know, publicise in any newsletters that reach lowland farmers. This link provides more detail on freshwater habitat restoration:
www.doc.govt.nz/nature/habitats/freshwater/freshwater-habitat-restoration/
- ➔ Educate our tamariki – excellent resources available for schools on the LOVE BITTERN! – AROHA MAI MATUKU_HUREPO! website at www.lovebittern.com/raising-awareness and scroll down to Childrens Resources.
- ➔ Plant moderate sized shrubs along road margins in wetland areas to encourage Bittern to fly higher over roads, avoiding collisions with traffic. Saltmarsh Ribbonwood *Plagianthus divaricatus* has been used successfully for this purpose in the Bay of Plenty.
- ➔ Install “Slow for Bittern” signs on roadways where Bittern cross. For sign information google the NZ Transport Agency Slow For Bittern: www.nzta.govt.nz/resources/traffic-control-devices-manual/sign-specifications/view/1200?category=%26subcategory1%3D%26subcategory2%3D%26subcategory3%3D%26term%3D&start=1110
- ➔ Support your local wetland restoration, weed and pest control groups as much as you are able.
- ➔ Support the newly minted Bittern Conservation Trust as they work to help species led conservation for the Australasian Bittern. They can be contacted via the LOVE BITTERN! website or follow them on their Facebook page.
- ➔ Full information and reports from the Coromandel Matuku-Hurepo workshop can be found at Predator Free Hauraki Coromandel Trust www.pfhc.nz/matuku-bittern-conservation-workshop-field-visit
- ➔ Watch Emma Williams from DOC present at the 2023 Australasian Bittern Conservation Summit.
www.youtube.com/watch?v=eRBcSwt0Hfg
- ➔ Check out Emma Williams’ presentation at Pūkoro Mirando.
www.shorebirds.org.nz/archives/3858
- ➔ You can follow Emma’s work on her Facebook page [Swampbird.research](https://www.facebook.com/Swampbird.research)



AUSTRALASIAN BITTERN WORD SEARCH

abundance	bunyip	eggs	frog	kutakuta
acoustic	camouflage	endangered	gasp	lurk
amphibian	clear	estuary	habitat	monitoring
aquatic	creep	extinct	help	mud
beak	critically	feathers	heron	murky
bird	cryptic	fence	hide	mythology
bittern	diversity	fish	inanga	nest
boom	dragonfly	fledgling	insect	nestling
brackish	ecosystem	fly	Intake	network
bulrush	eel	freeze	invasive	pest
population	skyward	resonant	taonga	
predator	stab	rushes	trap	
protect	stalk	sequence	tuna	
reeds	starvation	shallow	turbidity	
repo	swamp	shy	wetland	

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Coastal Restoration Trust of New Zealand, Tāhuna Ora. Annual Conference Kawhia 2024



Powhiri at Maketū Marae. Credit SOUTHLIGHT STUDIO

On a sunny Wednesday morning in late March, with a fresh breeze blowing off the coast, Ngāti Mahuta welcomed the conference attendees onto the marae. Almost instantly new relationships were formed and lively conversation about restoration work, volunteers, culture, and whakapapa began.

The theme was a well-known whakatauki:

Whatungarongaro te tangata, toituute whenua. As people disappear from sight, the land remains.

The conference showcased the restoration work happening locally led by the Onepu Charitable Trust, strongly supported by the Coastcare Waikato programme, under Waikato Regional Council. In addition, Te Taiao o Kāwhia Moana, a multi-stakeholder group brought the issues of vehicles on beaches to the fore and were part of the panel for an open Community meeting and discussion held one evening during the conference in the Town Hall.

Field trips were local. At Tom French Grove we looked at planting trials to see if permanent buffers of native coastal forest could replace sacrificial buffers of exotic trees currently used to protect commercial forestry plantations from salt laden coastal winds. The native trees were planted in clusters, called native seed islands, 10m in diameter.

It was suggested that the close planting of a range of compatible coastal trees would flourish together and then seed out into adjacent areas. This island approach allowed manual weed control between the groups of plantings and was easily monitored for establishment success and growth. I was quite taken with the concept and will set up some Robert Findlay Wildlife Reserve 'seed islands' during the plantings in June. This approach will also allow us to have designated walkways between the seed islands and hopefully areas to rest in the shade in the not-too-distant future.

A locally run nursery gave us lessons in potting up Pingao and other coastal plants, the use of overhead shade cloth and the invaluable work of dedicated volunteers.



Monitoring success of native seed islands. Credit Southlight Studio

Thanks to the Foundation North G.I.F.T Grant, **Tansy Bliss**, PMNT Kaitiaki Ranger was able to attend the Coastal Restoration Trust of New Zealand's annual conference held at Maketū Marae located along the shores of the Kawhia harbour.

Pita Te Ngaru (Ngāti Patupō) shared the story of the Hawaiki iti gardens and Te Kowiwi stream where the descendants from the Tainui waka first cultivated kumara, taro, aute (mulberry), and hue (gourd) brought from Hawaiki. The knowledge required to adapt these crops to a different climate and soils is now recognised and Whakaotirangi, Houtoroa's wife who did the cultivating, is celebrated as one of Aotearoa New Zealand's first scientists. Today, livestock and declining water quality threaten these important sites. Waikato Regional Council are working with iwi landowners and other stakeholders to fence and replant natives in the adjacent catchments.



Conference participants at Kāwhia Moana Native nursery. Credit Tansy Bliss



Pita Te Ngaru holding korero about Hawaiki iti gardens. Credit Southlight Studio

We went from local to global, considering the effects of climate change and rising sea levels on our coasts. Dr Andrew Swales from NIWA talked about “unavoidable sea level rise” and showed modelling of what will be lost

and how we can adapt infrastructure and land use to best cope with this event.

We also looked at how sediment is moved up and down our coastlines, when to let it go and when to trap it.

One session focussed on weed control and I was encouraged to take a leap of faith and use a selective herbicide to get on top of the kikuyu problem in the Reserve without damaging our native plantings. I have completed my first trial and blue dye now lingers on sprayed grass around our native plants. I wait nervously to see the results!

Regional roundup sessions focused on what restoration groups were doing on the ground, what their issues were and how they achieved their successes. I gave a brief presentation on our work in the Robert Findlay Wildlife Reserve and the feedback was “you need more volunteers!”

Indeed, it seemed that volunteer groups backed by the Waikato Coastcare programme had very good results. They stressed the importance of making time for a cuppa and korero with everyone involved. I have some work to do.

Southlight Studios showed us their amazing work on the educational videos made for the Coastal Restoration Trust about coastal processes and restoration. A series of thirteen excellent videos is available for anyone to use and share. They can all be found on the Coastal Trust Restoration of New Zealand website via the link below:

Our Coast video series • Coastal Restoration Trust of New Zealand

I came away inspired, ready to try some new approaches and motivated to build on the fantastic work started by Ray and Ann Buckmaster and the numerous volunteers who helped them. I look forward to welcoming everyone back to see the progress in the Reserve and to continue the restoration work.

My thanks to Foundation North for funding my attendance.



Dr Andrew Swales discusses sea level rise. Credit Southlight Studio



Tansy talking about the RFWR. Credit Southlight Studio

Farewell to the Birds Day

Guest speaker at the Farewell to the Birds Day on 3 March was **Subhankar Banerjee**, Professor of Art and Ecology at the University of New Mexico. Here are excerpts from his talk.

At the beginning of his presentation, Subhankar showed this image of a tiger on the edge of a mangrove-fringed tidal channel in the Sundarban. When prompted, the audience identified all key features: the mudflat, the mangroves, and the tiger. Well, almost all. What most failed to notice was a tiny shorebird. Barely bigger than the raised tiger paw, a common sandpiper can be seen directly below it.



The image brings together what we may call, a charismatic or iconic animal with one that is overlooked and underappreciated. No one ever visits the Sundarban to see a sandpiper, but we must ask: Are shorebirds less important than tigers? The purpose of the visual exercise is to provoke the public to also consider shorebirds as our neighbours, as important residents of this earth. You all here at this Centre and in the room know and care about shorebirds but that is not the case for everyone. Around the world, shorebirds are largely overlooked and underappreciated.

In December 2023, I was keynote speaker at an in-person conference organized by the US Fish & Wildlife Service, the USGS Science Centre and other federal and state agencies and conservation NGOs with an explicit call: “Bring Birds Back.” Much of this presentation today is based on that talk.

The status of shorebirds

“... from the tens of thousands of people I have encountered over the years at Pūkorokoro Miranda, it is clear that most people know little about these birds, let alone the problems they face.”

– Keith Woodley (*Shorebirds of New Zealand: Sharing the margins*, 2012)

“Shorebirds are largely unknown to the American public today.”

– David Allen Sibley (Personal communication, 2023)

In 2019, a team of ornithologists from the US and Canada, published a paper in the influential journal *Science*. The paper revealed that nearly 3 billion breeding birds have been lost in North America over the past half century, a “staggering decline of bird populations.” The call-to-action, “Bring Birds Back,” was born. Three years later, a “State of the Birds Report” showed shorebird populations had declined significantly in the last 40 years. ‘One-third of shorebirds (10 species) are Tipping Point species with cumulative population losses exceeding 70% since 1980.’

I call the current invocation of “Bring Birds Back” – the third national call to action – for birds – in the US. The second one happened following the publication, in 1962, of Rachel Carson’s landmark book, *Silent Spring*, which is quite well known, and so I’ll skip that. The first call to action, which was issued in 1886 – is largely unknown today and long forgotten, which will be a key focus of my talk.

Comedy is an effective starting point to address tragedy – the tragedy before us now is the peril of shorebirds, in the US, and all over the world. Laughing

really does matter. Lee Siegel, emeritus professor of religious studies at the University of Hawaii wrote a fascinating book, *Laughing Matters: Comic Tradition in India*. Siegel writes that, ‘the compulsion of comedy is to laugh the loudest when life is at stake, and because it is at stake, to make jokes when things are most serious. The conviction of comedy is that life is won only through mirth and laughter.’

My ongoing project, *Shorebirds in Modern Times* is an homage to *Charlie Chaplin in Modern Times*, one of the most important films in world cinema. Now, if you think Chaplin is the only person who could raise and outstretch his arms up in the air like that – think again, the Buff-breasted Sandpipers can do exactly the same. If you think Chaplin is the only person who could puff out his puny chest when confronted by authorities – think again, the Buff-breasted Sandpipers can do exactly the same. If you think Chaplin is the only person who could do tricks with his legs – think again, the Yellowlegs can do tango when in South America – our dear colleagues in Uruguay tell us that. Now, a more concrete resonance between *Charlie Chaplin in Modern Times* and *Shorebirds in Modern Times*. After Chaplin goes in and out of prison a few times, his newfound love, Ellen Peterson, shares a surprise.

“I’ve got a surprise for you. I’ve found a home.”



Modern Times Chaplin and Buff-breasted Sandpiper

The couple arrive at an abandoned and dilapidated place at the edge of an industrial town.

As they open the door and enter the house – a loose plank above the door falls on Chaplin's head; as he tries to steady himself against the dinner table – the table collapses; and then as he sits down on the chair – the legs go right through the floorboards – Chaplin is flat on the floor. It is still a home though. It will have to do.

With a cheerful attitude, the couple acknowledge: "Of course it's no Buckingham Palace."

Before the arrival of the European settlers in North America, the tiny Buff-breasted Sandpiper, whom shorebird scientists affectionately call buffy, and the massive bison, had an incredible co-existence on the Great Plains. The bison would chomp down the tall grasses and create a suitable short-grass habitat that the sandpipers prefer, as they arrived on the plains after nesting in Arctic Alaska and Canada. There, the buffy will spend about 4 to 6 weeks, resting and refueling, before making the long journey above the Gulf of Mexico, all the way to South America.

But the arrival of the European settlers disrupted that unique bison-buffy multispecies coexistence. Even as late as 1870, there were an estimated 10 million bison still roaming the western plains. The most extreme and rapid massacre of bison, and consequently the destruction of the reliance and relations that Indigenous peoples had built with the bison, happened between

1870 and 1890, at the end of which only a few hundred bison remained, on the verge of extinction. That exact window of time – 1870 to 1890 is also when the most rapid and extreme massacre of shorebirds took place in the US. The common link between the two massacres was the establishment of railroads and the improvement in gun technology. While the bison finally got help, there was no one to help the buffy – they had to find a new home all on their own.

The sandpipers found a new home on the sod (turf) farms in south coastal Texas, not exactly a newly built home, but rather a transformed, degraded version of an old home, like Chaplin and Ellen.

Drinking pesticide-laden water; inhaling pesticide-infused air; feeding on armyworms that have ingested pesticides – isn't the same as hanging out with the bison in the open prairie and eating healthy insects. But a sod farm nevertheless is home, for now. It is survival; it is resilience. In one day in August 2019, in one sod farm, we counted over 2,600 birds, almost all Buff-breasted Sandpipers with a few Upland Sandpipers. Ornithologists told me this was remarkable.

Think of each time Charlie Chaplin gets thrown back in prison, as a jubilant turning point in modern progress – construction of railroads; improvement in gun technology; healthy, and then unhealthy food; feather-in-the-cap fashion; coastal mansions; on and on, to today – our electronic gadgets and

renewable technologies that use lithium batteries. Shorebirds are present in every one of those turning points of modern progress.

Environmental Visual Culture

My shorebird research focuses on three entangled histories: history of art; history of science; and history of conservation. I decided to focus my remarks more on art. But first, I want to make a slight distinction between art and science. If you engage the world of shorebirds through the lens of science, you will learn something about the birds – their physical attributes; their feeding, roosting, and mating behaviors; their amazing migrations, and so on. If you engage the world of shorebirds through the lens of art (with humanities interpretations added), you will not learn that much about birds; instead, you will learn something about us. And that is how, the best of science and the best of art, working together in a complimentary manner, help us to arrive at new knowledge.

I'm not much interested in famous art that merely contributes to the ever-increasing accumulation of wealth, power, and fame; art that merely provides us with aesthetic pleasure, spectacle, and intrigue; or even art that merely serves as scientific illustrations. I'm interested in art, and more broadly visual and material culture of shorebirds, that can serve as portal to knowledge – art as knowledge. In that sense, almost any visual work, such as a refrigerator magnet, is a possible candidate for primary source of knowledge.

In 1921, in what was an unprecedented story in the history of American bird art, the Massachusetts Legislature approved expenditure of \$8,000, which in today's value would be about \$160,000. The money would go to a single artist, Louis Agassiz Fuertes, who would create original paintings for the multi-volume book, *Birds of Massachusetts and other New England States*, to be written by renowned ornithologist-conservationist-writer Edward Howe Forbush.

For the book, Fuertes created a large number of paintings between 1921 and 1927, the year he tragically died when his car was hit by a train. However, the volume that matters to us, Part I, which included shorebirds, was published in 1925, while he was still alive and active.



Louis Agassiz Fuertes, "Plate 31: Willet, Upland Plover, Western Willet, Buff-breaster Sandpiper," Collection and courtesy of Massachusetts Archives. from *Birds of Massachusetts and other New England States, Part I. Water Birds, Marsh Birds, and Shore Birds*, Edward Howe Forbush, 1925.

In the 481-page tome that included 33 full-color plates by Fuertes, is this one of a mixed flock: Willet, Upland Plover, Western Willet, and Buff-breaster Sandpiper. It is one of the most intriguing American shorebird paintings that I've come across so far. It depicts the Buff-breasted Sandpiper, not in its typical habitat of a grassy patch, but instead on a muddy-sandy shore of a bay or sea, totally out of place. Fuertes had deep knowledge about shorebirds. So, this cannot be a mistake. We will never know the full intention of the artist. We should instead consider this painting as a portal to knowledge.

So, what is a typical habitat for the Buff-breasted Sandpiper? 'Unlike most shorebirds, Buff-breasted Sandpipers forage in dry, grassy habitats, not wetlands' (source: *All About Birds*). Such habitats are found on the great plains and in Texas. In June 2002, I photographed buffys during their unique lek-mating display in the Arctic National Wildlife Refuge, also in grassy habitat – cotton grass on Arctic tundra.

We return to the Fuertes painting. On Buff-breasted Sandpiper, Forbush writes: 'Formerly it was perhaps not uncommon in New England; now it is one of the rarest sandpipers.' Could it be that Fuertes was possibly imagining and depicting an earlier time when seeing a buffy on a muddy-sandy seashore in Massachusetts was 'not uncommon'? In his earlier

1912 book, *Game Birds, Wild-Fowl, and Shore Birds*, Forbush writes, 'The Buff-breasted Sandpiper is rather a rare bird upon the Atlantic coast... The reports of its decrease in the west are very impressive. Apparently, it is on the way to extinction.' Note that in the 1912 book, Forbush alerts about possible extinction of the Buff-breasted Sandpiper, but he makes no mention of extinction of the species in the 1925 book. The 1918 Migratory Bird Treaty Act was established in between those years; so Forbush likely takes a cautiously optimistic stance in the latter book. Also note that the frontispiece in Forbush's 1912 book has a portrait of a single Upland Plover by Fuertes, below which the caption reads: 'Now (1911) in imminent danger of extinction.' So, to place two grass-affiliated shorebirds, both of which were assessed to be heading toward extinction – on a muddy-sandy seashore – is enigmatic, and indeed intriguing.

In *Manual of Ornithology, The Water Birds*, published in 1834, Thomas Nuttall writes this about Buff-breasted Sandpiper: 'This elegant species... is not uncommon in the market of Boston, in the month of August and September, being met with near the capes of Massachusetts Bay.' First point to note: 'not uncommon in the market of Boston.' There was no railroad connecting Texas or Louisiana to Boston back then, so harvests were clearly local, or from nearby. And

the species was 'not uncommon' in Massachusetts back then. Nuttall also points out that he saw it near the capes of Massachusetts Bay. He doesn't say whether on a grassy patch, or on a muddy-sandy beach on the cape, but it is possible that it could be the latter.

Between 1839 and 1842, artist Isaac Sprague, from Hingham, a small town southeast of Boston along Massachusetts Bay, made nine shorebird watercolors, one of which was an exquisite portrait of Buff-breasted Sandpiper. In "Pectoral Sandpiper, Grass bird," Sprague draws our attention that it is a grass bird. For the Buff-breasted Sandpiper, however, by including what appears to be seashells in the lower left, he makes it evident that the bird is standing on a muddy-sandy seashore, not unlike what Fuertes did more than 80 years later. With artists Sprague and Fuertes as bookends, separated by nearly a century, and supplemented with shorebird science, I offer this hypothesis as a question: 'Is it possible that before the European settlement of North America, and even till the mid-19th century, there was a reasonably viable fall migration stop-over for the Buff-breasted Sandpiper on the coasts of New England, which was lost by the early 20th century and it never got reestablished despite the passage of the 1918 Migratory Bird Treaty Act?' The history of shorebird annihilation in the US is full of gaps and incomplete knowledge. Visual and material culture may help us to fill some of the gaps, though not all.

Anecdotal accounts from the 19th century suggest that shorebird numbers were so massive that the birds would 'darken the sky,' or 'block out the sun,' which scientists today consider to be more evocative than quantitative. But these scientists also say that the numbers were indeed very huge: nothing like that exists today. A logical question to ask then would be: Can we quantify the scale of the massacre? John James Audubon recounts a hunt in Louisiana that he witnessed in 1821: in one day, in one place, about 48,000 golden plovers were killed by about 200 market gunners. Peter Matthiessen mentions a 'wagon load of plover and curlew' as a 'fair bag.' Levinson and Headley connect rural hunting sites to city game markets via railroads: 'Wheelbarrows full of curlews, plover, and whatever the winds brought in that day were emptied into barrels and taken by the railroads to market.' Shorebird scientist

Brian Harrington did a basic calculation of how many birds would be in one of those barrels – about 500 to 1,000 birds in each – pickled, packed and shipped to game markets. The *Shooting Journal of George Henry Mackay* is the only meticulously kept quantitative record we have, but it is the record of a sport, not a market hunter, and the record of one person, not the collective picture of massacre.

Like the quantitative record, the visual record is equally limited. It does not seem that the hunter in the picture is going to get a wagon load, or a wheelbarrow full of plover and curlew. There are almost as many shorebird decoys (a subject we will soon get to) on the ground as there are shorebirds in the sky. I think A.B. Frost's *Bay Snipe*, released in 1895, is not a celebration of shorebird gunning but rather it anticipates the end of that era. In that sense, it is a most unique and one of the most extraordinary works of shorebird art in the US. This, and another painting dated 1861, and a few other illustrations – is all that I've found so far on the visual history of shorebird annihilation in the US. I am wondering: Why is there a near-complete absence of visual depictions in American art – painting, drawing, illustrations – of shorebird massacre that happened from the early 19th through the early 20th centuries? By contrast, there is an extensive visual record of the bison massacre. But all hope is not lost, for there are other visual sources.

There is an old adage: When in doubt, trust your gut, not your brain. So, I went straight to the gastronomical visual archive. The *White House Cookbook*, first published in 1887, includes recipes for roasted Woodcock and Snipe. At an upscale restaurant in Boston, the exquisite dinner menu dated September 18, 1851, lists three species of shorebirds on the menu: Plover, Woodcock, and 'Doe-Birds', the last apparently refers to Eskimo Curlew, a species now thought to be extinct.

When it comes to visual history of shorebirds in the US, perhaps no other creative medium is as extensive and holds as much cultural history and significance as the Shorebird Decoy. It all started around 1850. In *Shorebirds: The Birds, The Hunters, The Decoys*, John Levinson and Somers Headley write: 'After 1850, when the great flocks of shorebirds began to rapidly diminish, the gunners realized the true value of



B. Frost, *Bay Snipe*, from the portfolio, "Shooting Pictures," Charles Scribner's Sons, New York, 1895

decoys. Large numbers of decoys were demanded by the market gunners, the baymen, and the sports. By the beginning of the 1870s, small factories were established to meet this increasing demand.' Beyond the factory decoys, there were also several decoy makers, each of whom had a distinctive style – form, design, color. By meticulously cataloguing shorebird decoys, Levinson and Headley, offer a reasonable list of the species that were hunted along the Atlantic Flyway. They found decoys of twenty-one shorebird species.

After the 1918 Migratory Bird Treaty Act was passed, the role of decoy to aid in shorebird hunting went away – and shorebird decoys then became aesthetic objects that people would buy to decorate their homes – decoys became craft. Starting in the 1960s, writers and collectors began to elevate decoy's position from craft to art – and some shorebird decoys started to fetch very high prices at art auctions. Decoys became art. And finally, in Alaska today, the shorebird decoy has become functional again, to aid in science, while retaining its place as art.

Finally, we arrive at the first National Call to Action – for Birds – in the US. In the February 11, 1886, issue of the widely read *Forest and Stream* magazine, its influential editor, George Bird Grinnell, published an editorial, which announces: 'We propose the formation of an association for the protection of wild birds and their eggs, which shall be called the Audubon Society. ... to prevent... (1) the killing of any wild birds not used for food; (2) the destruction of nests or eggs of any wild bird, and

(3) the wearing of feathers as ornaments or trimming for dress.'

Perhaps it was a strategic decision to go after fashion but not food, or the industrial-scale gunning to support the game markets. On the other side of the magazine page, is a letter to the editor from the influential ornithologist Frank Chapman, in which Chapman enumerates which bird species were on hats that he saw during two late afternoon walks in New York City: 41 species in total, including two shorebird species – Sanderling and Big (or Greater) Yellowlegs.

Exactly three years later, in February 1899, *Bird-Lore* was launched, with Frank Chapman serving as its founding editor, a role he maintained until the magazine closed in 1940.

Finally, we can compare and contrast the first and the third calls. In 2018, Stephen Brown said, 'I have spent my career on the study and conservation of shorebirds, a group of birds that many people have never heard of and don't think about.' If that is our reality, how are we going to bring shorebirds back? There is no easy answer, no silver bullet. It took 32 years – starting with the 1886 *Forest and Stream* call to action to the passage of the 1918 Migratory Bird Treaty Act. This time around, bringing birds back might be even harder, as the decline is not visible, and the public is unfamiliar with shorebirds. I offer three basic questions for us to consider:

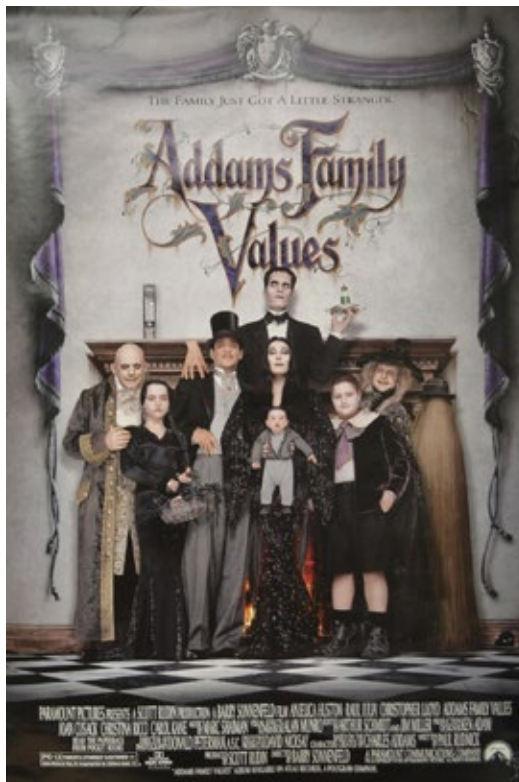
1. How do I introduce shorebirds to the residents of North America?
2. Who are shorebirds? and
3. Where can I find shorebirds?

Bird watching and bird guides vs. bird peril.

Spencer Schaffner's eye-opening book, *Binocular Vision*, says this about birdwatching field guides: 'In these texts, nature is typically represented, in both words and images, as ordered, clean, and untouched by human technology and development. This preoccupation with species identification, however, has produced an increasingly narrow view of nature, a "binocular vision", that separates the study of individual elements from a range of larger, interconnected environmental issues.' Not just birdwatching guides, but nearly the entire history of shorebird art in the US, famous TV programs like those of David Attenborough, and even the practice of nature journaling – have erased culture from nature in visual representations; the actual struggles that the birds go through are often kept out of our view. Birdwatching is largely (but not entirely) visual consumption without an ethic of engagement, or care for the well-being of the birds. So, who are shorebirds and how do we introduce them to the American public today? The poster of a popular movie may prove helpful.

Members of the Addams Family have lined up for a family portrait. We see the tiny baby in the front and the very tall butler in the back with the other members of the family with different heights. On the right, exactly the same: the very small, Red-necked Stint on the lower left and the very large Far Eastern Curlew on the upper right. The Australians appear to have embellished the colours in the middle section though. Four species in the middle – Ruddy Turnstone, Pacific Golden Plover, Great Knot, and Asian Dowitcher – are all northern breeders and only spend non-breeding time in Australia. A more authentic depictions of those four would be mostly grey, non-breeding plumage, while the one on the front row – Red-capped Plover breeds in Australia, and the colours are appropriate. With that slight adjustment of color in the middle – the shorebirds group portrait on the right and the Addams Family group portrait on the left would be nearly identical – mostly drab with only a tiny dash of colour.

So, why would anyone want to look at a group of people or a group of birds that look so drab? The answer is in the poster itself: 'The Family Just



Adams Family and shorebirds

Got a Little Stranger. 'We, humans, are intrigued by that which looks strange. Strangeness is about difference, and difference is the foundation of diversity. The Australian *Shorebirds: Identification booklet* is splendid and, it is FREE! By contrast, there is a folded identification booklet, *Shorebirds of North America*, which costs \$7.95, and is extremely boring. I urge all of you to consider creating a shorebirds booklet like the one the Australians have done, but make it stranger and infuse satire, and make two versions, one with the birds in breeding plumage and other in non-breeding plumage – and make it FREE – a necessary first thing we must do for shorebirds in response to the call, "Bring Birds Back."



When visiting New Zealand Subhankar took the opportunity to catch up with an old acquaintance - US Ambassador Tom Udall. Keith Woodley, Ambassador Udall, Subhankar Banerjee. DEVON WOHL

Shorebirds

Identification booklet



birds are in our nature

birdlife
AUSTRALIA

Chatham Islands Revisited 2024



Shore Plover Habitat Rangatira ADRIAN RIEGEN

He claims to be retired, but **Adrian Riegen** certainly keeps busy. Here he reports on his latest stint as a volunteer helping monitor the Shore Plover population on the Chatham Islands.

One morning in early February 2024 I found myself standing on the bow of the Acheron II, a small but very sturdy fishing boat, waiting for the moment when the swell brought the bow level with the unforgiving volcanic rocky platform, at which point I took a leap of faith onto Rangatira Island, before the bow slipped below the rocky ledge once again. Minutes later with six people safely ashore and all the gear needed for a two week stay safely stashed on rocks above the reach of the waves, Glen skilfully backed the Acheron away from the rocks and with a wave was gone, leaving us to listen to the *chip, chip, chip* of the Shore Plovers, a sound that would dominate the coastal landscape for the next two weeks.

What a privilege it is to be back on such a wonderful island. Although farmed until the 1960s it is now a fully protected and pest free Nature Reserve, teeming with millions of seabirds and much smaller numbers of land birds. Landing on Rangatira is prohibited without permits, so the island is only visited a few times a year with each visit arranged to undertake specific tasks. The visit in February each year revolves around Shore Plovers and Chatham Petrels.

First up is the Shore Plover census. This requires two teams of at least two people. The two teams start 300m apart but accessed from two different directions. Shore Plovers regularly fly across this 300m inaccessible stretch of coast. Once both teams are happy no double counting has occurred, they set off in opposite directions counting all Shore Plovers, recording them as male, female or juvenile. The challenge is not to double count the birds as they fly back and forth through their territories. The numbers from the two teams are tallied up and two or three days later the count is repeated. If the two totals are within five percent of each other the count is deemed successful. If a greater margin between counts is recorded, then a third census is undertaken.



Male Shore Plover ADRIAN RIEGEN

There are also colour-banded Shore Plovers, known as sentinel birds and so we searched for them on the first day. Most of these marked birds should be found but if a few are missing it may indicate a potential predator incursion. On this occasion the censuses recorded 147 and 149 adults on the two days, with enough colour-banded birds found to be confident all was well. Only 18 Juveniles were counted, down from 34 the previous year.



Juvenile Shore Plover ADRIAN RIEGEN

Any mammalian predators reaching Rangatira could be devastating to the wildlife and so every effort is made to see this doesn't happen, hence the extremely strict quarantining process before visiting the island. Several lines of tracking tunnels are also laid out around the coast and alongside walking tracks. Fresh white cards with a central inkpad are put out on each visit with a dollop of peanut butter in the inkpad to attract whoever likes the stuff! After a couple of days, the cards are retrieved and inspected for footprints. Weta and skink prints predominate, and the peanut butter is usually all gone.

Two other key tasks on the February visit are to band the juvenile Shore Plovers and check on the Chatham Petrels in the artificial burrows. In addition, night-time searches for unbanded Chatham Petrels will be undertaken. There are some 200 artificial burrows used by Chatham Petrels and by February they are usually back in residence, with egg laying well underway. A roll call is conducted to see which bird of each pair is in residence and this is done as soon as possible after our arrival on the island. Each parent may incubate for up to two weeks so to find as many parents as possible the burrows are checked early in the visit before changeovers occur. These checks continue throughout the two-week stay. Any new birds in the burrows are banded and those missing are recorded. Obviously, some die each year, and the remaining bird may then pair up with a new partner.

Over the years a great deal of knowledge has been gathered from these marked birds. The population stands at only about 2,000 birds. The burrows have special entrance flaps fitted to stop the Broad-billed Prions entering, as they try taking over the burrow from the Chatham Petrels and may attack and even kill them. There are hundreds of thousands of broad-bills, so they are actively kept out of the monitored burrows.



Chatham Petrel ADRIAN RIEGEN

The purpose of my visit was to oversee the banding of all juvenile Shore Plovers. Each juvenile is caught and fitted with a single metal band. This will help track any that are recruited to the breeding population should they ever be caught again. Most juveniles have fledged by February and spend their time on the rocky platforms where they feed on a range of small organisms washed in by the waves. They can be quite mobile, flying around the coast - covering in minutes, distances that would take us hours to walk, so some manage to avoid capture. Birds are caught using noose mats, a small strip of plastic fencing mesh with many nooses standing upright. These mats are put where the birds like to walk, and in theory they walk through the mat and get a leg caught thus tightening the noose and holding the leg until they are extracted by someone who has been waiting just a few metres away. Sometimes the nooses catch a bird the first time it walks over it. Others need to be walked over the mats numerous times before being snared. This can be a slow process with only a few caught each day. Those avoiding capture completely may be caught in subsequent years.



Noose Mat in action ADRIAN RIEGEN

This season we assume some clutches were lost as we found several small chicks presumably from second clutches. After two weeks we had captured 23 juveniles and three small chicks, while at least two juveniles avoided capture. Two unbanded second year birds were also caught. Most pairs only seem to raise one chick to fledging in spite of laying 2-3 eggs. The Rangatira and Mangere Island Shore Plovers are the only self-sustaining populations and eggs are sometimes taken to help establish the mainland populations.

The highly infectious H5N1 avian flu that is now sweeping the world, killing millions of birds, is of great concern and should it reach these remote islands it has the potential to be devastating to both sea and land birds with so many birds living close together. But for now, thanks to the wonderfully dedicated Department of Conservation team on the Chatham Islands the birds are well cared for and hopefully the islands continue to be a safe home for so many endangered species. Establishing populations in other places is a valuable insurance against losing the Shore Plovers from these islands.



Let us introduce you to the wonders of our Southern night sky.

The Pūkoro Shorebird Centre is a short distance from Auckland city but surprisingly gives us a wonderful clear view of the night sky with little light pollution.

On our course we will discuss what we can find in our sky; star patterns/constellations and the clusters, galaxies and nebulae, before a more practical session on how to see these celestial treasures with binoculars and small telescopes.

The perfect course leading into Matariki!

Cost | \$140 | This includes tuition, accommodation, and meals
 All enquiries | Pūkoro Shorebird Centre | 09 232 2781 |
 admin@shorebirds.org.nz

Pūkorokoro Miranda Naturalists' Trust



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Magazine

Pūkorokoro Miranda Naturalists' Trust publishes *Pūkorokoro Miranda News* four times a year, in print and digital editions, to keep members in touch and provide news of events at the Shorebird Centre, the Hauraki Gulf and the East Asian-Australasian Flyway. No material may be reproduced without permission.

Acting Editor: **Keith Woodley**
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See the birds

Situated on the Firth of Thames south of Kaiaua, the Pūkorokoro Shorebird Centre provides a base for birders right where the birds are. The best time to see the birds is two to three hours either side of high tide, especially around new and full moons. The Pūkorokoro high tide is 30 minutes before the Auckland (Waitematā) tide. Drop in to investigate, or come and stay a night or two.

Budget accommodation

The Shorebird Centre has bunkrooms for hire and two self-contained units: Bunks cost \$20 per night for members and \$35 for non-members. Self-contained units are \$90 for members and \$135 for non-members. For further information contact the Shorebird Centre.

Become a member

Membership of the Trust costs \$50 a year for individuals, \$60 for families and \$75 for those living overseas.

As well as supporting the work of the Trust, members get four issues of PMNT News a year, discounts on accommodation, invitations to events and the opportunity to join in decision making through the annual meeting.

You can join at the Centre, pay via our webpage (www.shorebirds.org.nz), by direct credit to bank account 02-0290-0056853-00 or call the Centre with your credit card details. Contact admin@shorebirds.org.nz for further information.

Bequests

Remember the Pūkorokoro Miranda Naturalists' Trust in your will and assist its vital work for migratory shorebirds. For further information contact the Shorebird Centre.

Become a Volunteer

There's always a need for volunteers to do a variety of jobs including helping in the shop, guiding school groups, meeting visitors at the hide, working in the Centre garden, joining in the restoration project at the Findlay Reserve, helping with the Shorebird Census and lots more. If you're interested chat with the team at the Centre to see what will best suit you.

PMNT's work is made possible by the generous support of our sponsors



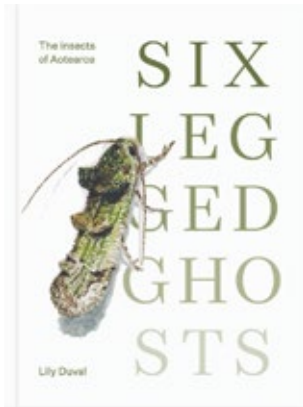
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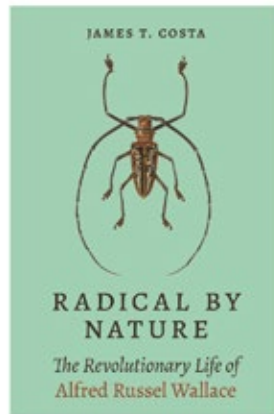


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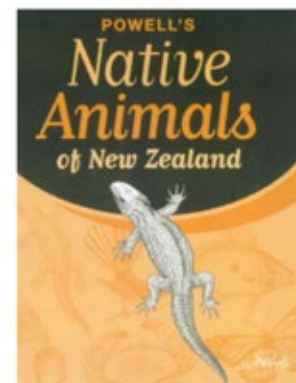
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We'll be happy to help