Pūkorokoro Miranda NEWS

Journal of the Pūkorokoro Miranda Naturalists' Trust

May 2025 Issue 136

From the Chair

It is nine months since I had the honour and privilege of being elected chair of PMNT. I would like to acknowledge and thank all the people that have come before me for their hard work and vision, to develop the Trust and continue with our core aim of keeping the birds coming.

We have terrific staff here in Keith, Chelsea and Tansy who show real commitment to their roles. Volunteers have contributed hugely to the cause, particularly over this last extremely busy summer. Peter Fryer and Tansy worked tirelessly to get our building ship shape ahead of the Governor-General's visit in March.

We also had the pleasure of having Wendy and Alan Pilkington in residence for five weeks in February and March, with Wendy running the shop and Alan at the hides sharing his bird knowledge with our many visitors.

I must not forget all our other members and volunteers who rally around for working bees, gardening, pest plant control and guiding; without your support the Trust would struggle to function effectively.

Also, a special thanks to all council members for your time ensuring we have proper governance. I acknowledge Adrian Riegen particularly, who visits not only for birding, but to get things done. And with Adrian, when there is a job to be done, there is no mucking around.

PMNT's 50th anniversary is an occasion well worth celebrating. Our Year of the Wrybill events calendar began with Autumn Migration Day on 2 March, when Phil Battley from Massey University gave an inspiring overview of research into Bar-tailed Godwits over the last few decades. I think most of us will have learnt something new about these fascinating birds. An account of his talk appears in this issue.

The visit of Her Excellency Dame Cindy Kiro and her team on 4 March was undoubtedly a personal highlight. Other distinguished guests included Chinese Ambassador His Excellency Wang Xiaolong, Mr Shinji Mitsui, Consul General of Japan, Mr Hong-ki Kim, Consul General of South Korea, Jennifer George, CEO of the East Asian-Australasian Flyway Partnership and her husband Gareth Bodle, a delegation from Beijing Forestry University, senior DOC staff, Waikato Regional Council Chair Pamela Storey and Hauraki District Mayor Toby Adams.

Stuart Laurenson receiving gift from Jennifer Geoerge. ADRIAN RIEGEN

The day dawned cloudy with a hint of rain (which thankfully passed us by) and a sense of anticipation in the air. The marquee was up, the potholes in the driveway repaired, and the Shorebird Centre with its fresh coat of paint and new stairs looking very tidy.

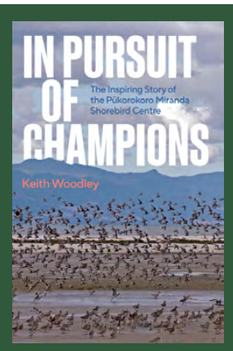
Ngāti Paoa arrived early as arranged, and we were all guided through the protocols of tikanga by charismatic kaumatua, Hauauru Rawiri. Following the powhiri, the Governor General spoke, commending the Trust for its 50 years of achievement, after which she led the Government House team in a waiata. Brief speeches from Keith and Phil were followed by lunch, and an excursion to the hides.

Here was what the day was really all about, and the birds did not disappoint, with godwits and knots in breeding plumage, big flocks of oystercatchers and Wrybill. Tansy escorted Dame Cindy, who was keenly interested in the various species and their stories.

There is more to come this year. On May 4 our AGM will be followed by Keith Woodley taking us through 50 years of the Trust. And on Sunday 31 August we have scheduled a members' lunch.

We look forward to seeing you all then.

Stuart Laurenson



If you do not already have a copy of this book, it is highly recommended. In this 50th anniversary year of PMNT, you will get the full story behind the Trust and its people. You will also be supporting the Trust.

EVENTS CALENDAR

AGM Sunday 4 May 10am
Speaker: Keith Woodley on 50 years of PMNT

27-29 June Astronomy Course
with Kevin Barker and Olga Brochner

16 August Working Bee and Potluck Dinner

31 August 50th Anniversary Member's Lunch Details to be announced

26-28 September Printmaking Workshop with Sandra Morris

12 October Spring Migration Open Day
Speaker: Dan Ruthrauff, US Geological Survey, Alaska

RECENT SIGHTINGS AT PŪKOROKORO

800 Bar-tailed Godwits
1 Sharp-tailed Sandpiper
59 Pacific Golden Plovers
6,000 Pied Oystercatchers
2,100 Wrybills
136 Banded Dotterels
59 Royal Spoonbills

COVER Former chairs Stuart Chambers, David Lawrie and Gillian Vaughan with Dame Cindy. Also Keith Woodley and current Chair Stuart Laurenson GOVERNMENT HOUSE

SNIPPETS

Lottie Glover PETER FRYER

New steps and refurbished approaches KEITH WOODLEY

Front deck benches refurbished and painted. KEITH WOODLEY

Summer at Pūkorokoro

This summer season has been our biggest yet, with record numbers of visitors at both the Centre and bird hides. With the new point of sale system going live only days out from Christmas, I needed to get myself up to speed promptly. Until February, when we could start getting volunteers familiar with the new system, either Chelsea or I were confined to the shop.

Which also means we were extremely grateful for the support we had for other tasks from resident volunteers. Field Course participant Rhiannon Myers came along to volunteer for a week beforehand. It was remarkable how quickly she was up to speed with our operations, and so was of considerable assistance in the shop, around the Centre and at the hides. A few weeks later Lottie Glover spent a week volunteering, and she too was quickly on top of things.

Rhiannon Myers

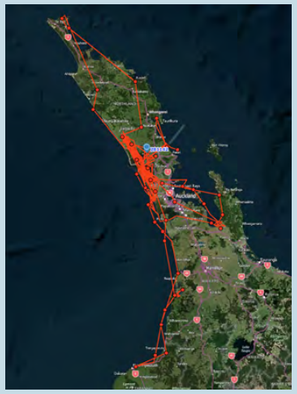
Shore guides Alan Pilkington (L) and Peter Fryer SUE TOWNSON

Wendy Pilkington busy as usual. SUE TOWNSON

Peter Fryer was here from October to the end of March ostensibly as our shore guide. While he did an exemplary job of that, receiving rave reviews from visitors, he also put in a prodigious effort around the Centre. With considerable assistance from Tansy, the entire building has been repainted. Peter replaced the steps at the front entrance as well as those leading to the decks. Deck balustrades were all scraped and painted. Peter also installed brackets for new open/closed signs designed by Chelsea. These and many other maintenance tasks around the building, meant the Centre was looking very smart ahead of the Governor-General's visit.

Our thanks also to Wendy and Alan Pilkington who returned for another summer stint, this time for five weeks through February and early March. Once again Wendy spent many hours staffing the shop, while Alan assisted with guiding at the hides. Wendy mastered the new sales system astonishingly quickly , which meant Chelsea and I could relax a bit.

Fairy Tern at Pūkorokoro



Tara-iti track DOC

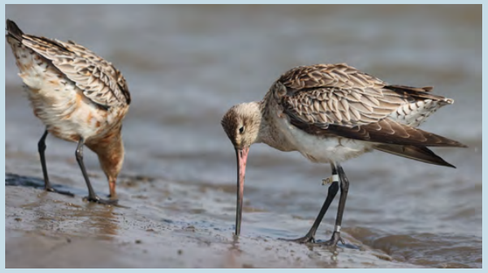
Tara-iti /Fairy Terns are very rarely seen at Pūkorokoro which, given how few there are, is not surprising. Whenever one is reported we always need be careful to eliminate the similar-sized Little Tern, a semi-regular straggler from Australia or Asia. When a bird turns up with colour bands, however, any doubt diminishes. When it also turns out to have a tracker, doubt is eliminated completely.

A young Tara-iti, part of the DOC-Auckland Zoo Tara-iti captive rearing programme was fitted with a small "backpack" transmitter to track its movements. In four flights during February and March it clocked up more than 1700 km. Over two days in late February, the bird covered 508 km on a trip around Northland, leaving from and returning to Kaipara Harbour. Two weeks later, in mid-March, it set off on the first of two visits to Thames in Coromandel, covering more than 600 km in total. Senior Biodiversity Ranger Alex Wilson says, "Up until now we have had to rely on incidental reports of juvenile Tara- iti outside their known habitats, gathered by volunteers over many years – so the tracking data from this bird gives valuable insight into the capabilities of young birds.'

www.doc.govt.nz/news/media-releases/2025-media-releases/tiny-tara-iti-travels-near-and-far/

ZYD arrives in China

Our old friend Mr Qingquan Bai, who lives in the vicinity of Yalu Jiang, sent these remarkable images of one of our godwits newly arrived in China. He writes: 'The engraved white flag ZYD was found by me on 18 March, with this bird and her fellows feeding along the shore. They walked to within 3 m of me, which was too close to focus, and we looked to each other for a while, and then they kept on feeding. They were too hungry and ignored me sitting there: an amazing experience.' The way the primary flight feathers are sitting, called 'wing droop' is a classic indication of a bird newly arrived off a long-distance flight. Adrian reports ZYD was last seen at Pūkorokoro on 2 March 2025. The first confirmed departures from Pūkorokoro this season were on 9 and 10 March, and it seems likely ZYD could have been in one of those.



ZYD newly arrived in China QINGQUAN BAI

ZYD QINGQUAN BAI

Governor-General Visits the Shorebird Centre

On Tuesday 4 March, as part of our 50th anniversary celebrations we invited Her Excellency the Rt Hon Dame Cindy Kiro, Governor-General, to an event commemorating our long engagement with the East Asian-Australasian Flyway. Others in attendance included the Chinese Ambassador, the Consul-Generals of Japan and the Republic of Korea, and a delegation from Beijing Forestry University.

HE Dame Cindy Kiro GOVERNMENT HOUSE

Governor-General's Address

I have an ever-expanding list of dignitaries to acknowledge. His Excellency Xiaolong Wang, Ambassador of the People's Republic of China, Mr Hong-ki Kim, Consul-General of the Republic, of Korea, Mr Shinji Matsui Consul-General of Japan, Herearoha Skipper, Chair of Ngāti Paoa Iwi Trust Board, Stuart Laurenson Chair of PMNT, Keith Woodley, Shorebird Centre Manager, and of course to all the rest of you who are here to support this Kaupapa, I am immensely grateful for you being here.

I am here to celebrate the 50th anniversary of the Pūkorokoro Miranda Naturalists' Trust. What an achievement.

Aotearoa New Zealand has evolved over time to be a perfect haven for our birds, our Manu. Our geographic isolation, the lack of mammalian predators and a favourable climate meant birds had every opportunity to thrive and evolve, to fill the ecological niches that elsewhere would have been taken up by other creatures. When Joseph Banks accompanied Captain Cook on his first journey to Aotearoa in 1769, he wrote of being awoken by the deafening dawn chorus coming from the shore, half a km away from where the *Endeavour* lay at anchor. Banks described the morning bird song as the most melodious wild music he had ever heard.

We can be grateful that such experiences can be had again on a few island sanctuaries, and we owe much to the individuals and the organisations that have dedicated themselves to eliminating predators and restoring habitats. Inland sanctuaries such as Maungatautari and Zealandia are also having a halo effect where native bird populations move along corridors of bush into surrounding landscape. At Government House in Wellington, we have seen the rapid increase in Tui, Kereru and Kaka thanks to the restorative effects of Zealandia.

I recently had the privilege of awarding the Seabird Smart awards which recognized exemplary efforts to protect our seabirds from harm caused by the fishing industry. The supreme award winner Greg Summerton had developed a commercial fishing method based on traditional Māori hinaki, which eliminated bycatch and resulted in zero seabird deaths. He is now sharing that design with the fishing industry around New Zealand and internationally.

Today I am pleased to recognise the team behind Pūkorokoro Miranda Naturalists' Trust, who have dedicated 50 years of their time and expertise to further understand these extraordinary shorebirds, monitoring their record setting flights and conserving the environment at their journey's end.

Following her address, Dame Cindy led the Government House team in a waiata. At its conclusion she told the audience: 'You won't see a Head of State doing that anywhere else." GOVERNMENT HOUSE

For our migratory birds New Zealand is merely a piece of a much larger picture, the East Asian-Australasian Flyway. A significant effort has been required to protect every section along the flyway. And I commend the PMNT for fostering positive working relationships with international partners along the birds' flight paths.

It's a story that serves to remind us that global issues can be addressed if you collaborate to arrive at workable solutions. As Governor-General I have the honour of recognising New Zealanders who do great things for our communities, not for monetary gain but because they are passionate, driven, and who have a genuine care for others and our native world around us. The volunteers at Pūkorokoro embody that ethos and I thank everyone who have given their time and energy to this cause. Your commitment to study the remarkable endurance of migratory shorebirds and to restore their habitats will help them to continue their remarkable journey along the Flyway in the years to come. I truly do offer my sincere thanks for all your dedication and your achievements over the past 50 years, and I wish you all very best for the next 50 and more years.

I must say it is an immense pleasure to be here as Governor-General representing the whole of the country and all the peoples of New Zealand to acknowledge this mahi, but also to bring together China, Japan and the Republic of Korea because this recognises that we are actually part of a journey together, to try and protect the things that matter to us. And isn't it amazing – and I am sure we will hear more of it – these birds actually fly and migrate those distances. Good heavens, what an incredible achievement.

Let us all try and remember that we are connected by the shared journey of the creatures that we value, and we must do more together to protect not only them but also to continue our flyway together.

Below: L-R Adrian Riegen, Bruce McKinlay, Keith Woodley, Tinaka Mearns, Dame Cindy Kiro, Clare Fearnley, Hilary Aikman, Avi Holzapfel, Stuart Laurenson, Toby Adams, Pamela Storey GOVERNMENT HOUSE

Keith Woodley address

We are very proud of our achievements here at Pūkorokoro, and this is a proud day for us. And it is made even more special by the presence of Your Excellency, as well as all our distinguished guests. It really does mean a great deal to us.

I want to make some brief remarks, by way of acknowledgments, to cover our long engagement with the Flyway. First, welcoming Her Excellency to this occasion, and also His Excellency Mr Wang Xiaolong, Ambassador of the People's Republic of China. The coastal wetlands of China are of immense importance to our shorebirds, and we commend the recent initiatives by China to protect remaining coastal wetlands through initiatives such as World Heritage listings. This is a massive step forward and we all congratulate China for doing that. There is more work to be done, of course, to secure a future for these birds but these are good steps.

I acknowledge Mr Hong-ki Kim, Consul-General of the Republic of Korea. There are coastal wetlands remaining in Korea that are important for our shorebirds, and we have a lot of connections through banded birds: there are many places in Korea where our banded birds have been recorded. We also commend Korea for hosting the East Asian-Australasian Flyway Partnership (EAAFP) Secretariat.

I also want to welcome Mr Shinji Matsui the Consul-General of Japan. Now Japan has played a very important role in the Flyway. In 1994 at Kushiro, Japan hosted a meeting of governments, NGOs and researchers, all of whom were concerned about the declining bird populations in the Flyway, and from that meeting stemmed everything else. From this event here today, you can draw a direct line back to Kushiro. Subsequently the governments of Australia and Japan gave resources to set up what became the East Asian-Australasian Shorebird Site Network that was launched at Brisbane in 1996, and PMNT was involved in that from the very beginning. And from that EASSSN evolved the EAAFP which we have today. And we particularly welcome Jennifer George who is the Chief Executive of the Flyway Partnership based in Korea, and who is also a member of the Trust.

From our perspective, all our efforts in the Flyway - through the entire history of our engagement with these migratory networks – is down to Adrian Riegen. He represented the Trust at that meeting at

Kushiro in 1994, and all our activities in the Flyway have stemmed from that. He has led all our expeditions to China, to Republic of Korea, to the DPRK. We also acknowledge that, somewhat unusually, for we don't see so much of her, Adrian's wife Janice is also here today. So, we particularly welcome Janice.

I should also mention our institutional memory, David Lawrie, who has been involved with the Trust since before it was formed and is currently our international liaison.

All our efforts – working in China, doing shorebird counts there and in Korea since the early 2000s, was a rewarding exercise. However, it was also a challenge to keep despondency at bay, such was the sheer scale and pace of habitat destruction through development around the Yellow Sea coast, with a backdrop of declining shorebird populations. Each year we would come back thinking that was awful. This gathering today represents change, represents how we have come a long way, that there is work being done to turn that around and secure a future for these shorebird populations. That has been great for us.

Until 2011, while most other countries were represented at government level, PMNT was the only New Zealand representative working in the Flyway. Then our government joined the partnership. For us here at the Trust this meant a step change. Department of Conservation was the responsible agency, and Bruce McKinlay was appointed as the Flyway Officer. Now Bruce has done a fantastic job in that role and we at the Trust have been immensely grateful for his advice and support. Bruce is about to retire – somehow, he has managed to be allowed to retire – but his role will be taken up by Cassie Mealey who is here as well. Cassie – big boots to fill, but we welcome you and look forward to working with you.

So, with that DOC and government involvement – it meant we were no longer just an NGO working in China, we were able to get traction at higher levels. And there came a very satisfying time in 2014 at Dandong when we launched our report based on ten years of shorebird counts at Yalu Jiang, our sister site. That report documented how Yalu Jiang was the most important staging site in the flyway, bar none. And to launch that report we wanted to make it as big an event as possible, so we managed to get then New Zealand ambassador Carl Worker over from Beijing to Dandong to help launch that report and that was a very memorable occasion. One of Carl's successors as ambassador to Beijing, Clare Fearnley, was there through Covid but she also got the shorebird bug, and she was working with the other diplomatic communities in Beijing to raise awareness of shorebird issues. We are really grateful for that.

We also welcome the delegation from Beijing Forestry University, led by Mr Wang Whongyaun, and Professor Lei Guangchun, who we know and who is a wonderful resource for the flyway and has done some excellent work for shorebirds.

We have with us members of the Department of Conservation. Now they are a big part of the picture. During my time here – almost 32 years – we have had really good and strong relationship with DOC. While its people have come and gone, it has always been a great support for us. Hilary Aikman, Director of Terrestrial Biodiversity is also Cassie's boss, so she is here to keep an eye on that; also, Tinaka Mearns Regional Manager, and I want to particularly point out Avi Holzapfel, Operations Manager for Hauraki. Avi and his team have been of immense support to us and some of them are out there working for us today.

Now to finish up, after we leave here, after lunch we are going down to the Robert Findlay Reserve, 2 km down the road. When you came up this morning you may have seen what makes it all matter, all those birds lined up on the Stilt Ponds. And if they have read the script, if they follow the script today, they will all be there after lunch. Now the significance is the Robert Findlay Reserve was purchased by this Trust in 2015, and we received a grant for half the purchase price from Waikato Regional Council, so I particularly want to acknowledge Pamela Storey chair of WRC who is here, and also Toby Adams Mayor of Hauraki.

So, it is great to have everyone here for this event. Our motto is Keep The Birds Coming and that is what we are about. Kia ora.

Phil Battley address

This is an auspicious event because this week something extraordinary will happen. The first of the kuaka, the godwits will take off. They will take off from the tidal flats in the late afternoon in flocks of 50-70 birds, they will form a V and fly slowly up Tikapa Moana the Firth of Thames and out of sight. They will fly through the night and through the next day. They will fly through the next night and the next day, and then the next night and day. And I am not even halfway there yet.

This flight will take seven or eight days. This is Tuesday. If birds were to leave here today, by Sunday night – you try to remember – they are still going. In doing so they will do something that no other creature on the planet does; they will directly link Aotearoa New Zealand with China, with the Republic of Korea and with Japan. If the winds are good the birds will fly all the way to Yalu Jiang, or the coast of Korea. If the winds are bad, they may stop in Okinawa for 3-4 days and then carry on. So, this one species in one event does something that nothing else in the world does, and that is this direct line between these places.

We know this through research, we know from satellite tracking, and with advances in technology being driven around the world, a lot of it in China these days. They are getting these tiny miniature tags that we can track - and this is revealing for the first time where these birds are going, what areas they are using and how long they are there for. This is information that can be used for conservation; we can identify the hotspots we need to know about, maybe we can go there and find risks that need to be managed. We can't do this. We can put tags on, but we cannot conserve anything in China, or Korea or Japan. But governments can, and organisations can, and we researchers can work together. So, we have around us the tools we need, we have the recognition of what we may have to do.

Now we have very good knowledge on some species – kuaka in particular. We have very poor knowledge on other species that we have here. Ruddy Turnstones for instance – we know nothing about their migrations. The Red Knots that you will also see today, we are only now discovering they have a stopover site, probably in Indonesia, in West Papua, or northern Australia. We have never been there, we don't know what it is like - so we are starting to fill in the gaps, starting to evaluate where are the needs for these species, and this is where combinations of bodies can play a role.

And PMNT has been for decades one of those bodies. They have supported the research we have done here in Pūkorokoro. This is our research base. They have been going to China working at Yalu Jiang doing surveys – and these surveys are crucial for understanding shorebird populations. And unfortunately, one thing we need to consider is our world is changing. Modelling suggests that shorebirds may have to change how they migrate in the future to compensate for climate change. One prediction is that the kuaka that now go all the way up to China may have to do something different. They may have to change their migrations, have shorter flights and more of them. Where could a shorter flight be? Maybe it could be Japan, maybe they will be shifting back to Japan. We don't know.

The monitoring that we do tells us what is happening now, but monitoring needs to be continuous to find out what happens as we change, and it is through understanding this change that we understand the needs of these birds. Through having these bodies - from governments to researchers at universities and groups such as PMNT, hopefully we can collaboratively secure the future for these birds.

So, I would like to say an incredible thanks to all those involved with the Trust these five decades.

I gave a presentation here where I showed that the year of the founding of PMNT was a memorable year for many things, including I went to school for the first time. So, my education started in 1975, if it carries on there may be people who start school today who in 20 years' time will be researchers working at Pūkorokoro through to the next 50 years. So thank you all for coming and supporting the research and may we continue to work together.

Waiting to welcome the Governor-General SUE TOWNSON

Governor-General's Visit 4 March 2025


Powhiri guests arriving SUE TOWNSON


Dame Cindy with Tansy Bliss SUE TOWNSON

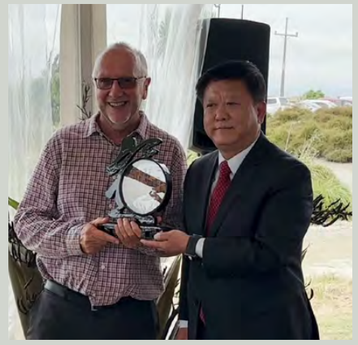

Flyway Officer Bruce McKinlay, former NZ Ambassador to China Carl Worker, and Prof Lei Guanchun, Beijing Forestry University SUE TOWNSON


L-R Wang Whongyaun, Chinese Ambassador Mr Wang Xiaolong, Japanese Consul-General Mr Shinji Matsui, Korean Consul-General Mr. Hong-ki Kim GOVERNMENT HOUSE


PMNT council member Olga Brochner with Beijing Forestry delegation. l-R Li Liang, Luo Yang, Wang Hongyaun and Qing Zeng SUE TOWNSON


Ngāti Paoa kaumatua Hauāuru Rawiri speaking SUE TOWNSON

Flyway partnership Banner L-R Dr Qing Zeng, Jennifer George, Ms Yoon Kyung Lee, Deputy Chief Excecutive EAAFP, David Lawrie SUE TOWNSON


Stuart Laurenson receiving gift from Beijing Forestry University ADRIAN RIEGEN

Ngāti Paoa representatives L-R Anaru Castle, Arnold Gurau, Rudi Robinson, Hauāuru Rawiri, Lisa Tauroa, Dame Cindy, Herearoha Skipper, Drina Paratene, Tipa Compain, John Hutton, Apanui Skipper GOVERNMENT HOUSE

Reflections of 50 Years at Pūkorokoro

David Lawrie is our institutional memory. He has been involved with Pūkorokoro since before the Trust was formed. He has been a member of the Trust council every year since, serving long stints as treasurer and chair. Here is the first part of his account of the early days of the Trust and the Shorebird Centre.

My involvement with Pūkorokoro really started in late 1964. At that stage I was living at Clarks Beach and attending Papakura High School. I always had an interest in birds but had no one to share that interest with.

One day in November 1964 I was wandering the paddocks with my binoculars. The local landowners were happy for me to do that because they knew who I was and where I was from. On this day however, I located a small group of oystercatchers in a ploughed paddock some distance from the sea, which I thought was unusual. I had my binoculars on these birds when a large Chevrolet car pulled up on the road and a large man got out. "Hey sonny what do you think you are doing?" he yelled. My immediate response was to flee, but unfortunately, I had roads almost all around me and knew I was trapped. So, I meekly wandered over to the stranger. When he saw that I had binoculars his interest was immediately heightened: he initially had thought that I was intending harm to the oystercatchers. The gentleman turned out to be Ross McKenzie and in the car was his wife Hetty. Once they were aware that I was interested in birds we got permission from my parents for me to go with them while they completed the summer wader census. Ross immediately signed me up as a member of the Ornithological Society and I have been a member ever since.

The relevance to Pūkorokoro, however, is that in future years Ross introduced me to Dick Sibson who also encouraged me.

Early influencer, Ross McKenzie, wearing an ear covering because of wounds sustained in World War One, is holding a copy of his book: *In Search of Birds in New Zealand: How and where to find them.* PMNT

Ornithologist, teacher and mentor, Dick Sibson. PMNT

The two of them frequently took me to Pūkorokoro - often going well out of their way to pick me up and drop me off. I did not become independently mobile with my own vehicle until I finished University in 1968.

Unbeknown to me a small group of people at the Auckland Ornithological Society meetings were holding discussions about building an observatory and accommodation unit at Pūkorokoro. They quickly realised that the services of a young surveyor and town planner could be useful and when the first committee was appointed in 1975 lo and behold, I found my name included on that list. Since that time, I have remained on the Trust council in various roles.

Initially, when it was thought that establishing an observatory on the Limeworks site would be relatively easy, I was appointed convenor of the building committee. Land had been promised by landowner Alan Lane, but using my newfound knowledge as a surveyor, I pointed out the difficulties of undertaking a subdivision adjacent to the Firth of Thames frontage. The New Zealand Wildlife Service at the time also strenuously objected to the prospect of a building on the seaward side of East Coast Road.

Both of those issues caused much frustration amongst the council as it became clear the initial dreams of the founders were not going to be realised on the preferred site.

In the late 1970s frustration increased as every effort to build the observatory at the Limeworks site was rebuffed not only by the Wildlife Service, but also Franklin District Council and Auckland Regional Authority. In desperation the committee arranged to utilise several old army huts on the western side of the road opposite the Limeworks site. Optimistically known as Curlew Cottages, these were rented from the Lane family for $2.00 a year but received very little usage. That they were quickly re-christened as the Rat Huts because of their most common residents, was part of the reason.

The'Rat Huts' in the late 1970s opposite what is now the Robert Findlay Reserve PMNT

In 1980 Brian Ellis took over as Trust chair and I became the treasurer. It was hoped that the change of officers would trigger some change in fortunes for the Trust. Following much debate the council decided to purchase a small building in Kaiaua Village with the intention that it could be rented by members who wished to stay the night, so they could go birding over the two-day period. The rental of the building, which became known as The Roost*, also created some problems in arranging for the key pick up and drop off, and as the building was located within a flood plain it was subject to the occasional minor flooding.

Up until 1982 all the meetings had been held in Auckland, either at Dick Sibson's house in Remuera or in later years at the office of Bruce Chambers in Carlton Gore Road. While this was convenient for the Auckland members it did result in considerable travelling for me, and more so for David Walter from Onewhero. The meetings were therefore moved to the Papakura Coquet Club in 1982 which also opened the way for members from Hamilton to join the council. The South Auckland branch of Birds New Zealand meets there to this day.

Little progress was made with any of the building proposals until 1985, although the Trust held several open days at the Miranda Hall, which sat near the junction of East Coast Road and Miranda Road.

These events showed that there was much interest in learning about natural aspects around the Firth of Thames and that the goals of the Trust were worth pursuing. In 1986 Alan Lane offered the Trust land on the western side of the East Coast Road as a potential site for purchase. However, his Solicitor cautioned against any subdivision of that land, reinforcing my earlier comments that this could lead to considerable difficulties with riparian margins and the reclamations that had already taken place.

In 1986 when Brian Ellis stepped down, Stuart Chambers became chairman, determined to make progress. At his first council meeting I was instructed to explore options of finding a portion of land to purchase along East Coast Road. However, while I was trained as a surveyor, negotiation was not a skill set I had.

The Limeworks site in the 1970s. This is where the Trust founders wanted to build the observatory. PMNT

Limeworks hide buiding bee 1979 David Lawrie and Gwenda Pulham on roof at right PMNT

I did however work with a land agent in Pukekohe who owed me several favours, so I contacted Malcolm Hunt and passed that duty to him. First, we examined the records and determined that there were no existing parcels of land that were suitable, so Malcolm approached every landowner between Pūkorokoro and Kaiaua to see if there were any that were prepared to subdivide and sell a portion to the Trust on the western side of East Coast Road. The only landowner that showed any real interest was Gordon Newbold who was prepared to sell approximately 1ha, if the Trust completed all the necessary consenting and subdividing procedures. Negotiations took place and a purchase price of $30,000 including GST was settled upon. Once the agreement had been signed my real work began.

The problem was that the subdivision of 1ha of rural land was a totally non-complying activity, as was the construction of an education centre. However, the Trust now had strong support from the Wildlife Service who had always advocated that our building should be on the west side of the road. Also in support was Auckland Regional Authority who could see the value in having an education centre adjacent to a site that was about to be designated a Ramsar Wetland of International Importance. This was sufficient support to convince the Franklin County Council to approve firstly the subdivision, and secondly the specified departure for the building.

Even with my donation of the services relating to these works the Trust still had a shortfall in the purchase price for the land. Stuart Chambers meanwhile had arranged for the QEII National Trust to take an interest in the property. They agreed to put an open space covenant over the property and in exchange would arrange for a donation towards its purchase. The Miranda Naturalists' Trust therefore donated $20,000 to the QEII Trust and received back a QEII Trust donation of $30,000, which included the Government subsidy. This then enabled the settlement of the purchase of the land by the due date of 31 March 1987.

The Shorebird Centre site as it looked in 1989. PMNT

So finally, the Trust owned its land but no longer had money to provide for the building. However, with the land settled it gave a firm foundation on which to base fundraising and building plans. David Baker therefore prepared preliminary drawings, but the QEII Trust who had a major stake in the land preferred that we employ a registered architect to prepare building plans. Paul Smits, an Auckland architect who had completed work for the Auckland Regional Authority was employed to produce plans. These became the basis of the current centre but as they were a little grandiose, especially since we only had several thousand dollars in the current account, there were significant modifications to the eventual building. As treasurer I was very cautious about proceeding until we had money set aside. However, Stuart Chambers taught me a valuable lesson that has guided me since that time. He said that the Trust should commit to proceed, and the members and benefactors would then support the building proposal. This is exactly what happened, although to reduce the initial outlay it was decided to build the Centre in stages and David Baker produced building plans based on the architect's original drawings.

To further raise capital, it was decided to sell the roost at Kaiaua which was a contentious committee decision. I arranged for a local valuer, Warrick Marsh to prepare a valuation, Yvonne Arnold agreed to purchase the building for the valuation. Warrick Marsh was a member of the Trust and has recently visited the centre and has completed several valuations for the Trust at no cost.

The capital raised by selling the roost was sufficient to purchase the materials and make a start on the building. The Trust obtained quotations from several builders and eventually accepted the quotation from a Katikati builder, Charlie Sutton and construction started in January 1990. The Trust made arrangement to purchase the materials directly and provide these to Charlie as the building work proceeded. To further reduce costs David Walter, one of the committee members, arranged his farm truck to collect materials and deliver them to the site.

*The original routed sign for The Roost is now displayed in the inner courtyard at the Shorebird Centre.

Golden Dodder identified near Kopuatai

Chelsea Ralls reports on a pest plant newly found in the region.

Cuscuta in Whangamarino ZOE LOADER DOC

In late 2024 Golden Dodder or *Cuscuta campestris*, commonly refered to as *Cuscuta*, was discovered on the edge of the Kopuatai peat dome in Hauraki. This parasitic plant is a threat to native species and our Ramsar wetlands.

Cuscuta was first discovered in Aotearoa New Zealand in 1941, thought to have been introduced in a contaminated import of crop seeds. It has been found infrequently in nursery and cropping type environments but has managed to infest the Whangape and Whangamarino wetlands in the Waikato.

It is unknown how it managed to make its way onto the edge of the Kopuatai Peat dome, but the real concern now is the ability for this weed to easily spread via plant fragments or seeds carried by people, animals, equiment and machinery and along the waterway.

Cuscuta germinates in spring/early summer near the soil surface, sending out long yellow-orange leafless stems that resemble spaghetti. The stems produce tendrils that coil around other plants, and on finding a suitable host plant, grow sucker-like roots called haustoria that extract water and nutrients. *Cuscuta* parasitises a range of crops plants, weeds and a few native species but also has the ability to smother other non-host plants.

This species is very fast growing – it can grow up to 5 metres in two months – but with flowering occuring after 51 days and viable seeds present at 60 days, it poses a threat to large areas in a relatively short time frame if not identified and managed as early as possible. One plant can produce up to 16,000 seeds that are viable in the ground up to 10 years.

In a Department of Conservation statement issued in March, Biodiversity Ranger Rachel Langman says the weed was discovered by DOC staff at Kopuatai while doing routine trap checks. "Kopuatai is a Ramsar site and an important habitat for threatened native species like Matuku-hūrepo/Bittern, Mātātā/Fernbirds, and native fish," says Rachel. "*Cuscuta* presents a real threat to those species if left unchecked. New Zealand's native species are unique and special, and most are only found here. Once they're gone, they're gone forever."

In a collaboration with Waikato Regional Council it was decided by both organisations that best way to manage the *Cuscuta* at the Kopuatai site was to spray it, dig it out and bury it onsite, to hopefully prevent future infestations says Senior Biosecurity Officer Kerry Bodmin. "Our biggest challenge with this job was making sure we did not inadvertently spread the Golden Dodder ourselves between sites, so that meant having a clear plan, keeping 'dirty' gear in the contaminated zones and 'clean' gear outside of these sites, and making sure all gear, machinery, vehicle tyres and footwear were thoroughly cleaned on site before being used at any other location."

We can help prevent the spread of Golden Dodder by checking for weed fragments or seeds on equipment, pets, clothing, gear, shoes, boats and animals around wetlands and waterways in the Hauraki and Waikato. If you see *Cuscuta* please report it to the Department of Conservation or Waikato Regional Council with a accurate details of the location.

DOC – 0800 DOC HOT (0800 362 468)
WRC – 0800 800 401

Cuscuta Plant RACHEL LANGMAN DOC

Cuscuta Stems RACHEL LANGMAN DOC

Cuscuta Seeds RACHEL LANGMAN DOC

Cuscuta Digger in Kopuatai RACHEL LANGMAN

What do we now know about Godwits? And how did we find out?

PMNT was born, but what else was happening in the world in 1975? The Vietnam War finally ended in April that year; *Jaws* was the top grossing movie worldwide; Whina Cooper led the Hikoi from Te Hapua to Wellington; and Phil Battley started school. This is an edited account of his talk at the Autumn Migration Open Day on Sunday, 2 March.

Banding session. L-R Clive Minton, Gwenda Pulham and Stella Rowe. Tony Habraken (top right) and David Lawrie (top left) ADRIAN RIEGEN

The question is what did we know about migratory shorebirds in 1975? I personally did not know much because I had only started school. Māori clearly must have known the behaviour of shorebirds well, because they knew them as food. And as we know you can't catch birds if you don't understand them. You often can't catch them even if you do understand them well! Catching godwits as they were flying over the Auckland isthmus would have only been achievable on certain tides, under certain moon conditions. But this was only within New Zealand. Outside the country godwits were birds of mystery.

In the 1880s Walter Buller knew something of them. 'I have already.... referred to the extraordinary migration which this bird performs every year, spending several months in Siberia, where it breeds, and another portion of the year in the Malay Archipelago, Polynesia, Australia and New Zealand, passing the coasts of Japan... and China in the course of its weary pilgrimage.'

In the first half of the 20th century, there were two important books by W.R.B. Oliver. In 1930: 'Pacific godwit breeds in Siberia and Alaska....The migration route both from Eastern Siberia and Alaska is through Japan, China and the Philippines. Probably a nonstop flight is made from New Guinea or Northern Australia to New Zealand.' Note he says 'breeds Siberia and Alaska' which is a bit of jump. By 1955 something had happened, and RDH Stidolph had done an investigation of godwits and figured they were further to the east. Presumably they were not finding records along the flyway where they thought they should be – so maybe they were coming over the SW Pacific east of Soloman Islands. But there were a few gaps in knowledge.

By the 1970s we have a *Checklist to Birds of NZ* published by the Ornithological Society of New Zealand. This has the correct scientific name for the subspecies *baueri* and has them 'breeding NE Asia to NW America and migrating to Australia and New Zealand.' Then in the *Field Guide to Birds of NZ* (1966) with Dick Sibson, a founding member of PMNT, one of the authors – 'godwits, breeding NE Siberia and NW America (possibly two sub species) migrating to Australia and NZ.'

Since 1975, we have learned quite a lot, and part of what we have learned is because of the formation of two groups – the Australasian Wader Studies Group (AWSG), and in 1979 the Miranda Banders, started by Dick Veitch, using cannon nets. From 1986 shorebird banding was carried on by Stephen Davies and Adrian Riegen, usually at Jordans Farm on the Kaipara Harbour. In 1987 there was a large catch of mixed shorebirds including seven knots already banded, four of which were Australian. A lot of this work was promoted by Clive Minton in Australia.

At this point it was just metal bands, and you had to physically capture the bird to get details, so it was difficult to learn without the bird in the hand. It was therefore an important step in the early 1990s to start putting leg flags on birds, to show that a bird had been marked in a certain country or region. If you saw a bird with a flag, you could say it came from this place, although that was all you could say. But it was quite useful. Eventually you got enough records to start putting together a map linking every site where birds had been marked and subsequently seen. You get a broad picture of where the birds go, but you don't really know specifics of how they get there, what ages they are doing it, how many sightings were the same bird etc. Nevertheless, this was an important step for understanding the flyway and how birds move.

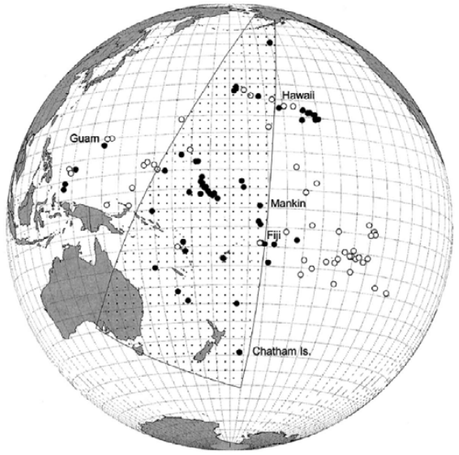
In the 1990s this continued with more banding and more recoveries, and some outrageous claims began to be made about certain migrations. One of these was the outlandish idea that godwits may be flying direct from Alaska to New Zealand. I remember hearing this from Adrian Riegen here at Pūkorokoro sometime in the 1990s and thinking 'this is bonkers'. This was so far beyond what we generally believed shorebirds were doing. It was twice as far as anyone claimed these birds might be doing. So, I thought it was a ludicrous idea.

This idea was also being put forward by Mark Barter – another wonderful Australian man very involved in shorebird banding and research. In Keith's book *Godwits: Long-haul Champions* he says Dick Sibson had also mentioned this possibility in the 1980s, but the idea began to get some traction. In 1999 Adrian did a summary of flights, and of what we knew about movements of waders banded in New Zealand. He says quite succinctly 'the route used from Alaska to NZ is a mystery, but it is possible that some or many birds migrate directly south from Alaska, through the Pacific.'

Evidence was accumulating to the point that during the 25th anniversary of PMNT in 2000, there were two important speakers. Pavel Tomkovich, from the University Museum of Moscow in the autumn, and Bob Gill from US Geological Survey in the spring. Bob was doing the most research into godwits, and some of you would have heard him say in this room, that 'based on numerous lines of evidence, many put forward by Mark Barter and Adrian Riegen over a decade ago, the route south is nonstop across the Pacific Ocean, a distance of 11,000 kms.' You heard it here first.

Adrian Riegen and Bob Gill discussing nonstop trans-Pacific flights KEITH WOODLEY

This is probably the first time it was widely promoted, and it took about five years for Bob to compile evidence for a paper published in Condor, with Adrian as one of the authors. One of his key bits of evidence was the fact that there are records of godwits from islands throughout the Pacific, and it is inconceivable that these birds flying down through China and Japan somehow ended up across the middle of the Ocean. It is far more likely they were travelling down from Alaska to NZ and Australia in a single arc across the ocean. By putting it in writing Bob was going out on quite a limb with his credibility.



Godwit records through the Pacific BOB GILL

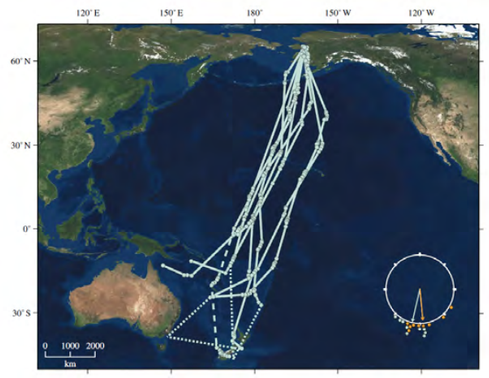
Now about that time we became more serious about marking waders. We were trying to catch birds for a report for DOC on movements of waders around NZ, so this gave us the opportunity for banding right across the country, telling us a lot about movements. When we started individually colour banding birds in 2004 it almost instantly paid dividends we just didn't expect. One bird 2YWWB we banded on 11 March and on 15 April we get a photo from South Korea – this is brilliant, a photographic record of a bird we know. And then the next year the photographer saw the same bird at the same place on virtually the same day. And the next year the same bird was seen at virtually the same place at the same day, and the same the following year! We were learning these birds seem to be going to the same sites, they have a timetable, so it was getting very interesting at that point.

Pavel Tomkovich Russian connection with the Flyway and PMNT member IGOR KUZNETSOV

Phil Battley, Nils Warnock and Bob Gill KEITH WOODLEY

In 2007 things really got serious because of Bob, and Nils Warnock from Point Reyes Bird Observatory, two shorebird biologists that had the vision, the wherewithal and the money for a big project tracking large shorebirds around the Pacific. They began working with four species from Alaska – Bar-tailed Godwit, Hudsonian Godwit, Bristle-thighed Curlew., and Long-billed Curlew. And of course, Bar-tailed Godwits is where we come in. They came out to New Zealand to deploy satellite tags and for the first time we got to confirm these flights across the Pacific. This resulted in a paper with a whole bunch of people – and I was lucky enough to be on that one.

From the first ten birds that were tracked – all but one had been tracked from Alaska but some transmitters died on the way, or the birds bailed out and went to an island – so there is only one bird, the famous E7, who made it to NZ while still transmitting. This was a huge thing for the world, for understanding shorebirds and endurance physiology. We published another paper that looked at the northward flights as well – of both the populations in Australia, the different subspecies – *menzbieri* that goes up to Russia, and ours. From that one project we learned a huge amount about their movements.



First 10 birds tracked

Another highly significant development around that time was the arrival of Jesse Conklin. An American with a background in shorebirds, Jesse came to Massey to do a PhD with me at the Manawatu Estuary. A very different site to Pūkorokoro, its very small population could be studied in detail. He began to look at individual timetables of godwits and has kept doing it. It was originally a three-year study, but he just came back last week for the 18th year of godwit monitoring there.

Jimmy Choi at Manawatu Estuary holding a knot banded in China PHIL BATTLEY

We had Jimmy Choi from Hong Kong working on godwits at Yalu Jiang, and I also had Angela Merino a student working on the genetics of godwit migration timing – so there was a lot of research going on.

Angela Merino MASSEY UNIVERSITY

With some resources left over from the godwit tracking project we were able put little geolocators on birds. These give you rough positions for birds although they have to be recaptured to get the information. This was going on in Manawatu and down in Otago, and generated a whole lot of outputs, primarily from Jesse. He looked at moult, we looked at timing, he did a three-year study but then kept going for 10 years and discovered things were a bit different, that there were interesting changes in migration timing.

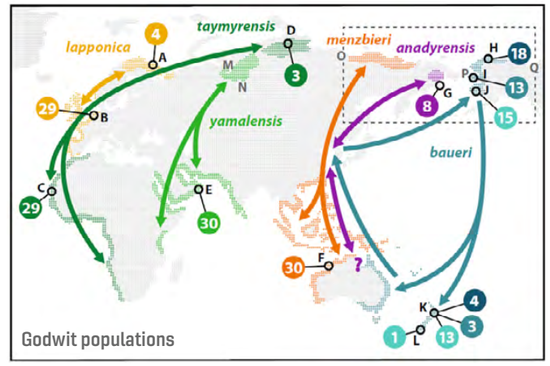
Bart Kampenaers (L) andJesse Conklin PHIL BATTLEY

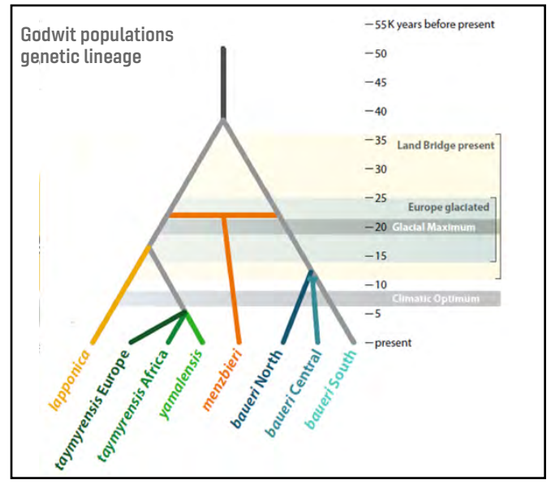
We knew the world was changing. Conditions in Asia were changing. The godwit migration time was changing, birds were getting earlier on migration. There were a bunch of reasons why we were interested in doing more tracking. We wanted to look at adults – how are they coping with declining food resources in China? The main food they depended on at Yalu Jiang had disappeared, so what was happening to these birds? In the meantime, we were also looking at juveniles around New Zealand and wanted to know more about them. Through serendipitous timing we got to satellite tag a lot of both adult and juvenile godwits.

The reason I could do this was that Jesse had become friends with Bart Kempenaers from Germany's Max Planck Institute and talked him into doing a pilot study on juvenile godwits. Now there are the kinds of studies where we would scratch together a bit of money and get a couple of tags and put them on birds; and then there are studies like Bart would do it where he would get 20 tags to put on birds and then he would think maybe these are the wrong tags so I will bring 40 other tags. So, Bart came out for a project just to see how it would go on juvenile godwits, with 40 satellite tags worth $5,000 each.

What have we learnt from all this? There are godwit subspecies from Scandinavia across Eurasia to Alaska. We only definitively know we have the subspecies *baueri* which breeds in western Alaska. There is a weird little population called *anadyrensis* of which little is known, that probably goes to Australia. Then there is another subspecies *menzbieri*, that we will touch upon. But as far as we know, all the birds we get are *baueri*. It is an interesting subspecies because it has a long latitudinal range – from the north slope of Alaska down to the Yukon Kuskokwim Delta in the south. And there is a cline within that population, so the birds from the north are smaller and darker and the birds from the south are larger and don't put on as much breeding plumage. So, if you see a really stonking male that is all red, dark red, it is going to be small bird from the edge of the range. The ones that look like they haven't done a good job but are very fat, they will be from the south of the range.

And there are genetic differences between them. We know there is a difference in what these birds look like, and we also know there is a difference in when they migrate as well. The first to migrate are the southern breeders. Jesse did work on genetics, which suggests that splitting of the subspecies and this cline within Alaska probably took place about 10-15, 000 years ago. After the Ice Ages birds extended out and became genetically differentiated.

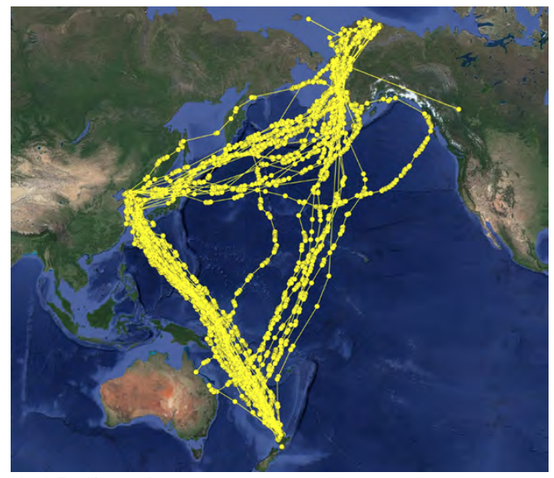




We knew that young godwits come to New Zealand and, unlike site-faithful adults, move around the country. Which is how Jesse got Bart interested. What drives a bird to decide to stop moving around and where it settles? Does that effect its migration? The year they came out to catch birds was a great year for juveniles. From a single catch of birds at Manawatu we had birds recorded from Invercargill and as far north as Parengarenga. One bird south of Gisborne sat there for a year and a half, and we thought the transmitter had fallen off, and then this year it flew away. It was there the whole time; it never left its little spot. So, we know young birds will explore the entire country and they will get to know things quite well.

We know that the birds from southern Alaska which are the bigger ones leave earlier on migration and the smaller ones later. This is because we have got this cline in Alaska, so the bigger southern birds breed first because the thaw is earlier there. But the other interesting thing that I wasn't expecting is that birds further south in New Zealand leave earlier than birds in the north. For some reason the birds in Otago leave about 10 days earlier than birds in northern New Zealand. We don't really have a good reason for it – there is no special reason why they should have to. I think it is probably something to do with day length and their internal clock. Interesting but still not well understood.

Two foxton bird annual schedules JESSE CONKLIN



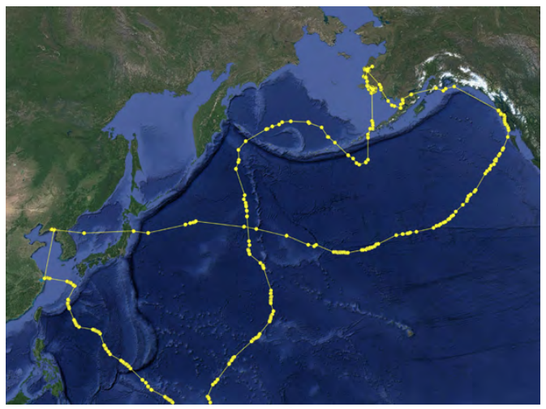
Map 1. Tracking results

What really came through was that individual birds have got their own individual timing. You can see the Foxton bird on the right is darker than the one on page 17. So, when you look at a group of birds down at the Stilt Ponds, they are not all hankering to go. Some of those birds aren't going to leave for a month; they are just getting fat and are quite happy. Other birds might go this week.

Now the cool thing about godwits from a research point of view is they have got such a simple migration. They have essentially one step from Alaska to New Zealand, one step from here up to the coast of the Yellow Sea and one step from there up to Alaska. This makes it simple, because we know that when they take off from here, they should not be landing until 10,000 km and should be going for seven or eight days. The satellite tracking we have been doing is providing some amazing insights into how they achieve this. And clearly it isn't always as simple as I have just outlined – for there are a range of things tucked in.

From the tracking we did in 2019 we found that a lot of birds stop on islands when conditions are bad. Heading northwards birds often hit headwinds as they are flying up to the Yellow Sea and at that point, they end up stopping in Okinawa for a few days and then carrying on. We've got birds in Alaska stopping because of bad weather; and coming south across the Pacific we have had satellite birds stop on all these islands or heading across to Australia. Clearly these islands can play an important role in allowing birds to cope with bad conditions and survive.

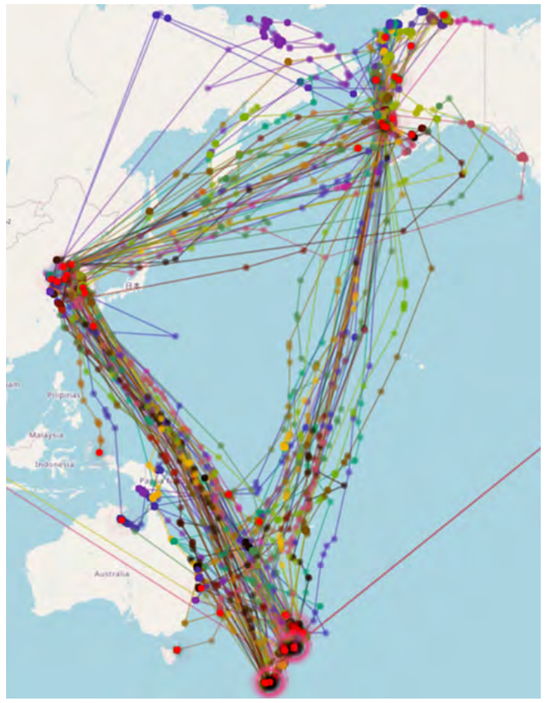
I keep wondering about the existence of this trans-Pacific flight; did the evolution of it depend on these islands being there? If we did not have these islands would this not work the same way? We know that for some birds it is an emergency stopover, but the other possibility is that some birds just do this. We had one bird go to New Caledonia one year and we thought this to be an emergency stopover, but the next year it flew to the bottom of New Caledonia, turned around flew over the top and landed exactly where it was last year. So maybe this is just what it does.



Map 2. An adult bird pushed towards the US, away from its intended track

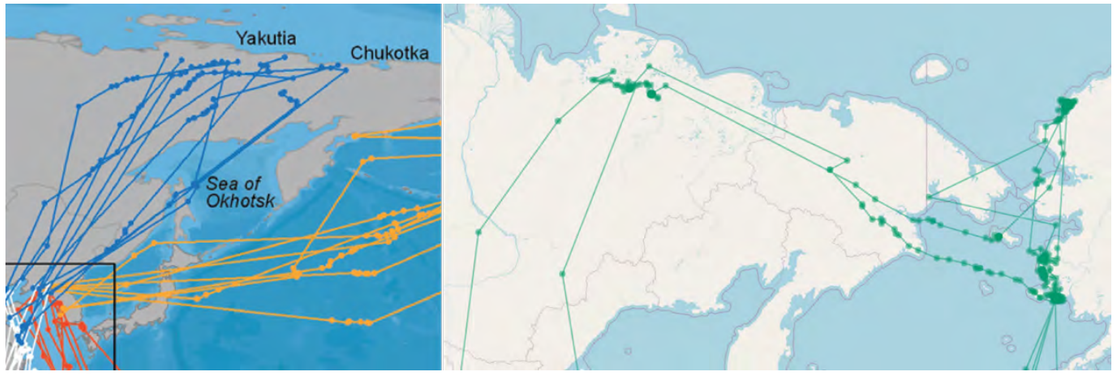
We are getting the idea that birds can cope with really bad conditions. This is the migration of a bird that had a problem. It was attempting to fly across and up to Alaska, but it got caught underneath an unfavourable wind system and it just couldn't turn left because it had headwinds all the way across the Pacific, so it ended up flying 10,000 km. It refused to land in Canada because it knew it was an Alaskan bird hence an American citizen, then it turned and landed 50 km past the Canadian border in American territory, stayed there a week and then headed for exactly where it was probably originally going on the Yukon-Kuskokwim Delta. Amazingly it can cope with this; it knew it was in the wrong place, and it knew how to get to where it should be.

But the other interesting thing is that these are adults, and we knew that adults are very good at what they do, but in a way that limits our understanding of what godwits can do. What do survivors do that have done this multiple times? We are learning a huge amount from the young birds. That juvenile project was set up to understand what a bird does while in New Zealand. But it turns out they can migrate a lot earlier than we anticipated. We thought they would stay for three or four years before migrating but a whole bunch of them went when they were two years old. They have never flown north before and for some of them it might be their first flight with adults.



Map 3. Tracks of juvenile birds

Map 3 shows young birds on migration – that haven't done this before and look at the spread of where they have gone. We have got them over in Canada or up in Russia, we have got them in Australia we have got them all over the show. An important finding is they use the Yellow Sea in a different way to adults. Year after year adults are using the Korean coast up to YaJu Jiang. We don't tend to get our adult godwits using the western shore of the Yellow Sea. But young birds or immatures going on their first migration are all over the show including the western shore. But they might change. Do they change and start using the eastern shore or is this a change that happens? Godwits probably know more about the Yellow Sea than we give them credit for; they may know about other habitats that might be there.



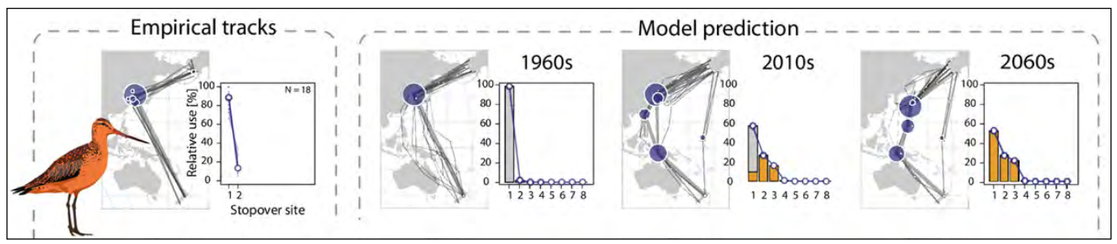
Maps 4 and 5.

But the very weird thing was we had birds going up to Russia. Now we have got some birds passing along and stopping on the Kamchatka Peninsula, and we have these purple lines (Map 3) with birds in the wrong place and this was most surprising to us. There are a couple of possibilities here. This is the way you might expect if birds are doing it by first principles to take the shortest route. The shortest route from Yellow Sea to Alaska isn't out across the Pacific and up. That is the route you take when you have got good tail winds. The shortest route is overland across Russia. So, we see birds going up along Kamchatka Peninsula and these lines on the left are the shortest route. Which is pretty much exactly where they should go. You get birds doing that because they are not flying with adults, they are not trying to use winds, but they are thinking right, and this is navigationally how it should go. So, that is one possible explanation for it.

But the tracks of another bird that ended up in the middle of Siberia requires another explanation. These are the tracks of the same bird over two years, and this is a really strange one. Map 4 shows the tracks of the *Menzbieri* population that goes to Australia and up into Russia. And Map 5 is this bird. These young ones are probably not as good at refuelling, they were migrating later than the adults so this bird might have just got caught up in the wrong crowd, the subspecies that migrates later. So, it ended up taking off with a bunch of birds – oh well this is life, this is what I do, this is where I should be. But something felt wrong because it stayed in Russia until August and then flew to Alaska. Because it flies south from Alaska in September-October, it ended up in the right place for southward migration but the wrong place for breeding. Or maybe it is not the wrong place. Maybe it is a good place because other godwits breed there. So maybe this is how there is gene flow between different populations. Or when juveniles do this and get caught up.

Much of this information has been used for modelling. Simeon Lisovski published a paper in 2024 where he got geolocator tracks for a range of species and built a model that was based upon the body mass of birds that affects their flight range, and environmental conditions to do with their metabolic rates and their fuelling rates, and sea level change and climate change. He developed a model that tried to explain the migration pathways of birds and then to look at what it would have been like 50 years ago and what it would like 50 years into the future. Godwits were one of the species he used. Comparing model predictions with tracking data shows that what godwits were doing in 2012/13 was exactly what the model predicted they should do, only it predicts what they should be doing in 1960, not what they are currently doing. In the 2010s they should be making one or two stopovers somewhere in southern Asia or maybe in Papua New Guinea or something like that. As for 2060, I am not sure how they are going to manage a refuelling stop in the middle of the ocean but maybe there will be a volcano by then, who knows? So, in a way it looks like godwits are migrating ideally to conditions that don't exist anymore. And they probably are going to have to change the migrations in the future because they will be losing habitat, and their fuelling rates will go down, so they probably need to change what they are doing. They will need to have more stopovers, and it might be a slow process because it is probably only the first-time migrants that can adjust this, the adults are just fixed in what they are doing. So, knowing these juveniles are doing something different on migration as immatures probably gives us hope that they can adapt in the long term, but it might take a while.

This is also important because we know what is happening with our numbers. We have two fabulous long-term trends of data from the Manukau Harbour and Firth of Thames which show changes in these populations over time. At the Firth in the 1960s, counts of 10-15,000 godwits were common but they dropped down to an average more like 7,000 which is what we have now. We have



Empirical tracks are from satellite tags.

pretty much halved the population. The Manukau Harbour showed some different fluctuations over time but still pretty much the same – we used to get counts of 20,000 at some peaks and then it has been below 10,000. We know there have been years of good reproduction boosters. and hopefully they can pull it up. The Kaipara Harbour is the same, counts of generally 12,000 where they used to get counts of 20,000. Farewell Spit is interesting, being stable at 10,000 for the past 20 years but they used to have more.

So, in conclusion we do know some stuff.

We know what populations of birds we have, we know where they come from and to some degree, we know how they get here and back. We don't necessarily know all the details as much as we need to know, but we are getting there.

We know these young godwits do a bunch of things differently to how the adults do it, which is quite interesting not just from a research point of view but also a practical view.

We know that sites around NZ vary in their trends – probably due to local conditions but unfortunately most of the trends are downwards. So, we do have reason to be concerned about their long-term trajectories.

Through all these publications and research projects godwits are really becoming a bit of a model system for understanding the physiological endurance capacities of birds. There is a lot of people interested in how they do these things, but we have not done those studies yet but are hoping to get some funding eventually.

We also know the harder you study something, the harder it is to stop. Just to put this into context: Jesse Conklin came in 2008 to do a three-year PhD and last Thursday he arrived for his 18th year of doing that study. We always had this thing, when do we stop doing this monitoring? He has still got birds in that population that were there when he started in 2008. Some birds have been there every year since 2008. So maybe he should see them through. Maybe at the stage they don't come back from migration Jesse is allowed to pull the pin on his annual migrations.

Sadly, there is a lot we don't know.

We don't know how conditions birds experience on migration affects their survival and reproduction. Birds might make it up to the breeding grounds but are they reproducing in the same way they would if conditions were better.

We don't really know how much birds can change what they do. They have had 30,000 years to change what they are doing – are they limited in their ability to adapt to changing conditions? We don't really know how they do. Godwits don't seem to do anything different from any other bird, but they do it spectacularly well, to get so fat and so good. So, we are interested in understanding at a physiological level – what is going on with these birds? How are they coping with the stresses they put themselves under?

To conclude, back to Buller: 'The seasonal migrations of this species over a third of the globe's circumference in search of a congenial climate, and then back again to its distant home for breeding purposes, are astonishing facts in natural history, and to those who have not studied the subject might well appear incredible. But it is this romance of real life that so often forces upon the naturalist the conclusion that 'fact is stranger far than fiction.'

Finally, a thank you to everybody who has enabled this body of work to take place, particularly, given that so much of it has taken place here at the Shorebird Centre. Having this place here as a research base is unbelievably handy and good.

Godwit Q & A

Do you have any idea of what altitude these birds are flying?

We would desperately like to get that info this year – so Bart Kampenaers and Jesse Conklin have put a bunch of GPS trackers on birds at Nelson, and GPS should give you altitude. They use the cellular network to download but I haven't seen any results yet. So, the answer is still unclear. I know when Bob Gill did a compilation of evidence suggesting the transpacific migration flight, he found two bits of evidence; people in a boat off New Caledonia one March saw a flock of godwits at sea level; another time someone was out at night and heard birds and put them at 1000s of feet up in the air. So, I would like to say they fly somewhere between the sea and the sky – so far, we have narrowed it down to the atmosphere! But we have examples from the satellite tracked birds where one bird has flown up towards New Britain – quite a large island with a mountain range across it – and then turned right and gone around it which suggests it wasn't flying at altitude. So, I suspect a lot of birds might be flying at reasonably low altitudes. However, Black-tailed Godwits migrating from Europe down to Africa have been tracked going up to almost 6,000m high and then coming back down again later. Therefore, it is equally plausible they might fly kms high at some times. But we don't have any results here yet.

Do we know when they started this process way back in geological time. Any idea?

We would have to assume that when godwit species split from each other they probably were migratory species even back then. The short answer is no we don't know, but these things have evolved through the ice ages and the lineages of shorebirds must be going back millions and millions of years. Some of the early birds – the Charadriiformes may have been around 50, 60, 80 million years ago. I am not sure how deep the split in godwits is but if we looked at the dating of the migrations to New Zealand, it could be something like 30,000 years. But from the genetics they can't tell whether our godwits have evolved in Eurasia and shifted eastwards, or that original population was in Alaska and shifted westwards. Perhaps they used to come down the mainland coast and then their breeding grounds shifted, or they bred in Alaska and used to winter further north than now. So that is a question people would like to know: what pathway led them to choosing this ridiculous flight across the Pacific Ocean.

How can they fly so far so long without stopping for food and rest, and can they sleep in flight?

How far they fly we know that from tracking. They will typically fly for anything between 8-9 days nonstop, but we have had some birds fly for over 10 days without stopping – so they are not eating, drinking they are just flying. But the other question – do they sleep is why Bart has been interested in using GPS tags because these tags have got accelerometers that can record activity data. The idea was two things: one was if they get high resolution data in flight they can tell if the bird is continuously flapping or is it gliding at some point? They know from work on other birds such as Pectoral Sandpipers and penguins, where they have looked at brain activity that birds take milli-sleeps of seconds in duration. So Pectoral Sandpipers might sleep on one side of the brain for 2 seconds and the other side of the brain for 3 seconds, accumulating through the day a couple of hours of sleep. One possibility is they don't sleep for 8 – 10 days and then they just have a big sleep at the end. But with these accelerometers and GPS we are hoping to have variation in the flight. The flight here to Asia is 10,000km, so how long do they sleep after that? And how long do they sleep after the shorter flight up to Alaska? And how long do they sleep following that nonstop return to New Zealand?

I can't see us doing that research directly because that involves putting electrodes on the back of the brain on the bird and a little data logger to record. It sounds terrible and when they first started talking about it, I thought okay I can't see this one getting off the ground. However, Bart has done it with Pectoral Sandpipers, and they were fine. They caught displaying Pectoral Sandpipers in Alaska and took them into a little lab, put them under anaesthetic and under the skin put the little electrodes up the back of the skull, plus a little backpack unit on it. They then had to recapture the birds to retrieve the data, but the birds did just fine. They coped with this really well. However, I think it is probably a step too far for my research abilities to do that on godwits.

Some godwits breed in the southern part of Alaska and some in the northern parts. The northern ones should go later but they will have to leave the breeding grounds earlier – it seems they have got a really bad deal – they get there later but they have to leave earlier with a very short period to breed?

In a way you are right, they have got a shorter window, but most birds are off the breeding grounds well before the snow comes – they are refuelling on the tidal flats for anything from 40-90 days, depending on how well they bred or not. But you are right they do get the worst of it because they are the last to arrive, so by the time these birds arrive in the Yellow Sea other birds have been feeding there for three weeks so it is possible they may be feeling the pinch of food depletion more than the early ones do. The same might occur in Alaska. It is possible the pressures are worse for those northern breeding birds because of those timetables. But there is also a constraint on early leaving birds as well – you get to the Yellow Sea, and it could still be frozen. There could be ice on the tidal flats so the earliest birds to leave are playing it finely with climate conditions in the Yellow Sea as well. So, there are pressures on both sides I think

So do you think, as they are smaller birds they have got to put on less weight to take them there and back, it is some kind of compensation?

Yes, in terms of absolute amounts of fat that is true. I haven't yet seen a completely compelling argument as to why they are smaller.

Tracking rare migrant moths

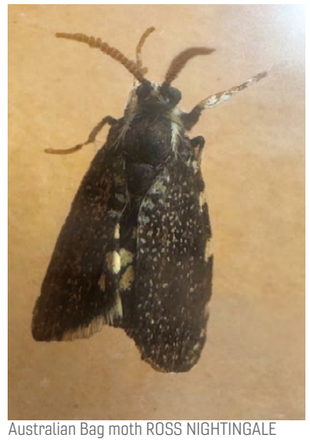
Tansy Bliss reports on the latest from her moth trapping programme.

Our work monitoring the moths around the Pūkorokoro Shorebird Centre and in the Robert Findlay Wildlife Reserve has continued with very welcome help from Tony Steer, Ross and Sarah Nightingale and Sean Clancy.

Tony Steer's work both in the field with his portable generator and his 'ID Guide to Micro-moths of NZ's Kauri Kingdom' on iNaturalist has been invaluable. His contributions towards data collection, recording and future interpretation of that data means the iNaturalist PMNT Wildlife Project will highlight the recorded moth diversity at Pūkorokoro and reflect changes over time.

Moth monitoring in RFWR TANSY BLISS

Ross and Sarah Nightingale showcased their new LEPI LED light in the RFWR with its super bright light of selected wavelengths, all run on a neat lithium battery pack. Consequently, on a dry night after rain in mid-February, we were treated to an unrivalled inundation of beetles, crickets, katydids, flies, lacewings, spiders, and non-biting midges, as well as a full suite of moths, including the Australian Bagmoth *Cebysa leucotelus*, which was a new record for the Reserve.



Australian Bag moth ROSS NIGHTINGALE

Sean Clancy, on his annual visit from the UK, recorded 121 different moth species at the Shorebird Centre between December 2024 and February 2025, bringing the total recorded over our collective five years of monitoring to 210 species. He has contributed some of the more unusual or rare specimens to the Landcare Research New Zealand Arthropod Collection (NZAC) – Ko te Aitanga Pepeke o Aotearoa. Of note was a recent migrant from Australia - The Cabbage Heart Grub, *Hellula hydralis*.

A recent fresh *Hellula hydralis* at Pūkorokoro Shorebird Centre TANSY BLISS

A first worn *Hellula hydralis* at Pūkorokoro Shorebird Centre TANSY BLISS

A cabbage centre grub larva ANDREW WEEKS

This unobtrusive looking moth, with a delicate mottled wing pattern, has a caterpillar that munches its way through the growing tips and flowers of many brassicas, including cabbage, canola, broccoli, brussel sprouts, cauliflower, kohlrabi, turnips and parsnips.

The caterpillars are cream in colour with a dark head and longitudinal red-brown stripes running along their body. The larvae don't grow very large, only reaching ~15 mm in length. They often behave like 'borers', creating large blisters inside the leaves, or burrowing into the growing point or the main vein of a leaf. They also produce webs on foliage, which can act to bind leaves together. These factors combined, makes them difficult to see and difficult to control with sprays.

They are considered an agricultural pest in Australia.

Although there was an early record of Cabbage Heart Grub in the Auckland region in January 1981, there were no other confirmed records until February 2021 when an individual moth was caught in Hokitika and the observation recorded on iNaturalist. Comments about this 'rare migrant' were along the lines of excellent, great record, well done. However, the next record of this moth in September 2024, followed by a further 16 known records to date, has brought about a different reaction.

A member of MPI's Incursion Investigation Plant Health Team was concerned after receiving information from Sean Clancy about the re-appearance of this moth in the Auckland region. Their entomology team was duly notified, and further investigation may be required. *Hellula hydralis* is listed as an Unwanted Organism under the Biosecurity Act and a pest of concern.

Our Citizen Science iNaturalist records, plus some addition details from Sean Clancy, give a quick overview of the situation. See Table 1 and Map 1.

This moth is spreading and spreading fast. Check your brassicas and if you find this moth or its caterpillars, please record it on iNaturalist.

References and links:

www.cesaraustralia.com/pestfacts/cabbage-centre-grubs-in-establishing-canola-and-forage-brassicas/

www.inaturalist.nz/observations?place_id=6803&taxon_id=341542&view=species

Micro-moth Guide: *www.inaturalist.nz/guides/4752*

Map 1 *H. hydralis* records iNaturalist

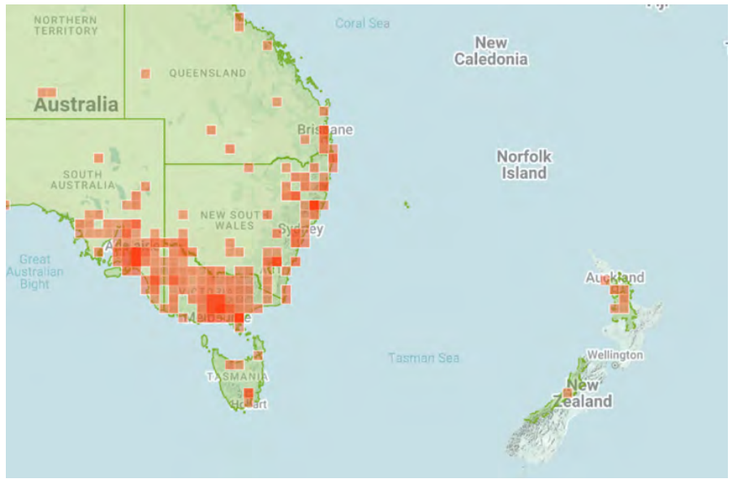


Table 1

DATE	LOCATION	NOTES
9 January 1981	Papakura	Neville Hudson, iNaturalist observer (personal comm.)
19 February 2021	Hokitika	
2 September 2024	Point England, Auckland	
10 September 2024	Freemans Bay, Auckland	
10 December 2024	South Head, Auckland	
11 December 2024	Raglan	
20 December 2024	Mahakirau, Coromandel	
30 January 2025	Pūkorokoro Miranda SBC	
31 January 2025	Hamilton	
13 February 2025	Pūkorokoro Miranda SBC	Specimen in NZAC Sean Clancy
18 February 2025	Mahakirau, Coromandel	
21 February 2025	Te Atatu South, Auckland	not on iNat. Specimen in NZAC Sean Clancy
25 February 2025	Te Atatu South, Auckland	not on iNat. Specimen in NZAC Sean Clancy
28 February 2025	2025 Kings Seat, Clarks Beach area, Auckland	
29 March 2025	Point England, Auckland	
1 April 2025	Pūkorokoro Shorebird Centre	
2 April 2025	Pūkorokoro Shorebird Centre	2 specimens
6 April 2025	Findlay Road, Pokeno	

Pūkorokoro Miranda Naturalists' Trust

The Shorebird Centre

283 East Coast Road
RD 3 Pokeno 2473
phone (09) 232 2781
admin@shorebirds.org.nz
www.shorebirds.org.nz
www.facebook.com/

Pūkorokoro Shorebird Centre Manager: **Keith Woodley**
Centre Assistant: **Chelsea Ralls**
Kaitiaki Ranger: **Tansy Bliss**

Pūkorokoro Miranda Naturalists' Trust Council

Chair: **Stuart Laurenson**

Deputy Chair and Banding Convenor: **Adrian Riegen**
riegen@xtra.co.nz
09 814 9741

Secretary: **Emma Salmon**
secretary@shorebirds.org.nz

027 527 6727

Treasurer: **Gillian Vaughan**
treasurer@shorebirds.org.nz

Council members: **Wendy Hare, Trudy Lane, David Lawrie, Bob Rigter and Olga Brochner**

Magazine

Acting Editor: **Keith Woodley**
keith@shorebirds.org.nz, 09 232 2781
Layout and production: **Bernie Cornford**

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.

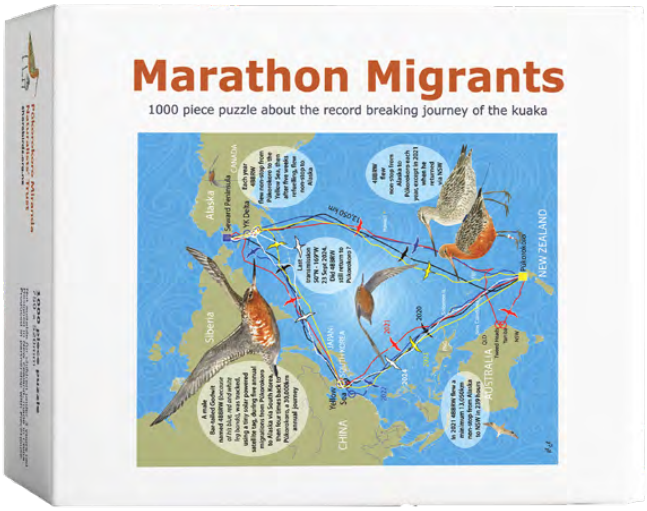
Bequests

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.

Gifts from the Shop



Jigsaw Puzzle – Marathon Migrants

$50 Preorder now – Due end April

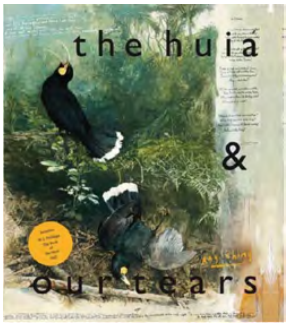
www.shop.shorebirds.org.nz/shop/jigsaw-puzzle-marathon-migrants-1000-pce

50 Birds T-shirts, Tea Towels and Bags

Men's & Women's T-shirts

www.shop.shorebirds.org.nz/shop/mens-50-birds-t-shirt/

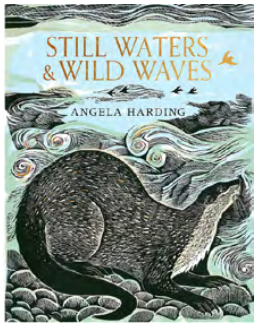
Newest Books from the Shorebird Centre Shop



The Huia & Our Tears

Raymond Ching –$80

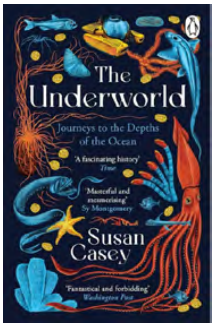
www.shop.shorebirds.org.nz/shop/the-huia-our-tears/



Still Waters & Wild Waves

Angela Harding – $65

www.shop.shorebirds.org.nz/shop/still-waters-wild-waves/



The Underworld

Susan Casey – $28

www.shop.shorebirds.org.nz/shop/the-underworld/

Taking Flight

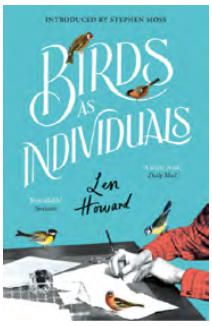
Levi Parikian – $30

www.shop.shorebirds.org.nz/shop/taking-flight/

Planet Insect

Steve Nicholls – $27

www.shop.shorebirds.org.nz/shop/planet-insect-how-insects-conquered-the-earth/



Birds as Individuals

Len Howard – $40

www.shop.shorebirds.org.nz/shop/birds-as-individuals/

Wild Wellington

Michael Szabo – $45

www.shop.shorebirds.org.nz/shop/wild-wellington/

If you can't make it to the Shorebird Centre shop, visit our amazing online shop at www.shop.shorebirds.org.nz/
Send an email to shop@shorebirds.org.nz. Ring 09 232 2781 and chat to the friendly team
We'll be happy to help

Published by Pūkorokoro Miranda Naturalists' Trust, 283 East Coast Rd, RD3, Pokeno, New Zealand 2473