

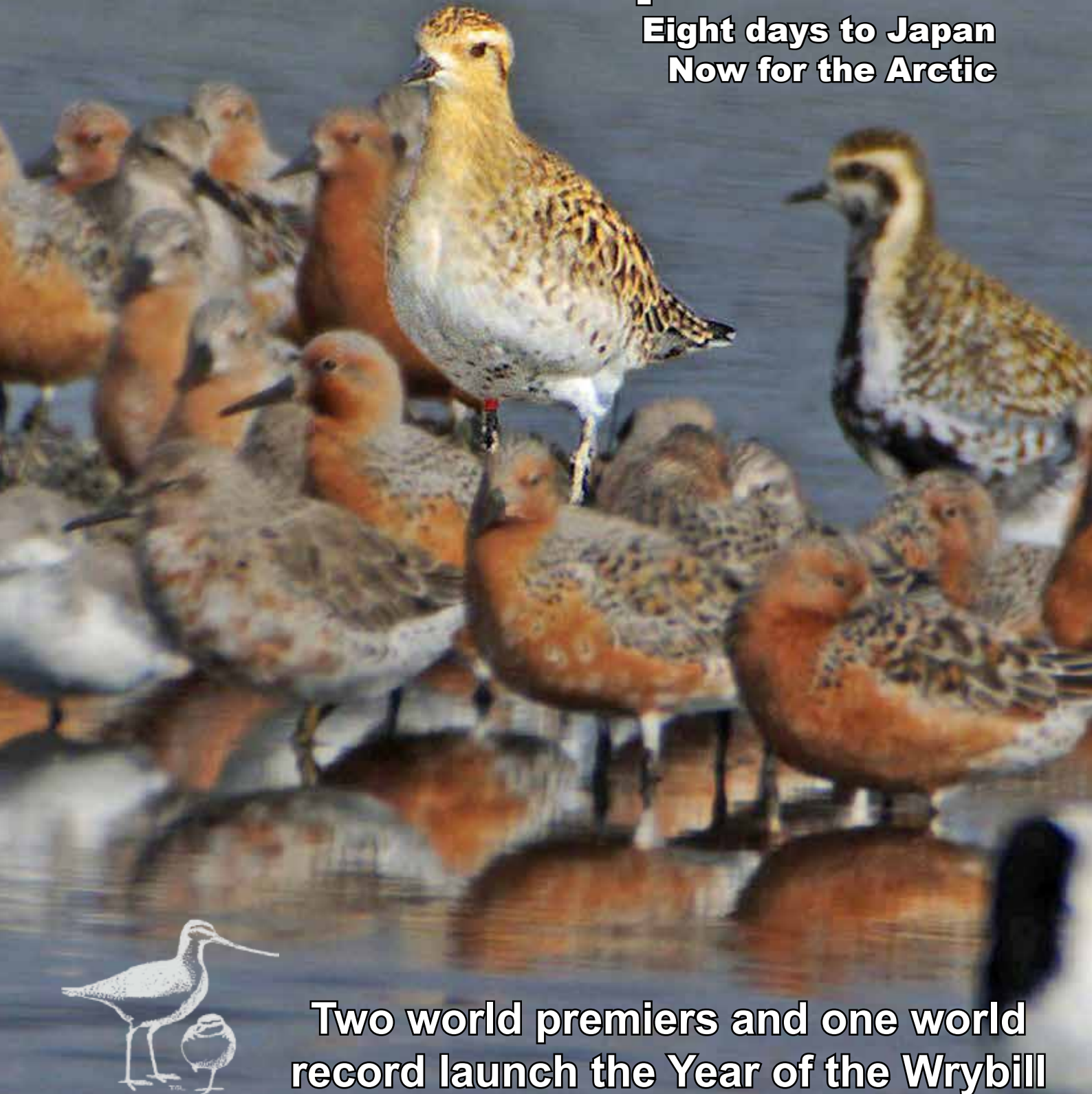
Pūkoro Miranda News

Journal of the Pūkoro Miranda Naturalists' Trust

May 2019 Issue 112

Our intrepid pathfinder

Eight days to Japan
Now for the Arctic



Two world premiers and one world
record launch the Year of the Wrybill



THREE PATHFINDERS: (from left) The publicity-hungry Wee Jimmy, who turned up whenever a camera appeared, pictured the day before he left; the cautious Amanda who was often seen but only at a distance; the shy JoJo who was rarely seen, snapped for once at Piako shortly before departure. Photos / Peter Freisen, Jim Eagles, Janie Vaughan

Discovering where our Kuriri come from

We may have caught only three of the desired 10 Pacific Golden Plover, or Kuriri, to fit with satellite tags but, writes project coordinator **Jim Eagles**, they have already answered a great many questions about the species.

The email we had all been waiting for arrived from Lee Tibbitts, wildlife biologist at the US Geological Survey's Alaska Science Centre, at 12.48pm on Easter Saturday: 'Amanda made it to Japan.'

Amanda, one of three Pacific Golden Plover we had managed to catch and fit with satellite tags in the course of an exhausting summer campaign, had taken eight days to complete a flight of almost 10,000km from the Firth of Thames to the Boso Peninsula, not far from Tokyo, on the island of Honshu. I had misty eyes – not for the first time in this project – at hearing she had made it safely. Her namesake, this year's summer shoreguide Amanda Hunt, who was with visitors at the hides when she got the news, responded, 'Yeeee ha! What a little beauty!'

It was a huge step forward in the Shorebird Centre's project to help these beautiful, enigmatic birds. As banding committee chair Adrian Riegen put it, 'Amanda's flight has already told us more about Pacific Golden Plover migration from this country than has been learnt throughout the entire history of New Zealand ornithology.'

Since then (as the map opposite shows) further emails have reported a second bird – nicknamed JoJo after JoJo Doyle who organised the huge volunteer effort to monitor the birds – also reaching

Japan. And the third – officially called Jim, though I prefer Wee Jimmy – left rather late but seems to have made it to Guam.

Hopefully, not long after you read this, an even more exciting email will arrive saying that at least one of our birds has reached its breeding grounds in the Arctic. That will tell us for the first time where at least some of the Pacific Golden Plover which have been visiting New Zealand each spring and summer for thousands of years actually come from.

And if we're very lucky, come next September the satellite tags' batteries will last long enough to track at least one of our travellers back to the Firth of Thames, after a round trip of around 30,000km, and we will have begun to unravel the life cycle of these beautiful, mysterious birds.

But we won't stop there. When the Kuriri return to the Firth of Thames in September, we're going to use our recent experience of these wary creatures to try to catch seven more, fit them with our remaining satellite tags, and set them loose to collect even more information.

That matters because Kuriri numbers have fallen sharply in the past 30 years and only by discovering where they breed, what routes they follow on their migratory journeys and where they have their stopovers can we find out why that is happening and try to do something about it.

It was, in fact, asking questions about just that which started this whole project off. In the beginning, I had no intention of getting involved in a research project, I just wanted to write an article for *PM News* about the Pacific Golden Plover. I'd previously written about Red-necked Stints and Ruddy Turnstone, Black-billed Gulls and Skylarks, without it turning into a major drama. But PGPs, as we have learned to our cost, are different.

They might be the fourth most common of the Arctic migrants to visit New Zealand each summer – officially native birds because they spend more than half their life here – but as soon as I started asking about them it turned out we knew almost nothing.

Where in the Arctic do they breed? What route do they take to get here? Why have numbers recorded in the national wader census dropped from around a thousand 30 years ago to 200-300 today? And since they play an important role in Polynesian culture elsewhere – usually as messengers of the gods – what is their Māori name? No one seemed to know.

The last query was the only one able to be solved fairly easily. When the books and websites I consulted didn't have a Māori name I asked Morehu Wilson, a rangatira of Ngati Paoa, who we regard as tangata whenua of the Pūkoro area.

Cover: Photo of the big, bold, beautiful Amanda in front of the Stilt Hide by Chelsea Ralls

Morehu said he didn't know but would consult kaumatua. Three months later he reported back, 'I have since found that the Māori word for the Pacific Golden Plover is Kuriri.'

To find answers to the other questions everyone pointed to Wally Johnson, who has spent the past 40 years studying PGP's, visiting countless Pacific countries and using telemetry, geolocators and most recently satellite tags to track where they go. Wally was hugely helpful and only too pleased to share his knowledge. His research has found that birds from Hawaii fly direct to and from Alaska; those from Fiji and Samoa travel to Alaska via Japan; those from China, the Philippines and at least some from Australia's Northern Territory travel to Siberia via Japan, China or Taiwan.

But Wally said he didn't know where New Zealand's PGPs – which are at the extreme end of the range – nested or what route they migrated along. However, he was very interested in finding out and suggested, 'Maybe we should think about some tagging there and track your birds. . . If there's interest at Miranda maybe we should get together and plan something!'

I was very interested because by now I had become fascinated by these remarkable birds. But my main job as a volunteer at the Shorebird Centre was to put out the quarterly magazine. I wasn't a real birder. So I contacted Adrian and explained that Wally had 'raised the possibility of coming here to fit GPS pinpoints to some birds to try and find out where they do go, if we're interested. Obviously that's something that's a bit beyond my pay scale though I do find it an exciting prospect.' Then I added presciently, 'Even though I imagine they'd be damn hard to catch.'



TRACKING: The dots are GPS pinpoints recorded for the three birds. The dark green shows the PGP breeding area. Map / Adrian Riegen

working on applications.

One of the first approached was the Ron and Edna Greenwood Environmental Trust which had earlier provided funding for the mist-netting gear that might be used to catch the PGPs. The Trust promptly gave us \$5000. Weehaa. We were underway. After that, however, the fundraising got a little slow. A couple of organisations which had seemed likely sources turned us down. I began to feel nervous.

But then, as so often happens, Trust members who had read about the project in *PM News* came to the party. John C Black and Jeanne Kleyn, who live in Washington State in the USA, but have done the Miranda Field Course, offered \$5000. Other members, who didn't want to be named, also chipped in. Soon afterwards the Mazda Foundation gave another \$5000. Then Birds New Zealand came up with \$4600 from its project assistance fund.

We were closing in on our target but the time for ordering the tags was getting close and there was still a gap. Then Wally got in touch to say that Brigham Young University Hawaii, with which he had worked for many years on plover research, was keen to be involved. It would pay the travel costs of his team of experienced plover catchers, plus two students, to join the catching, and cover our satellite tracking costs. But BYUH also offered to effectively underwrite the purchase of the tags (though the university would be very pleased if we could find the money elsewhere). As it happens, we didn't have to ask them for anything, because

Adrian responded enthusiastically, 'If you can get Wally Johnson down here to tag plovers your pay grade will go up quite a bit'. The PMNT Council agreed, Wally remained keen to come and it seemed we were committed.

I then learned anew that, as our chair at the time Gillian Vaughan puts it, 'If you come up with an idea at PMNT, you own it'. In other words, I had a project to organise. Fortunately, when that happens you also find there is a lot of support from experienced people to make it happen.

Sorting out the basic details of what was required was fairly easy. Wally suggested we would need 10 of the PinPoint Argos satellite tags, made by the Canadian company Lotek, which he used in his most recent tagging round the Pacific. Lotek's New Zealand arm gave a quote of \$22,995 so we had our fundraising target.

Enter the Centre's volunteer fundraiser, Alistair Harlow, who in his day job runs the New Zealand Roadmarkers Federation. Alistair scoured his database of funding organisations for any that might support such a project and we started



THE KURIRI KATCHERS:
(from left, back row) Roger Goodwill, Chelsea Ralls, Jo Wells, JoJo Doyle, Jim Eagles, Wally Johnson, Diane Smith, Tom Wells, Mike Weber, (front row) Errika Joel, Emma Houghton, Dave Bybee, Adrian Riegen, Amanda Hunt, Johan Kok.
Photo / Johan Kok

months later, with catching already under way, Lush Handmade Cosmetics gave us \$10,000. But the BYU offer came as a huge relief because it meant the project could definitely go ahead.

Or could it? Before we could start catching birds we had to get approval under both the Wildlife Act and the Animal Welfare Act.

Shorebird researcher Phil Battley, associate professor at Massey University, warned that getting Wildlife Act approval from the Department of Conservation could be a long-drawn-out nightmare. But he also hugely eased the burden of dealing with the Animal Welfare Act, which we knew nothing about, by offering to steer an application through the Massey University Animal Ethics Committee.

Unfortunately, despite expert help from Wally, Adrian, Keith Woodley and Thames biodiversity ranger Maillee Stanbury, getting Wildlife Act approval did indeed prove to be a long-drawn-out nightmare. The problem wasn't the content of our application, which was never questioned, but the time involved in getting it processed.

It was submitted on 20 September along with a note that we really needed a decision by early November so we could order the tags in time for catching to start in February. The website said standard proposals were normally dealt with in 15 days and complex proposals might take up to six weeks so that should not have been a problem. But processing moved at a snail's pace. The first confirmation that it

was even being looked at by a permissions advisor came after 21 workings days and it was 12 weeks before we finally got the nod on 3 December. By then we had been obliged to take the risk of placing the tag order without having approval to use them, which was a little nerve-racking.

With the permits sorted, there was one last thing I was very keen to organise before the project got underway: a video documentary. It had always seemed a great pity that we have little to show of the legendary Bar-tailed Godwit E7, who in 2007 set a new record for non-stop long-distance flying by birds, travelling 11,680km from the Yukon-Kuskokowim Delta in Alaska to the Firth of Thames in eight days. Her story has fascinated countless people, and even inspired a couple of books, but all we have to illustrate that feat is a photo of E7 and her transmitter being held at arms-length in the Wrybill Room.

For months I tried to find someone who might do a video of our project. I even started making videos myself. Then Ray and Ann Buckmaster, who maintain our Facebook page, pointed me to a lovely video of sunrise at Pūkoro which had been posted there. I tracked down the author, Johan Kok, and he was very keen to help, partly because he's a longtime birder, but also to publicise his fledgling video business Wild Images. Throughout the project he was there to record events and do video updates and will ultimately combine it all into a documentary.

Meanwhile, all the chasing after money, tags, permits and publicity didn't mean

we had forgotten the birds themselves. We knew that Pacific Golden Plover in New Zealand are extremely shy which we suspected would make them tricky to catch.

In his book, *Shorebirds of New Zealand: Sharing the Margins*, Keith noted that in the Pacific islands PGPs comfortably share space with humans in parks, golf courses, home gardens, roadsides and beaches. By contrast, 'in New Zealand, far from being seen on pavements and lawns, they are among the most shy and wary of the shorebirds found here. They are more likely to be seen – and often only from a distance – foraging on mudflats, saltmarsh, amid tidewrack on beaches, and sometimes in pasture.'

That made it very important to collect more information about what the birds do while they are here, where they go and when, so we could plan how best to catch them. When the plovers started arriving in early September, Centre assistant Chelsea Ralls set up a spreadsheet to record sightings: the first was on 9 September by Graham Brind who reported 10 birds feeding on the mudflats well out in front of the Godwit Hide. But Chelsea had to run the Centre and we needed someone able to spend long hours down at the Findlay Reserve watching plovers.

I was wondering who might take this on when Ann Buckmaster suggested JoJo Doyle who visits us every summer from Vermont, USA. 'JoJo's absolutely fascinated by the PGPs,' said Ann. 'She's been asking questions about them ever since she started coming here. She'd love to run

a monitoring programme.

I sent JoJo an email asking if she was interested and her reply left no room for doubt. 'Yes yes yes!!! And another yes!! This is a dream come true that we can find out where these buggers go!!! Sign me up and I am so happy you asked! I would love to do it. Frankly it sounds like a whole lot of mystery and fun and sleuthing too! Thanks for thinking of me.'

JoJo arrived here at 5.30am on 14 November and by 8am, jetlag or no, she was out looking for plovers. Her first report declared excitedly, 'It couldn't have been more perfect and meant to be with some magic sprinkled on top.'

That enthusiasm continued for the next five months (as you can see from JoJo's report on page 6). She was out virtually every day watching birds, organising volunteers and recording data. As Keith commented, 'We now know a whole lot more about what these birds do while they're here than we ever did before.' Indeed, JoJo and Amanda Hunt are going to write a paper about what has been learned about the Kuriri at Pūkoro.

Unfortunately, all the observing in the world didn't alter a few annoying facts. While at times the plovers did seem to be following a pattern, they always remained wary and unpredictable and their chosen sites kept changing.

Nevertheless, when we met Wally and his team at Auckland International Airport on the evening of 16 February we were confident of being able to outsmart the plovers. After all, Wally was the world authority on these birds. And the team from Brigham Young University Hawaii had caught plovers all round the Pacific. Dave Bybee was amazed to hear we had over 100 PGPs roosting together. 'I've never seen that many plovers in the one place,' he said. 'It ought to be easy to catch 10!'

The American contingent would be joined in the field by many of New Zealand's most experienced bird netters, including Adrian, Gillian, Tony Habraken and Ian Southey, who had caught thousands of birds in dozens of places round the world. And then we had the unparalleled amount of data collected by JoJo and her team. If that combination of skill, experience and information couldn't catch us 10 PGPs nobody could.

That first night at the Centre we gathered round the tables, enjoyed some fish and chips, got to know each other and planned tactics for a successful campaign. Unfortunately, (as Adrian reports on page 8) the Kuriri had other ideas.

First off we set cannon nets in three



CONTRASTS: Catching plovers from a car with a netgun in Hawaii; and with mist nets on the mudflats of Miranda. Photos / Wally Johnson, Jim Eagles.



NZ's 'super-wary kind of plover'

In 40 years of studying Pacific Golden Plover **Wally Johnson** has seen them everywhere from Siberia to Saipan and from Alaska to Australia but, he writes, he's never seen birds as wary as those at Pūkoro.

We were somewhat lulled into complacency on our first night of mist netting at Miranda with two plovers in hand. Thereafter reality struck and it was soon evident that we were up against a super-wary kind of plover beyond anything I've encountered in some 40 years of studying them! At least now we have experienced the full range of wariness behavior in this remarkable species.

In contrast to the wary New Zealand bird, Hawaii plovers have adapted to urban life and their behaviours are very different. They are often territorial and occupy just about every conceivable habitat, including backyards, cemeteries, parks, golf courses, schoolyards, roadsides and traffic islands, open understory woodlands, farm fields, etc. Hawaii plovers are relatively easy to catch with either mist nets or a net gun, often tolerate close approach and can even be trained to feed from the hand! This is unimaginable in New Zealand where plovers behave at the opposite extreme - ultra-wary and nearly impossible to catch.

After our good luck that first night we soon realized that it also was nearly impossible to predict movements of the Miranda flock amidst expansive coastal habitats and inland paddocks. Thus, most of our mist netting efforts were shots in the dark.

Why these extreme differences from one part of the winter range to another? Is it the vast mudflat environment? Are there behavioral cues from the large flocks of other shorebirds in the area? Is there a genetic aspect? I wish I knew!

Notably, one also finds variable behavior on nesting grounds. Some individuals tolerate close approach at the nest, perform distraction displays and vocalize literally at one's feet. Others don't display or vocalize but fly off when the observer is hundreds of yards from the nest.

We've often wondered if this duality reflects the bird's wintering site. Possibly the ultra-tame individual is one that winters in close proximity to people in a place like Honolulu and, given what we experienced in New Zealand, perhaps the ultra-wary one is from someplace like the mudflats at Miranda!



STANDOFFISH: Pacific Golden Plovers doing their usual thing at Pūkoro-koro – sitting on the mud far away from humans and other birds - where they are impossible to catch
Photo / Jim Eagles

Wonderful to watch but impossible to predict

JoJo Doyle looks back on six months coordinating a team of dedicated volunteers trying to monitor Pacific Golden Plovers in order to predict how these unpredictable birds might be caught.

When I arrived in New Zealand on 8 November, bursting with enthusiasm to take on my role as coordinator of the volunteer monitoring effort, things started exactly as they were going to continue. Waiting for me were two enthusiastic volunteers – the first of a long list of wonderful birders from all round the world – Tom and Jo Wells from Scotland. And the plovers immediately demonstrated that we could rely only on their unpredictability. I had been told that since September they had been sharing an area south of the Godwit Hide with Pied Stilts and Spur-winged Plovers. I knew that would be an easy catching site and felt a little disappointed that it might all be too easy. Hah. Of course the plovers promptly moved inland and started roosting in some fields north of the Shorebird Centre.

We decided we should watch these tricky birds three hours before and after high tide to see what they did. Sarah Tahir Wilding had always wanted to be involved with the Centre and soon she was reporting the PGPs spending a lot of time at their old haunt at the Limeworks area and writing entries like ‘on mud briefly but ran back into sarcocornia when people came’.

By now we had lots of information and produced the first of many charts correlating PGP roost times with the tides. It showed NO correlation whatever. Unlike the predictable Bar-tailed Godwits and Red Knots these birds walked to the beat of their own drum and not necessarily to the tides.

The changes kept coming. Big tides just after Christmas flooded the regular roosts and the plovers vanished until suddenly we realized they and 5000 other birds were hanging out on a new set of paddocks behind the Centre. Jeremy Painting, Russell Canning and David Thomas reported that a lot of plovers were at a new roost created when the storm surge a year before burst a stopbank near the mouth of the Piako River.

Then suddenly local resident Marijke Batenbjurg, who decided to spend her holidays watching plovers, found them starting to act more like godwits and knots, with the tide pushing them off the mud about three hours prior to high

tide whereupon they roosted at the Limeworks consistently, habitually, normally.

Darion Rowan turned up in her campervan which made the perfect base for birdwatching for a few days. Dai Stacey arrived from Wales for his annual stint as a volunteer shoreguide and also joined the monitors. We wondered if the birds had stopped using that nice area south of the hide because the vegetation had grown tall so he and others turned out to clear the wild silverbeet. The plovers took no notice.

Plovers were often seen flying south towards Waitakaruru; John Charteris, an ecologist and longtime member of PMNT, offered his boat and off we went at 5am; no plovers but it was a great trip. How could we track them at night; we started training to recognise the bird calls in the dark; we got quite good at knowing when PGPs were passing overhead.

More wonderful volunteers came and went, birders from Austria and Portugal, kiwis like Emma Salmon, Jenn Sheppard, Oscar Thomas and Mary Perwick among others. Meanwhile the plovers continued to spend most of their time at the Limeworks in flocks of 80, 90, 106. It was all going along just perfectly. Adrian Riegen was happy and even mowed a strip across the sarcocornia for a cannon net. Everything looked good.

Then, on 10 February, just six days before we were due to start catching I had to send out a shocking email: ‘NEW DEVELOPMENT, NEW BEHAVIOUR, NEW ROOST’. Yes, the plovers had abandoned the Limeworks and now went to the Stilt Ponds every day as well as regularly disappearing inland.

Our team went into overtime. We got permission to explore local farms, checked the area south of the hide, watched the Limeworks and the ponds, got reports from Piako from Phil Hammond, took our scopes to hilltop observation points. We recorded every movement and every sighting in detail. And we caught three plovers.

Ah well, at least my early fears that we’d have nothing to do and get bored proved groundless. I can’t wait to do it again!

roosts the plovers had regularly used and they either went somewhere else or carefully skirted round the catching areas. We tried using some lovely PGP decoys the Americans had brought with them and the real birds stayed away. We concealed ourselves far more carefully than if we were looking for godwits or knots – once even hiding on the edge of the mudflats in an area the king tide soon filled with water – but the plovers weren't fooled. We tried walking them into the catching area and, when Wally warned that 'plovers don't like being pushed,' we sat for hours hoping they would move of their own accord. None of it made any difference.

The closest we got was when about 40 PGPs came to the very edge of the catching area – one or two may even have been inside – and seemed to be drifting quietly closer . . . when a juvenile Kahu flew over and spooked the lot. The only time the cannons were fired was to catch Wrybills.

Most nights we also set mist nets and, because the Hawaiians had brought their own mist nets to add to the Centre's, there were a lot of nets. The very first night we got two birds – later named Jim and JoJo – which were brought back to the Centre to be weighed, measured, banded and fitted with satellite tags. Amid the celebratory handshakes, hugs and misty eyes, it did seem as though catching 10 might be easy after all. But no. After that the mist nets, like the cannon nets, remained empty. The plovers were just too clever, unpredictable and wary, their big eyes watching our every move, their cunning brains out-smarting us.

After 10 days the American team had to return home, amazed (as Wally reports on page 5) at how wary our Kuriri are. The New Zealand team carried on when commitments allowed and finally the mist nets caught one more bird – Amanda – who was also duly fitted with a tag. At that point we decided to stop, partly because everyone was exhausted, but also because it was getting close to migration time and we didn't want to subject the birds to the trauma of capture too close to their long flight home.

But we will resume catching next year. We have already received permission from DOC to extend our Wildlife Act permit by a year. Over the next few months Chelsea will keep the seven remaining tags live and fully charged. And next September, when the Kuriri return, we will start again using some different tactics (sorry, I'm not going to reveal those, because we think the plovers have a mole who has been leaking our plans . . . though I can say we might



FAILURE AND SUCCESS: (from top) cameraman Johan Kok had the foresight to wear gumboots but the other catchers trying to stay concealed just had to get wet; Dave Bybee puts out the very lifelike PGP decoys from Hawaii; the two birds caught in the mist nets are quickly whisked off to a comfortably padded carrying box.

Photos / Johan Kok, Jim Eagles



PERFECTLY CAMOUFLAGED: But the Kuriri weren't fooled into approaching this cannon net. Photo / Jim Eagles

First Kuriri catch at Pūkoro-ro a big challenge

Although he's hugely experienced at catching and banding birds, **Adrian Riegen** found catching Pacific Golden Plover extremely difficult but, he reports, the results have already made all the effort worthwhile.

All summer the Pacific Golden Plovers have been centre of attention, starting with JoJo Doyle and her volunteer army monitoring their movements almost minute by minute to give us the best chance to catch the 10 we wanted.

In the past we have only caught six PGPs, one in 1991, one in 1993 and three in 2005, all at Jordan's Farm, Kaipara Harbour, plus one at Karaka in 2016, and even they were not specifically targeted but were in catches of other waders. None have been caught at Miranda although we have often thought about trying to catch them at the Limeworks, the spot they seem to favour most, but it is a tricky site and PGPs are notoriously wary.

We had hoped to do this catching together with Wally Johnson and his experience plover-catching team from Hawaii during a week of high tides which should force the birds off the mudflats. For months they had roosted at the Limeworks, on the mud or in the sarcocornia, which was looking promising for a cannon net catch. But, and it's a big BUT, the plovers must have sensed the heightened attention being paid to them, even from behind the lovely screen JoJo had woven to sit behind at the Limeworks, because a week before the Hawaiian team arrived, they suddenly changed their roosting habits and were roosting in the Stilt Ponds one day, paddocks the next, or both on the same day.

Undaunted we tackled the problem with cannon and mist nets. A full moon did not help the mist netting as plovers have very good night vision and so would likely avoid being caught.

However, we caught two just before dawn on the first day which was a good start. With the help of Wally Johnson and his team these two were fitted with GPS pinpoint tags and given names, which we don't usually do. The first, a male, was named Jim, in honour of Jim Eagles who had driven the whole project, the other, a female, was named after named JoJo. These two were released and waddled off while they got used to the harness that holds the tag on their backs.

The rest of the week was spent setting nets, moving nets, getting up early, staying up very late, getting up early again, and moving nets again, until everyone was pretty drained but still the plovers eluded us. With the ponds flooded again the birds chose to roost at the northern end of the ponds where we felt we had a chance and indeed they did land in front of our nets but just outside the catching area.

With everyone else concealed at the Stilt Hide and Chelsea Ralls hidden with the firing box I attempted to convince the plovers to walk 10m into the catching area. Moving closer at a pace even a snail would find tardy, I gradually got all the other birds around, godwits, knots, Wrybills and stilts, walking into the catching area. But the plovers just stood their ground staring at me intently until I moved a millimetre too close for their liking and, with a short, sharp alarm call, they were off to a paddock across the road. After that failure, the Americans had to leave, and the rest of us took a break.

When we returned the pattern remained the same until we had one last go with the mist nets. Everyone waited in the Limeworks car park while Tony Habraken and I hid in the mangroves and eventually we caught one more plover.

After a pressure-filled hour fitting the tag on our own for the first time we were exhausted and relieved we had only caught one. When the first two were processed there were too many people watching and both birds needed veterinary care from Megan Jolly of Wildbase to lower their stress levels before being released. To avoid this happening again we kept the people working on the bird to a minimum with the rest watching from outside.

This third bird was named for Amanda Hunt, this year's shore guide, who worked tirelessly for the project. We had to find somewhere clear to release Amanda (the bird) and Tara-maire, with its shells, was a good option. Amanda released her namesake who walked 100m to the water's edge. I watched nervously with a thermal imaging device, in case she landed in the water, and was very relieved when she flew across the creek to join a flock of SIPOs. The whole process had left us exhausted and we decided that was enough for this season. We would see how well these three performed and hopefully deploy the rest of the tags when the birds return later this year.

As I write this we know Amanda and JoJo have both reached Japan and hopefully will soon depart for the Arctic. Jim has finally left Pūkoro-ro and made it to Guam. Amanda, by flying non-stop to the Japan, has already told us more about Pacific Golden Plover migration from this country than has been learnt throughout the entire history of New Zealand ornithology. Fingers crossed we learn so much more.

start earlier in the season when the plovers seem more predictable).

In the meantime, we had Wee Jimmy, JoJo and Amanda and their tags to watch. JoJo (the human) had to make her annual migration home to Vermont in the US leaving Amanda (the human) to keep an eye on the birds.

The tags were programmed to start test transmissions in late March so we were all waiting anxiously for the first report from Lee Tibbitts in Alaska, who had also worked with the Centre to track the flight of E7 and with Wally on his PGP work. We did know that satellite tracking was a tricky business, because the tag has to get

three good GPS fixes before it sends a report, and a satellite from the Argos system has to be in position to receive the data.

Nevertheless, as time passed we did get a bit twitchy. Eventually Keith asked Lee what was happening and she replied, 'I've been checking for data from the three birds since last night, but have not heard



TAGGING: (clockwise, from top right)
Jim Eagles gets emotional on being introduced to his namesake by Adrian Riegen;
Wally Johnson and Mike Weber weave a harness from nylon thread watched by Adrian;
Jim with his tag; Wee Jimmy with his tag;
Adrian checks out JoJo's plumage;
Tony Habraken and Adrian Riegen concentrate on the tricky job of fitting a tag to Amanda.
Photos / Jim Eagles, Johan Kok, JoJo Doyle.





ANNOYING: Cute but irritating Wee Jimmy was the first PGP caught and probably the last plover in New Zealand to migrate. Photo / Jim Eagles

Waiting for Wee Jimmy

Summer shoreguide and devoted ploverphile **Amanda Hunt** watches for our three tagged Pacific Golden Plovers to depart and reflects that they were uncooperative to the very last.

Five hours into watching the world's most annoying Pacific Golden Plover once more refuse to leave, even I began to lose patience with the little monster. Throughout the summer, my devotion to PGPs had been unwavering (or obsessive). But just as things seemed to be winding down, Tony Habraken suggested I keep an eye on departure dates. Like everything related to PGPs, what was intended to be casual observation morphed into a vigil. True to form, they remained uncooperative.

A total of 106 PGP were on the Firth of Thames at the peak of summer. They hung out together at Pūkoro/Miranda for a while, but from early February the birds divided pretty evenly between Miranda and Piako. As March drew to a close and likely departure dates came nearer, I watched closely. Late in the month numbers at Miranda were steady around 45-50. That was, until I went away for a few days. Twelve PGPs took advantage of my absence to leave as well – on April Fools Day, I expect – so 4 April found 33 birds at Miranda, and 20-25 at Piako. Jim and Amanda were at Miranda, JoJo at Piako. Numbers stayed that way for a few days. Then, sometime on the afternoon of 7 April, 21 PGPs set off from Miranda for places unknown (to us). In their usual way, they did this far out of sight.

The morning of 8 April saw just 12 birds at Miranda including Jim and Amanda. I began to wonder whether the transmitters had affected their migration preparations. But on 9 April, great excitement – Amanda had gone! Initially, it looked as if she had left with just three other birds, as there were still eight at Miranda. Once more, however, not all was as it seemed. A closer look found one of the remaining birds was JoJo. A check at Piako found evidence of an exodus. Just one PGP remained, down from 14 two days before.

The surprise appearance of JoJo at Miranda suggested that birds from Piako had called into Miranda at the start of their migration, picking up a few friends – including Amanda – on the way. For some reason, though, JoJo chose to stop off at Miranda. Maybe she didn't want to leave without Jim. JoJo stayed at Miranda for several days. I began to worry that she might not leave. But on the morning of 13 April, she too had gone, leaving just two PGPs – one of whom was Jim.

Jim had a friend with him for several days. But sometime on 16 or 17 April, even this bird abandoned him. I watched Jim fly around above the Stilt Ponds and Limeworks, calling for 10 minutes, without finding any other PGPs. He finally drooped onto the Limeworks all alone. I nearly cried. For a whole week, Jim remained at Miranda, eating worms. But on April 23, after being publicly shamed on National Radio, he finally left. The irony of the bird named after the project instigator being last to leave, is not lost on me. It sums up the species perfectly.

anything. It is nerve-wracking but not unusual that the tags have not reported yet. . . I've been looking at the satellite overpasses and saw some good ones earlier today so that makes me nervous. But we don't know anything concrete at the moment. Hang in there!

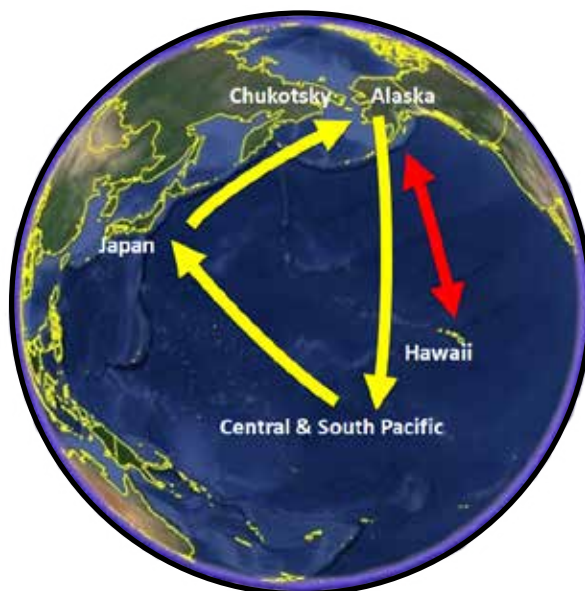
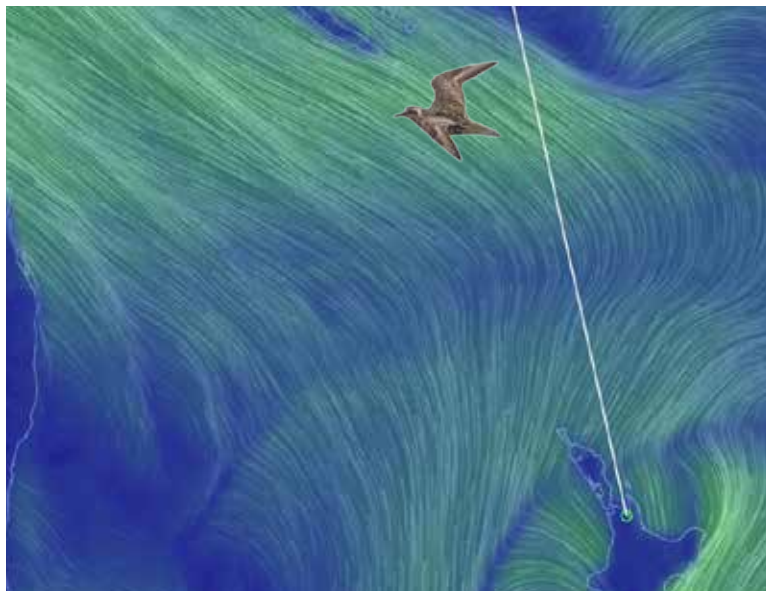
Then, at 5.53am on April 3, Lee emailed, 'Yahoo we got data!' The GPS fixes she sent showed JoJo at the Piako River mouth, while Jim and Amanda were at Pūkoro/Miranda, which is where we had seen them. Our replies indicate our relief: Jim – 'Fantastic.' Amanda – 'Whoop whoop!' JoJo – 'So exciting. It's working! So cool!' Keith – 'Splendid news and most reassuring!'

Soon afterwards (as Amanda reports at left) the birds started leaving. Amanda probably left on the afternoon of 8 April and four days later JoJo followed. Wee Jimmy hung around on his own until 23 April by which stage he was quite plump and displaying breeding plumage and we despaired of him ever going. That morning I was teased on *Morning Report* about the bird named after me refusing to leave and said that right after the interview I would head to the mudflats and give my namesake a stern talking to. I guess he had been tipped off by our mole because on arrival I was met by Amanda who said, 'Wee Jimmy flew out 10 minutes ago.'

After they left, of course, we were dependant on Lee Tibbet's emails from Alaska passing on the fascinating, often patchy and sometimes confusing data from the satellite tags. On 11 April we got a report indicating that Amanda was flying northwest across the Coral Sea. Three days later a transmission from JoJo showed her also heading northwest from New Zealand. Then on 20 April came the wonderful news that Amanda was in Japan, probably having landed on the afternoon of the 16th after an eight day flight. Honshu, where she touched down, is where almost all the South Pacific birds Wally has tracked over the years also stopped. 'That island,' he said, 'is clearly plover central during spring migration!'

The GPS track indicated she was close to the mouth of the Maruyama River, on the Boso Peninsula. PMNT's international representative David Lawrie contacted Komoko Ichikawa, who works for Japan's Ministry for the Environment and represents Japan at the East Asian-Australasian Flyway Partnership. She drove down to check out the site but, in true PGP fashion, Amanda was nowhere to be seen.

Two days later a further fix put Amanda in a park in Chiba, on the outskirts of



NAVIGATORS: (from left) JoJo's path after departure (indicated on the windmap by the white line) shows how she used the winds to reach Japan; the map recording the route followed by most Pacific Golden Plovers from the South Pacific gives a possible indication of what our birds may do. Pictures / earth.nullschool.com, Wally Johnson

Tokyo, though it wasn't clear if she was roosting or flying past. Tomoko contacted the adjacent Museum of Natural History whose staff scoured the park but found nothing. Adrian wasn't impressed, 'Well that's typical! It looks like once they leave New Zealand they forget all the elusive stuff and revert to being garden birds. I bet there's a McDonalds close by.' Tomoko set up a Facebook group from the Ministry for the Environment and the Wild Bird Society of Japan ready to respond to any further opportunity to sight the birds on the ground but since then there hasn't been much they could follow up.

Meanwhile, after a period of silence, JoJo reported on 26 April that she had reached Japan on the 20th. Like Amanda she made landfall on the east coast of Honshu, but a bit further south at the coastal city of Odawara. Lee estimated her to have flown 9,990km, which makes it the longest recorded flight by any PGP. JoJo seems to have spent a few days resting on islets in the Sakawa River which flows through the city before heading northwest. Then on 2 May we heard she had apparently settled down in a rural area in western Honshu near the small city of Tokamachi.

As for Jim, the 2 May report showed that after leaving Miranda he took a north-westerly course slightly east of the other birds, until in mid-Pacific he swung left and headed for Guam, where he may now be resting. Lee has contacted the US Fish and Wildlife team on Guam to ask them to look for him.


So what happens next? The reports from the tags will tell the story. But Wally is currently writing up the research he did last year on birds tagged in Moorea and

this shows that they stayed in Japan on average about 18 days (range 3-30 days). They then moved on to Alaska, mostly arriving mid to late May, finally reaching their breeding grounds late May-early June. Only one of those tagged birds was recorded returning to the South Pacific and it flew from Alaska not to Moorea but to Samoa within the period 5-16 September. At that point its signals stopped.

When Wally examined our birds he thought JoJo's physical characteristics indicated she was from Alaska so she would likely follow the same timetable as the Moorea birds. But Jim's physical characteristics suggested he could be from Siberia meaning his tardy departure might be because the breeding grounds there thaw

quite late. So it's possible we might have tagged birds following different timetables and ending up either side of the Bering Strait which would be very exciting.

We'll be watching anxiously over the next few weeks as our birds fly on to their breeding grounds. And we'll be watching with fingers crossed around September when, hopefully, the tags will record at least one of our trio returning to the Hauraki Gulf. But whatever these incredible Kuriri do will be fascinating to see. . . like everything else about this project.

•To keep up-to-date on our Kuriri visit the project page on our website at www.miranda-shorebird.org.nz or follow us on Facebook or Twitter (there are links to them on the website). 



DIFFICULT TIMES: Having a bird named after you is a big responsibility. Naturally you worry about how your namesake is doing. And it seems there can be a bit of personality transference. JoJo Doyle (at left) has copied her bird and migrated, in her case back to the US. Amanda Hunt (at right) is making an inland migration to Rotorua where she will finish writing a poem about her trailblazing sister. And Jim Eagles (centre) will shortly fly to Alaska, probably reaching the Arctic ahead of his namesake, who delayed migration to the last minute so he could keep scoffing worms. It's a worry.



THE MARMITE TEST: (from left) Errika Joel, Emma Houghton, Mike Weber and Dave Bybee. Photos / Jim Eagles

US plover lovers enjoy a taste of New Zealand

Fish and chips, Marmite, Kapiti ice cream, L&P, Spaghetti fatto da Woodley, Sloppy Joes and a surprise church potluck dinner were among the highlights enjoyed by the seven-strong American plover-catching team during their 10 days in New Zealand. As that rather indicates, they didn't travel much beyond the mudflats of Miranda, but they did get to enjoy an interesting mix of food.

That started the night they arrived when they tucked with great enthusiasm into a communal feed of fish and chips from Kaiaua Fisheries. There was a little less enthusiasm the next morning when Chelsea Ralls offered them that noted New Zealand delicacy Marmite on toast. The faces in the photo rather say it all.

A big favourite was Kapiti ice cream from the Pink Shop in Kaiaua which all of them – especially students Emma Houghton and Errika Joel – lapped up as often as possible. Roger Goodwill, a connoisseur of fizzy drinks, was much taken with unique local products like Lemon & Paeroa. Wally Johnson, who adores apricots, was ecstatic to be presented with his first ever apricot pie.

The communal dinners each night were highly successful, starting with Keith Woodley's famous spaghetti bolognese and ending with some delicious Sloppy Joes produced by Wally and partner Diane Smith.

In between eating and trying to catch birds the visitors did enjoy a couple of outings. Keith took a shopping trip to Thames. Jim and Chris Eagles led an expedition to the new Piako roost, which was a flop from a birding perspective, but a triumph when blackberries were discovered and everyone end-



WALLY JOHNSON: Happy pie-lover.

ed up with purple fingers and mouths.

Chris also took Wally and Diane shopping in the craft shops of Clevedon while Jim led the rest through the bush at Waharau Regional Park where they marvelled at the similarities of plants and names to their native Hawaii.

But the most exciting outing came on Sunday when the five from Brigham Young University Hawaii headed off, with a nervous Dave Bybee at the wheel of their rental van, to find a Church of Jesus Christ of Latter Day Saints. Google advised that the nearest chapel was at Princes St, Pukekohe, so they asked Google Maps to provide directions to Princes St and set out. Unfortunately Google Maps didn't explain that there are several Princes Streets in Auckland and took them to the one in Otahuhu.

There was no sign of a chapel but one house did have a picture of Jesus outside so they knocked at the door. It wasn't a church, and the owner explained that the picture had been pasted up by her granddaughter, but she was able to direct them to an LDS chapel not far away. There the unexpected guests

from Hawaii were greeted with huge warmth and after the service they were given a tour of the town and invited to a potluck dinner. 'We had to admit that we didn't have any food to contribute,' said Dave, 'but they told us that was fine, they'd organise it all, and before long they had an amazing meal. It was a truly wonderful experience.'

Even though the team departed with only two of the hoped for 10 plovers having been caught, since getting home they've sent many messages saying how much they enjoyed their time at the Shorebird Centre

Mike Weber offered huge thanks for a wonderful experience. 'What I remember most about our stay is how kind and helpful everyone was to us. It is absolutely remarkable that so many people spent so much time on the plover project while many had full-time jobs, family and other responsibilities.'

Emma said, 'I am so thankful for the opportunity to have been at the centre. It really became a bit like home with all the wonderful people there.'

Roger also enthused about the hospitality. 'We didn't catch all the birds we wanted but that just tells us that there is more to plovers than we currently understand. They behave so differently in New Zealand than in the other areas we have seen them. That in itself is noteworthy. It was a great experience and one I hope we can repeat in the future.'

And Wally concluded, 'What a marvelous experience it was to work with the Kuriri Katchers at the Shorebird Centre. It was such a pleasure to meet all of you. International cooperation of the best kind! Let's do it again!' 🐦



GOOD QUESTION: Members of the Orbit Trio and composer Kirsten Throm react with delight to a request to play *A Flung Scarf of Wrybills* again. Photo / Jim Eagles

Record-breaking start to Year of the Wrybill

Two world premiers and a world record have got the Year of the Wrybill off to a fly-ing start. An unusual mix of music, poetry, a report on the latest Wrybill banding and a talk on the work being done to protect the birds' South Island breeding grounds produced one of the biggest crowds seen at the Shorebird Centre for some time, with more than 120 people filling the Sibson Room and spilling on to the deck.

Visitors were greeted by a Year of the Wrybill banner over the entrance and in the shop by a display of Wrybill clothes, books, stickers, mugs and soft toys.

Things got underway with a performance by the Orbit trio – flutist, violinist and cellist – made up of talented young musicians from the Auckland Philhar-monia Orchestra's Young Achievers pro-gramme. Their programme of classical music by some of the great composers drew enthusiastic applause.

But the clear highlight was the world premier of *A Flung Scarf of Wrybill*, inspired by the amazing aerial ballets performed by flocks of Wrybills above our mudflats, written for the occasion by the APO's Young Composer in residence Kirsten Strom. The beauty of her sweep-ing, soaring music, and the way it painted the Wrybills in sound, meant many in the audience had tears in their eyes when it ended and the applause was tumultuous.

When Kirsten stepped up to talk about her music and asked for questions, longtime PMNT member Gwenda Pul-ham sparked laughter and cheers when

she asked, 'Can we hear it again?' It was obvious that was what everyone wanted and so Orbit played *The Flung Scarf* for a second time and it sounded even better.

The second world premier followed soon afterwards when this season's sum-mer shore guide Amanda Hunt (below), who is also a published poet, gave a read-ing of a new piece of verse inspired by the story of a female Wrybill seen at Forest Creek on the Rangitata River.

Wrybill 2019

Four inches high, she stands
ferocious on the river bed
gravel at her feet
squeaks of a tiny chick behind.
Her mate, flying ace, hurls himself
once more towards the enemy
drawing fire from a
giant circling Hercules:
mentioned in dispatches
'defending the territory vigorously



from black-backed gulls':
gutsy; fearless; definitely a
keeper.
Survivor of the twenty-
eighteen flood
somehow getting her
chick away
from a thousand
cumsec onslaught
Mother of the Year.
They come here
every year.
It's where
all the kids

were born.

Be quiet, she hisses.

Go to the bunker.

She closes on the undefended flank
letting loose the air raid warning.


Wing Commander C96254:

do not mess with this woman.

The guest speaker for the event, Nick Ledgard, chair of both the Ashley-Rakahuri River Care Group and the umbrella Braided River Aid (or BRaid), presented an inspiring talk and video on the effort volunteers are putting in to deal with problems like weeds, predators, 4WD drivers and rapidly changing water levels which take their toll on Wrybills and the many other unique birds which breed only on those rivers.

Because of the threats they face, he said, their numbers are slowly declining and there are now only about 5000 left in the world. Indeed, more than half the Wrybills in the world are right now escaping the South Island chill at Miranda.

The world record part of the programme came when the chair of the Centre's banding committee, Adrian Riegen, gave the speech of thanks to Nick. In the process he reported on a recent catch of 202 Wrybills on the Stilt Ponds.

Among them were 43 retraps, including one first banded at Taramaire on 25 July 1993, giving it a minimum age of 26 years three months. That easily beat the previous oldest known Wrybill which was a mere 22 years. Another in the catch was a minimum of 23 years old. 



SPOT THE BIRD:
Educator Alex Eagles-Tully points out some Pacific Golden Plover to pupils from Kaiaua School.

Below: Bird facemasks made by pupils from Netherton School.

Shorebird Snippets

School visits keep educator on the run

It has been a busy time for educator Alex-Eagles Tully with five classes visiting the Shorebird Centre and seven outreach visits to schools in Term One. Photos of the school visits as well as post visit artwork and writing can be viewed on the Bird Educator Twitter account (@bird_educator) as well as on the Education page of the Centre's website.

Three classes have already booked to visit the Centre in Term Two and six have asked for school visits some of which will probably result in field trips later.

Tauranga City Council has given permission for The Flock 2019 to be held from 16-22 September during Conservation Week at Memorial Park beside the Tauranga estuary.

Laserworx have cut out 1200 wooden birds many of which have already been delivered to schools. Resene has kindly offered to provide free undercoat, varnish and test pots in a range of colours. Anyone who would like to be involved can contact educator@shorebirds.org.nz.

Schools are also being invited to participate in the EAAFP World Migratory Bird Days, which have the theme of Protect Birds: Be the Solution to Plastic Pollution, on 11 May and 12 October.

TLC for the Centre

'The Centre is showing its age,' PMNT Building Subcommittee chair Ann Buckmaster noted in a hard-hitting report to the latest Council meeting, which sparked a discussion on what to do about the building.

'Great progress has been made, notably with replacement of furniture, two cookers, mattresses, a fridge and floor



re-surfacing, using grants and bequests,' she said. 'But much remains to be done.'

'There are now several urgent and costly renovations needed. The internal roof channels leak and the unit bathrooms and those in the public area are of less than an acceptable standard.'

Ann noted that a recent comment in Trip Advisor observed that 'the buildings that house the Shorebird Centre are a bit tired looking but the story of the birds feeding on the flats a short walk away is one the displays inside tell well.' 'Is this,' she asked, 'the image we want?'

Maintenance projects are being progressed. The leaky internal gutters mentioned in Ann's report will be looked at by a working bee led by Adrian Riegen.

In addition, a funding application has been lodged for around \$20,000 to cover the cost of upgrading the bathrooms in the two existing self-contained units. But, Ann warned, success in such applications is by no means guaranteed.

There are also wider issues. Ann commented in her report that it was important to ensure any upgrading – such as of the bathrooms – fits into a longterm devel-

What's on at the Shorebird Centre

26 May (revised date) – Annual General Meeting

10am Guest speaker Mick Clout, chair of the Kakapo Recovery Group, will talk about this highly successful programme. Birdwatching afterwards.

8 June, Planting Day

9am Help to launch the restoration of the Robert Findlay Reserve by playing your part in planting 600-700 plants in an 850 sq/m test block. Birdwatching, hot soup and bread afterwards.

23 June, Firth of Thames Wader Census

Phone Tony Habraken, 09 238 5284 for details.

10 August, Winter Pot Luck Dinner

10am-2pm Working Bee; 3pm High Tide; 6pm Dinner and World Premier of documentary *The Flight of the Kuriri*.

10-12 September, NZ Dotterel Management Course

Details from the Centre.

4-6 October, Nature Journaling Course with Sandra Morris.

Details from the Centre or our website.

opment plan.

The Council has had several discussions about redeveloping the Centre to meet future needs, with proposals put forward to add on a lecture theatre, wet-labs, more self-contained accommodation units, extra room for the shop and increased display space. But no action has resulted, due to a lack of consensus among Council members, and because of the considerable cost.

Jim Eagles has made a provisional arrangement with Auckland University's School of Architecture for a team of students and a lecturer to carry out a project to come up with a longterm plan to redevelop the Centre. This would involve the architectural team visiting later this year, talking with people involved with its operation, engaging with design issues/problems and coming up with design proposals.

Then there is the question of how to fund work on the Centre. Through a major fundraising campaign, several small fundraising efforts for individual projects or by digging into our reserves, some of which are specifically designated for building work?

The Council noted that while Trust does have more than \$200,000 in financial reserves (as shown in the annual accounts on page 21), the amount has been declining as a result of running deficits in the past couple of years and would quickly be eaten up by any significant work.

Back to Korea

By the time you read this a PMNT team have been to the Democratic People's Republic of Korea for the sixth – and possibly final – leg of a wader survey of the entire coastline.

The team of Adrian Riegen, David Melville, William Perry and Keith Woodley arrived on 1 May and will spend around two weeks there and in China.

The team hopes to survey the last remaining piece of the coast, which is also the most sensitive, near the border with South Korea, with which the DPRK is technically still at war.

Adrian said he was 'hopeful of visiting the southern parts and we now have permission to visit one of the five sites I want to go to.'

Meanwhile, a planned visit to New Zealand in October by four representatives of the Nature Conservation Union of Korea appears to be still on track with some of the costs covered by a US\$5000 grant from the East Asian-Australasian Flyway Partnership.



FIELD GUIDE: (from left) Two Sharp-tailed Sandpipers and a Grey-tailed Tattler.
Photo / Jim Eagles

Lots to see besides the Kuriri

It has been a Pacific Golden Plover summer at Pūkoro Mirando. These elusive, enigmatic birds were the focus of a concerted effort to monitor, track and catch them. Colossal volunteer hours were spent trying to learn enough to predict where to set nets. In the end all but three eluded us.

All was not in vain however. There are three birds out there with functioning GPS trackers. We also learnt a great deal about the way these birds use the Firth of Thames.

In particular, they encouraged us to pay more attention to the roost near the Piako river mouth, where there gathered many birders, for it is a spectacular place.

Over a thousand Pied Stilts, several hundred Pied Oystercatchers and Bar-tailed Godwits were regularly present, as were several hundred Red Knots and Wrybill. There were numerous Grey Teal and Paradise Shelduck and, at various times, seven Whimbrel, three Far Eastern Curlews, two Hudsonian Godwits, a Black-tailed Godwit, 12 Royal Spoonbills, seven Cattle Egrets, a Pateke and a Glossy Ibis.

Back at Pūkoro Mirando the main attraction for visiting birders was the Broad-billed Sandpiper that was still here in mid-April. Previous records of this species on the Firth have tended to be of briefer duration. But staying a long time did not mean it was regularly on show: many people managed to see it, but it eluded many others.

However on some occasions when it was in view, it had company: the six Sharp-tailed Sandpipers, two Pectoral Sandpipers, two Curlew sandpipers and the Grey-tailed Tattler sometimes offered a view to the visitor not unlike that of a field guide plate.

Keith Woodley

Recent sightings at Pūkoro

Migrants

440	Bar-tailed Godwit
250	Red Knot
3	Ruddy Turnstone
1	Pacific Golden Plover
4	Sharp-tailed Sandpiper
2	Red-necked Stint
1	Curlew Sandpiper
2	Pectoral Sandpiper
1	Broad-billed Sandpiper
1	Grey-tailed Tattler
1	Glossy Ibis

New Zealand species

2200	Wrybill
5140	SI Pied Oystercatcher
150	Black-billed Gulls
50	Banded Dotterel
33	Royal Spoonbill
20	Caspian Tern
8	Variable Oystercatcher
	Australasian Bittern
	Australasian Shoveler
	Banded Rail
	Hybrid Black Stilt
	Pied Stilt
	Spur-winged Plover
	White Fronted Tern



PRODIGAL PLANTS: (from left) Maori Musk has been rediscovered on the reserve; six month old Makaka seedlings sourced from the Shorebird Centre grounds. Photos / Janie Vaughan, Ray Buckmaster

Restoring the mauri of our land

PMNT members have a wonderful opportunity to help transform the Robert Findlay Wildlife Reserve, and ultimately the whole of the coastal catchment, back into habitat for native plants, birds, reptiles and insects, writes **Ray Buckmaster**.

It is hard to imagine. For the price of a very average Auckland section PMNT acquired 27ha of coastal land, including a rare and growing geological feature, the chenier plain, two major high tide roosts adjacent to the third most significant Ramsar site in New Zealand, excellent examples of coastal habitats and a store of birds and plants, both common and rare.

For the Trust it is an incredible opportunity but also a considerable management responsibility. While our primary focus is the avifauna it is important to remember that the N in PMNT stands for Naturalist. Within the membership there are entomologists, botanists, microbiologists, conchologists and probably a whole lot of other -ists. The Trust is keen to restore the lost biodiversity of the Reserve and maximise the experience and involvement of members and visitors with these very diverse interests.

A stocktake of what the Reserve has to offer has been underway for a while. What is considered one of its best features, the Stilt Pond high tide roost, is the one positive legacy of the time when shell was removed from the area to produce agricultural lime. This is a prime target for restorative action as it can no longer be drained to and refreshed by the sea. When the pond is full over an extended period it becomes the home for waterfowl, the water being too deep for shorefowl, the customary occupants.

The rest of the Reserve is a mosaic of plant habitats. Those, most directly influ-

enced by tidal cycles, make up much of the area. The saltmarsh and salt meadow communities have a largely intact complement of native plant species. In fact, one species, Maori Musk (*Thyridia repens*), long thought lost to the Reserve was recently re-discovered.

It is in the areas where salt meadow transitions into the higher remains of the exploited chenier ridges that major restorative action is required. An exotic plant community, pasture, was established here in the mid-1950s, one that is

**Would you like to be involved?
The planting will happen from
9am on Saturday 8 June. With
some willing hands it could all
be over by around 11am.**

totally alien to these shores although economically very significant. These pasture areas occupy one third of the Reserve and just about every plant species originally came from overseas. Two species are seriously invasive. Very few native plants are to be found and there is a similar absence of our native animals.

So, the restoration challenge is twofold. Firstly, deal to the invasive species that dominate significant areas. Secondly, reverse the bio-diversity loss by establishing a self-sustaining, native plant community that is adapted to the dramatic variations of salinity and aridity to be found in the sea meadows and human-modified chenier. In doing so we will create an en-

vironment that is more suitable for a rich diversity of New Zealand fauna. It will provide more food and shelter for species already present, be they invertebrates, skinks, Banded Rail or Bittern. When fully restored it will also be suitable for the re-introduction of Fernbird.

The big question to be answered is just what should the plant community consist of? There are very few clues to its past on the Reserve itself. The burn-offs involved in establishing pasture and the subsequent cattle grazing have largely removed natural vegetation. In 1984 a portion of the Reserve was fenced off to see if natural regeneration would occur. Sadly, it did not. In one small corner there is a patch of remnant vegetation with a few shrubs of Saltmarsh Ribbonwood/Makaka (*Plagianthus divaricartus*). Outside the Reserve this species is more common and the roadside vegetation, being ungrazed, gives us a better idea of what could have existed on the Reserve prior to the establishment of the Limeworks in the early 1930s. It is however a very incomplete picture so there will be a creative element in the restoration process.

Local observations and previous vegetation surveys suggest a list of just 15 species that could thrive in the challenging conditions found on the Reserve. Just a few of these, including Makaka, Oioi (*Apodasmia similis*), mingimingi (*Coprosma propinqua*), and Flax/Harakeke (*Phormium tenax*) would pre-dominate with lesser numbers of the other species.

In time the Reserve would become very different in appearance so care will need to be taken to preserve sight lines for birders and photographers, whilst making their presence less intrusive for the roosting shorebirds.

An area is in preparation for a trial planting of around 850sq/m. We need a trial to support an application for funding but mostly to confirm the most suitable situation for each species before we attempt planting on a larger scale. It will involve 600-700 plants going in the ground, half of them bought by the Trust, the rest grown by volunteers.

Would you like to be involved? The planting will happen from 9am on Saturday 8 June. With some willing hands it could all be over by around 11am. We have organised a 3.7m high tide about then, ideal for a bit of birding. Should you need more encouragement to get some dirt under your fingernails there will be homemade soup and bread at the Centre.

All the plants used will be eco-sourced, that is, they will be grown from seed gathered in the area where they will be planted. Eco-sourced plants generally grow more strongly, survive at a greater rate and produce more seed for better self-generation. Members of the Trust are gathering seed to be grown on for planting in the 2020 winter and many are already germinating. You could help here as well by raising some for us.

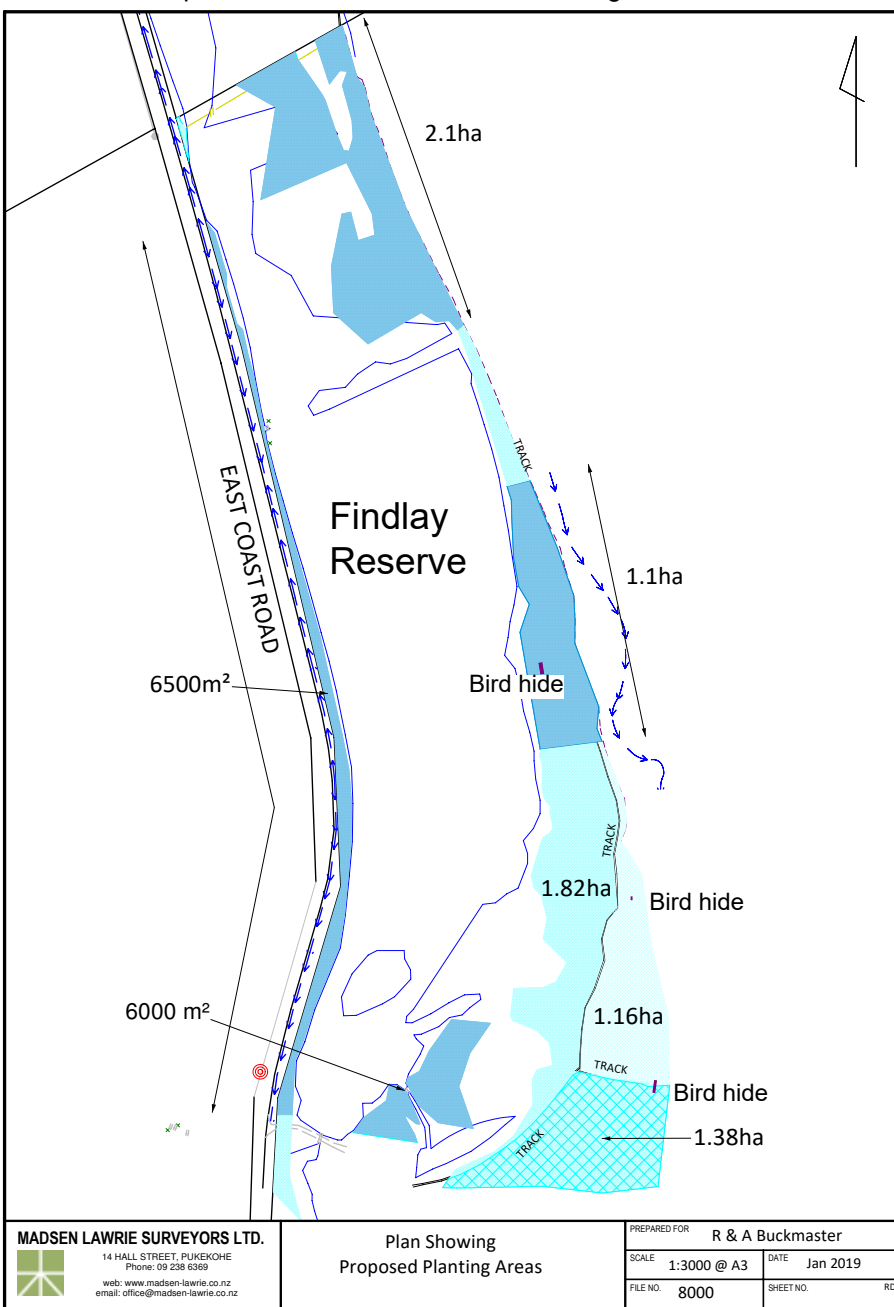
The aim for 2020 is to plant on a much larger scale, dependent on the funding we can source and the plants we can produce for ourselves. Again, our community of volunteers will be needed, this time over more than a single morning and at a planting rate of 10,000 plants/ha.

The Findlay Reserve is the pivot connecting several large-scale ecological restorations. Living Water is funding the development of a wildlife corridor which connects the Hunua range to the Reserve. Across East Coast Road the development of Tiaki Repo ki Pūkoro-koro wetland is close to lift off. The Western Firth Catchment Group is working on improving water quality in several coastal catchments to the potential benefit of the Firth ecology. Further to our north the Taramaire Reserve is also being revegetated.

Each time one restoration connects with another the impact is more than additive. While none of these things will happen overnight the pay-off will be considerable, and PMNT will have played its part connecting these diverse initiatives. Our journey to the hides will become as exciting as our arrival!



Remnants: (above) Lichen infested ribbonwood growing on the very edge of salt marsh, dominated by glasswort (*Sarcocornia quinqueflora*); (below) David Lawrie's plan indicates the size of the challenge.





PATHFINDERS: Some of New Zealand's more impressive navigators (clockwise from top left): Tuna Heke (Longfin Eel); Pīpīwharau (Shining Cuckoo); Tawaki (Fiordland Crested Penguin); Titi (Sooty Shearwater); and Kūaka (Bar-tailed Godwit). All can find their way to a known destination over distances of more than 2000 km.

Photos / Gusmonkeyboy, Aviceda, Francesco Veronesi, Marlin Harms, Phil Battley.

Nature's incredible navigators

Nature writer, **Andrew Crowe**, explores some of the mysteries of animal migration and navigation.

Arctic waders are by no means the only long-distance navigators here; New Zealand is home also to many migratory seabirds – including albatrosses, petrels, shearwaters and penguins – also hump-back whales, two cuckoos, and two species of eel. All of these creatures possess an extraordinary ability to find their way for thousands of kilometres well beyond their visual horizon. All are thus capable not only of maintaining orientation (compass bearing) but also of establishing position in relation to a known destination, whether it lie beyond or beneath the sea. This ability is particularly intriguing to humans, for although some of their methods for doing so are biologically available to us, several are not.

The primary wayfinding tool for most creatures appears to be the 'sun compass': orientating by the sun's daily movement across the sky in relation to a creature's 'internal clock'. The standard test to demonstrate this involves so-called clock-shift experiments, in which a homing pigeon, for example, is kept in a closed room under artificial daylight shifted out of sync

from natural daylight by six hours for at least five days to reset its internal clock. When the test bird is released to find home, it consistently sets off in the wrong direction. Similar experiments have been repeated on ducks, crows and a number of migratory birds. Many creatures are able to employ the same technique even when the sun is obscured by cloud, due to an ability to perceive also the direction of polarisation of the light.

After sundown, a new set of skills is clearly required. African dung beetles, for example, in an effort to maintain a direct line of escape from fierce competition at the dung pile as they roll their balls of dung away to stockpile elsewhere as a future food supply, let themselves be guided by the moon. This was the recent finding of an international team of researchers who had set up polarizing filters to shift the moonbeams. To learn what happens when the moon goes below the horizon, they then brought the dung beetles into a planetarium, where it was discovered that they could also steer by the stars. To ascertain this, they compared the naviga-

tional abilities of the beetles, both with and without the star field present, and then with the Milky Way alone: here their experiments revealed that the Milky Way provided the key.

It is not the same for all creatures, though, for when indigo buntings – a smallish songbird of North and Central America – were placed in a planetarium, they oriented their migratory urge with respect to the planetarium Pole Star, that is the heavenly point around which the Northern Hemisphere stars rotate.

For subterranean mole rats to find their way, they must turn to a different strategy again, for they are blind. These creatures have been shown to gauge their orientation in relation to the Earth's magnetic field, a discovery made with the aid of a rotatable maze. The mole rats demonstrated an ability to determine the shortest route to a site they had visited earlier, using a biological version of an inbuilt compass, but only when the magnetic orientation of the wheel-shaped maze remained constant. When the wheel was turned, they went the wrong way. This facility seems to



AMAZING POWERS: Creatures that have been shown under experimental conditions to navigate either by the moon and/or the stars, the Earth's magnetic field, or by smell (clockwise from top left): African Dung Beetle, Indigo Bunting, Mole Rat, Manx Shearwater, Wandering Albatross, and Cory's Shearwater.

Photos / Dewet, Dan Pancamo, Bassem18, Richard Crossley, Nomis Simon, Matt Witt.

be common in the animal kingdom, but weak to non-existent in humans.

Many non-human creatures can also sense the local *intensity* and *angle of dip* of this magnetic field, enabling them to ascertain *position*, loosely analogous to a kind of GPS. A reliance on such subtle characteristics of the global magnetic field has been demonstrated in sea turtles, spiny lobsters, salmon, red-spotted newts, homing pigeons and many other birds, by observing what happens to their sense of orientation when they are exposed to an artificial magnetic field characteristic of a different region of the globe.

It is clear from all this that many animals have a compass sense and can tell where they are, but a question remains: where is their map? How can they know the whereabouts of their destination? For, if a homing pigeon, a migrating landbird or seabird is transferred to an unfamiliar location, many still know which way to fly home.

When a Manx shearwater from the UK was released in Boston, it flew more or less directly across the Atlantic to its burrow in Skokholm, off the coast of south west Pembrokeshire in Wales, some 5150 km away. This ability is intriguing enough, but for creatures as diverse as juvenile salmon, monarch butterflies and albatrosses this

mental map clearly involves some form of genetic imprinting, graphic evidence that a collective memory can even be inherited: providing a map that can be passed down through the genes.

This map is based on more than just the Earth's magnetic field, though. Landmarks can also play a role, as can smell – at least among ants and homing pigeons, and probably also petrels and albatrosses. Indeed, wandering albatrosses, fitted with high-precision GPS and stomach temperature transmitters to monitor their feeding habits, demonstrate that they may be able to detect fishy odours downwind at distances in excess of 20 km. Cory's shearwaters have shown that they are able to navigate over vast stretches of ocean to return to known destinations with the help of odours too, probably from chemicals such as dimethyl sulphide (DMS) that is being emitted in large quantities from regions of concentrated phytoplankton.

Sound plays a part too. Bats, cave swiftlets, toothed dolphins, whales and humans have all demonstrated an ability to navigate between obstacles in the dark by attending to echoes from clicks that they make. Indeed, from brain scans of blind people we know that areas of the brain normally used for vision can adapt to create non-visual imagery, or spatial

maps. Pigeons can detect infrasound (typically at frequencies below 20Hz, inaudible to humans, but used by whales and elephants for long-distance communication), suggesting that birds may navigate with reference to the sounds of such phenomenon as waves on a shore, wind, and bird calls.

Indeed, migrating passerines and waders have been observed (by radar and from helicopters) to follow topographic features, such as valleys, passes and mountain ranges, even in extremely poor visibility and at night. This facility is thought to derive from distinctive low-frequency sounds – a kind of sound signature – associated with these features, mostly in response to ambient winds. This conclusion is supported by experiments with homing pigeons, which reveal that their navigational abilities diminish wherever a major 'sound shadow' exists, eg from topographical obstructions or disruptive air currents. Tornadoes, tsunamis, volcanoes, avalanches and earthquakes all generate infrasonic effects and these are thought to serve as a kind of early warning to certain animals living thousands of kilometres away. In much the same way, a low-frequency hum (microseism) generated by the interaction of overlapping swells far out to sea, produces a faint

earth tremor that can be picked up as a background noise (of around 200mHz or 12 cycles/min) in all seismic recordings. These slow waves of sound are known as microbaroms or 'the voice of the sea', and researchers have proposed that subtle variations in these may contribute to the ability of birds to locate themselves on a virtual map. (see *PMNews* 110)

It is unlikely that we will ever grasp all the intricacies of how animals navigate, but from what is already known, we can be sure that a mix of techniques is involved, and that the primary methods in use at any one time vary according to the species and the conditions under which they are attempting to find their way.

The same is true of humans. On land, most of us rely almost exclusively on sight to steer by landmarks. And mariners, prior to the invention of navigational instruments, paid close attention to the sun, stars and smell to 'see' over the horizon, monitored wind direction, cloud shape and colour, wave patterns and the prevalence of flotsam, fish, whales and birds.


Traditional Pacific wayfinders excelled in this art. Just as many peoples have used pet dogs – with their superior sense of hearing and smell – to help them hunt, herd and guard, so too pet frigatebirds were carried aboard Pacific sailing canoes to help with landfinding. When released, the birds fly off in the direction of land, or return after some time to the canoe, due to a reluctance to get their feathers wet.

Other species traditionally carried for the same purpose include rails, plovers, red-tailed tropicbirds, herons and sooty terns.

But, to be useful, birds did not necessarily need to be kept on board. Assistance with landfinding was provided also by the daily foraging flights of brown boobies, fairy terns, noddies and gulls, all of which proved sufficiently predictable that their outbound flights in the morning and inbound flight-paths at dusk could be used to help locate the of the bird's home base.

Migrating birds were also traditionally employed, in particular to indicate the presence of unknown lands still further afield. Confirmation of this is found in traditional Polynesian poetry.

Here, the most conspicuous candidates would be migrating waders and seabirds, the most spectacular example being sooty shearwaters, when some 20 million of them are heading back from the North Pacific to their New Zealand nesting sites in spring.

As Hawaiian master navigator Nainoa Thompson points out, 'Everything you need to navigate is in nature. The question is, can you see it?' 



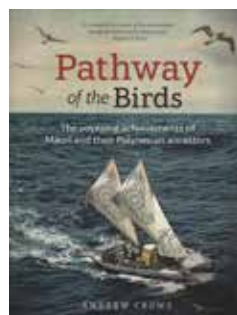
BOOK REVIEW

How Polynesians learned to follow the pathway of the birds

Keith Woodley reviews a remarkable new book about how the Polynesians conquered the Pacific centuries before the arrival of Europeans and the part migratory birds played in their exploits.

In 1986, on the Hawaiian island of Kaua'i, Andrew Crowe learnt that the local 'ie'ie' vine corresponds closely to the 'kiekie' vine of New Zealand. 'In other aspects too, the cultures of these distant islands are extraordinarily similar. This is despite the 6800 km of ocean that lies between them.' Thus began the author's own long journey of exploration that has culminated in this splendid book. For it is a project of many years gestation, in between work on other volumes with which many customers of the Shorebird Centre bookshop will be familiar, as well as a biography of the Dalai Lama.

Towards the end of the 15th century Columbus crossed the Atlantic, and Vasco da Gama reached India, largely by hugging the coast of Africa before venturing across the Indian Ocean. This unleashed a wave of exploratory voyages from Europe that eventually encompassed much of the earth's oceans. Of particular significance to this part of the world were the voyages of Tasman and Cook. But long before any of this,



Polynesian navigators had found and settled almost every archipelago strung over 28 million square km of the Pacific.

Learning about these epic European voyages of exploration at school, I do not recall hearing anything about Polynesian explorers, apart from the arrival of

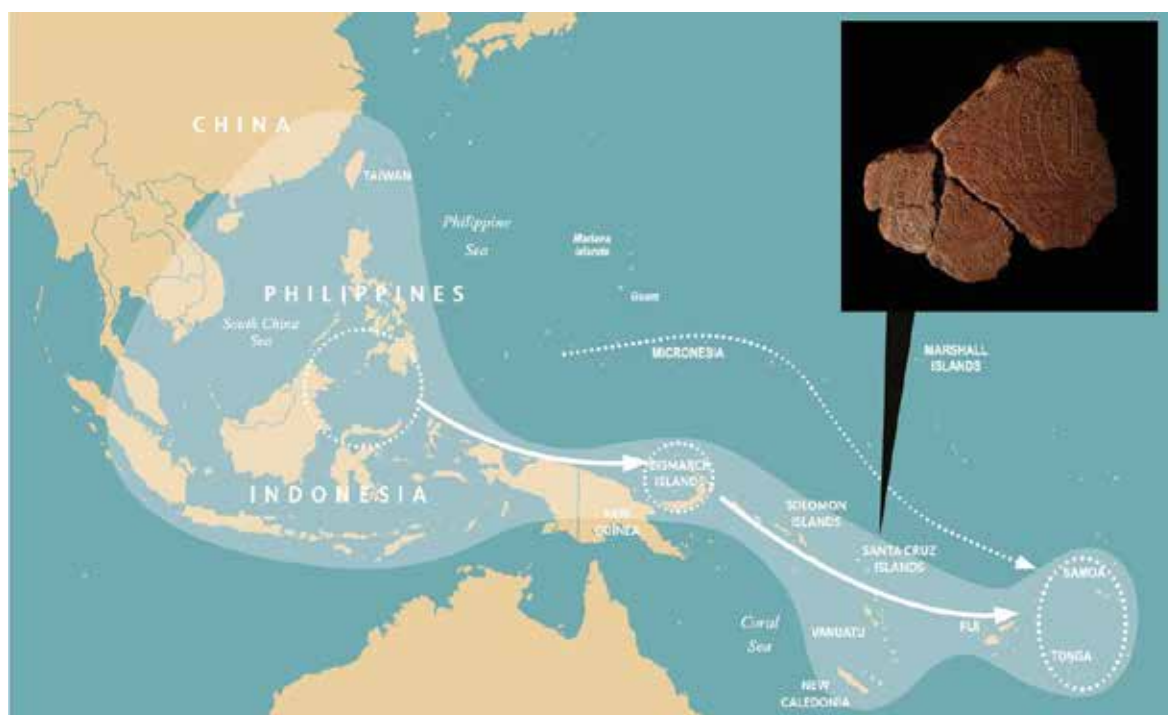
Maori in a series of canoes. Even then, it seemed to be largely accepted that these arrivals were essentially 'accidents' - un-navigated one-way voyages of people who stumbled upon islands (such as New Zealand) by chance. Another view published as recently as 2014 held that Polynesian colonisation resulted from people escaping from 'internal conflict or self-induced collapse of resources.' Effectively these were voyages into exile.

This book presents a compendium of evidence to the contrary. These were deliberate voyages up wind as well as down wind, in small sea-going canoes equipped and provisioned for long journeys. Archaeological evidence of conflict and shortage of resources do not show up until around 1450, by which

RULERS OF THE PACIFIC:

(at left) Te Aurere, a modern Polynesian-style craft sailing off New Zealand; (at right) the path taken by the Polynesians from Asia out into the Pacific.

Pictures / Candice Paewai; Andrew Crowe and Alice Bell, *Pathway of the Birds*



time the whereabouts of inhabitable islands were already known and settled. Crowe suggests a common tendency – even among the ‘experts’ – ‘to conflate the exploratory phase of Polynesian settlement with voyages of exile may stem more from the reluctance of a dominant culture to attribute agency to indigenous peoples. The successful establishment of any *initial* settlement is far more likely to have involved careful planning, instigated by a cooperative parent community with surplus resources.’

At least one European was less susceptible to being so dismissive of Polynesians. After nine years of Pacific exploration, the astute and prescient James Cook arrived in Hawaii. There he found the largest archipelago in all of tropical Polynesia. It was here that he also came to realise the extent of Polynesian expansion: that at that time they inhabited a territory greater than was occupied by any other race on Earth. ‘How shall we account for this nation spreading itself so far over this vast ocean?’ he wrote. ‘We find it from New Zealand to the South, to these islands to the North, and from Easter Island to the (New) Hebrides [Vanuatu].’ A master mariner himself, Cook recognised the true extent of this feat of trans Pacific travel.

Crowe suggests a more credible driving force behind the pulses of Pacific exploration was *opportunity* – ‘a healthy level of cooperation, advances

in sailing technology and navigational expertise, episodes of favourable winds, and experience gained over many generations that there might be more islands yet to be found.’

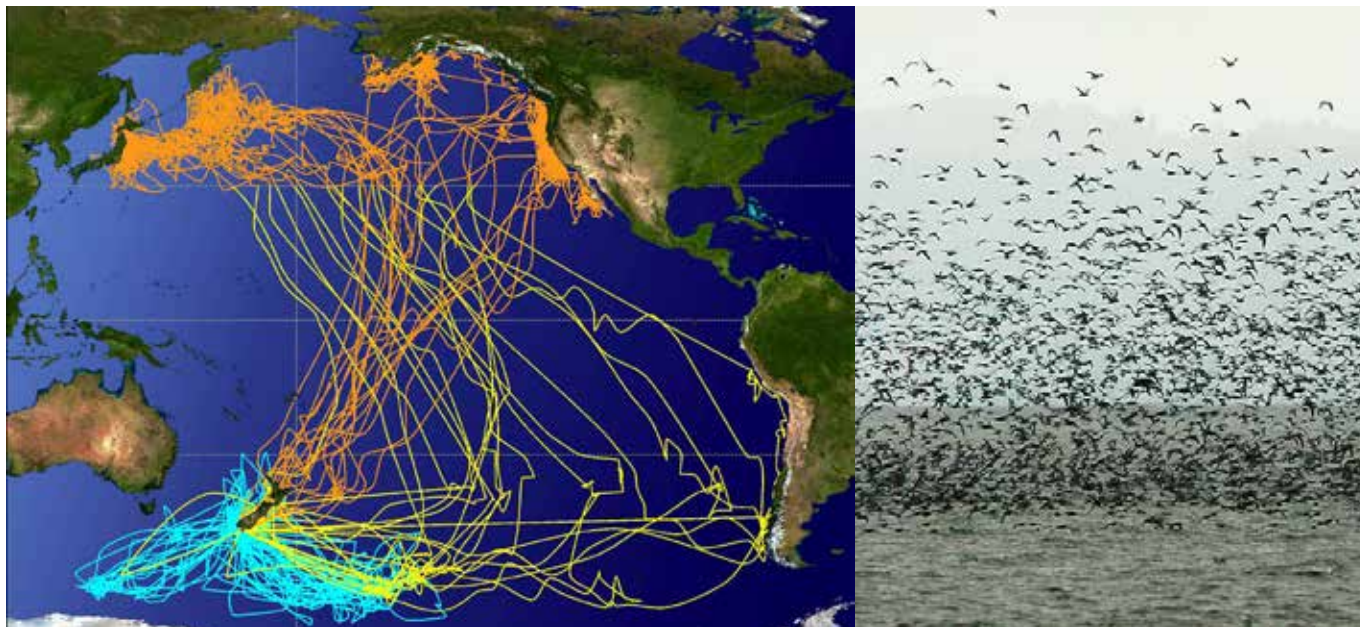
Anyone familiar with Crowe’s work will recognise features of this book. A diverse collection of information laid out in easy accessible manner, all informing a wider theme. Beginning on Easter Island successive chapters take the reader westward through Polynesia, from the Society Islands (French Polynesia) to the Cooks and north to Hawaii and south to the Kermadecs and beyond. Each examines aspects of culture, linguistics, and biodiversity, drawing out common links or differences with other islands. There are copious illustrations and side-bars in an attractive layout. Small globes used to indicate distribution of certain words are a highly effective feature. From both historical and contemporary distribution of items such as tools, plants, invertebrates and animals, and using carbon dating and genetic analysis, a multitude of researchers have contributed to compelling narratives.

By the time Europeans reached Hawaii – kumara was already well established despite its source (Ecuador) being 8500 km away to the east. This seemed to support the Thor Heyerdahl view that the Pacific was settled from the east. The only problem is that virtually all other evidence supports movement from the west. Of the 47 crop species in

Society Islands at the time of European contact – all *except* kumara originated in the Western Pacific and South East Asia. DNA testing of field crickets show they are native to the New Guinea/Australia region. Yet, likely travelling aboard canoes as eggs – they reached Vanuatu, Fiji, Samoa, the Southern Cooks, Society Islands, Marquesas and Hawaiian islands against the prevailing winds, before the arrival of Europeans and in a sequence that closely mirrors the spread of Polynesians.

The field of linguistics offers considerable evidence of contact between particular regions. Earthworms are known on Nuku Hiva as *noke* a term shared only with eastern dialects of Maori, including the South Island. There are links between the Marquesas and South Island Maori evident in other words too – suggesting direct contact between the two regions. Further evidence reveals contact between Bora Bora, the Marquesas, Tuamotus, Hawaii, Rotuma, Southern Cooks and New Zealand – all of which share numerous place names with this country. The highest peak in Hawaii – Mauna Kea – is higher than Aoraki/Mt Cook. The Hawaiian term for snow *haukea* is shared only with New Zealand. Lightning is known to Maori as *uira* – a widespread Polynesian term, but also as *kanapu* – a name shared only with Tokelau and Hawaii.

So how did these early navigators do



PATHFINDERS: The pathways followed by New Zealand Sooty Shearwater around the Pacific.

Pictures / Shaffer et al 2006, Tom Grey, from *Pathway of the Birds*

it, how did they find their way? There is much in this book to answer those questions. Stars were clearly important as were ocean currents and the location of certain island chains. The Tuamotu archipelago for instance, is a chain of 78 atolls and raised coral reefs scattered over a region 500 km wide and 1600 km long. It is in fact like a huge net for explorers, which explains why it was found by virtually every one – from the early Spanish and Portuguese to Cook and Heyerdahl. Its impact on ocean currents is another important navigation tool. The prevailing south-westerly swells are moderated by the archipelago, so they are undetected when approaching from the north east. It is only when the traveller reaches the western edge of the chain that the swells are once more evident.

Similarly the position of the Kermadecs north of New Zealand may have aided navigators in this region. Flotsam around its coasts, such as kowhai seeds and kauri logs, both of which were not found on the islands were a clear indication of land to the south. Seasonal movements of seabirds was another indicator. The colossal numbers of seabirds returning from the North Pacific in September and October to breed around New Zealand offered an effective navigation beacon. *Oi* and *titi* (shearwater and petrel) are the same in Maori and East Polynesia.

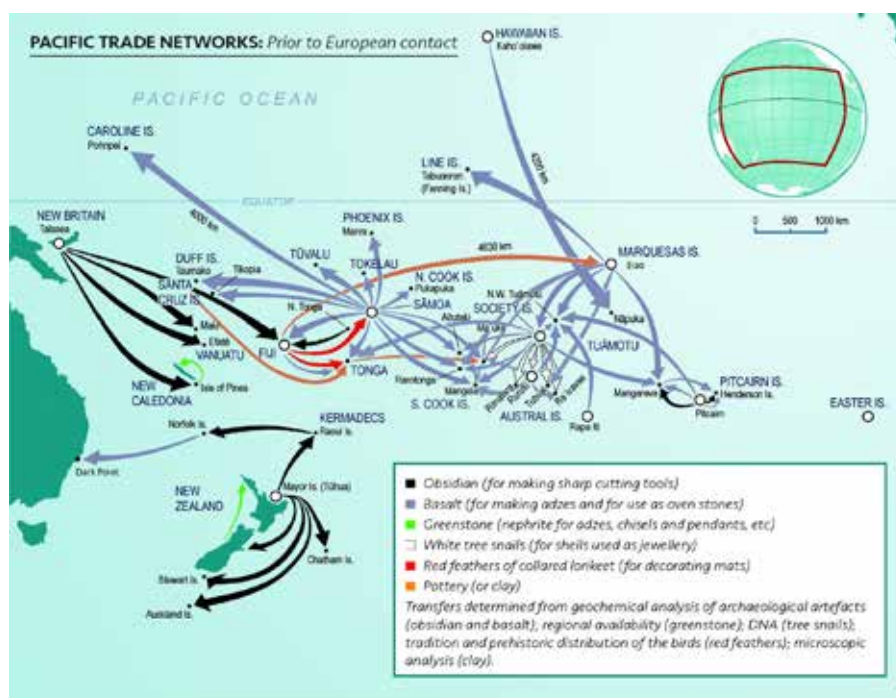
East Polynesians had every reason to know not only the existence of land in that direction but also when the most favourable winds blow to reach it. 'From

this alone - but also from the quantity of wood drifting north in winter it would have been equally obvious that this was a land worth finding. In this sense Polynesian discovery of the last major inhabitable land mass on earth, would seem almost inevitable.' Nor were they all one-way voyages. The successful establishment of kumara in New Zealand could only have happened through repeat introductions. Which means continued contact with Polynesia.

"In presenting the picture that emerges from this," writes Crowe, "my

focus is primarily on the journey, or enquiry, rather than on promoting any particular theory. I want to convey some idea of the skills, innovation, resourcefulness and courage of the people that drove this extraordinary feat of maritime exploration.' On these terms the book is absolutely a success.

Pathway of the Birds: The Voyaging Achievements of Māori and their Polynesian Ancestors, by Andrew Crowe (Bateman 2018; University of Hawai'i Press 2018). is on sale at the Shorebird Centre bookshop for \$49.90.



BUSY HIGHWAY: The evidence shows that Polynesians traded extensively across the Pacific long before European sailing ships appeared on the ocean.

Picture / Andrew Crowe, Jola Martysz, from *Pathway of the Birds*.



Annual Report From the Chair

PMNT fortunate to have a team of hugely talented volunteers

In his first annual report as chair, William Perry pays tribute to the contributions of his Council members and the organisation's many other volunteer workers.

The Year of the Wrybill has certainly started well with the event at the Shorebird Centre on 10 March. This was billed as the Autumn Migration Day, referring of course to the brown birds that breed in the Arctic and spend the southern summer in Aotearoa New Zealand, migrating thousands of kilometres twice a year between breeding and feeding grounds.

On this occasion we focused on a migratory species that never leaves this country, breeding exclusively in the braided rivers of Te Wai Pounamu (South Island) and feeding outside the breeding season largely on the tidal mudflats of Te Ika a Māui (North Island). What an entertaining day it was too! Music, poetry, birding, conservation and science came together in a celebration of this special bird, Ngutuparore/Wrybill – *Anarhynchus frontalis* – our bird of the year.

Back in February we had a special event to mark the special activity surrounding the Kuriri, Pacific Golden Plover, *Pluvialis fulva*. Wally Johnson, leader of a small group of visiting American scientists, gave us a fascinating presentation on Golden Plover with emphasis on the biology of the Pacific species.

Following an intensive campaign, three birds were caught and given some high-tech luggage to carry with them on migration. At the time of writing, we are starting to receive early information from the satellite transmitters.

This project is a collaborative effort, but it would not even have started without the energy and commitment of our enthusiastic editor. Jim Eagles has been inspired by the bird, asked the questions, set up the process, sought the funding (with help from Alister Harlow, Funding Manager) and inspired the rest of us to participate in the PGP project.

This energetic and committed service is typical of the people who are the Council of Pūkorokoro Miranda Naturalists' Trust and we are fortunate to have such talented individuals on our team. As with the people who volunteer at the Shorebird Centre to allow paid staff to take time off, the PMNT Council members are unpaid and devote many hours of their own time to the governance of our organisation.

David Lawrie was a founder member of the MNT in 1975, joined the Council in 1976 and has served on it ever since, including 18 years as Treasurer and 11 years as Chair, and continues to contribute in many ways, including as delegate to the Flyway Partnership.

Adrian Riegen, the now-famous chip-py from West Auckland, has served since 1985 and continues to lead the Wader Study Group and survey activity in the Flyway.

Trish Wells, our most recent recruit to Council, hit the ground running as Secretary after the 2018 AGM and anybody would think that she had been doing the job for years.

Kevin Vaughan has demonstrated the value of a solid background in financial management since he became Treasurer in 2017. Kevin has also taken steps to share the job and is in the process of training Ann Buckmaster as a deputy.

Ann and Ray Buckmaster joined Council in 2013 and they have been perhaps the busiest members of Council ever since.

Trudy Lane also joined us in 2013; she helps to keep down the average age, offers excellent graphic design skills, local knowledge, community perspective and she is a former Shore Guide.

Bruce Postill became a member of Council in 2014 but he had already been a regular at our meetings for several years representing the Department of Conservation and he continues to provide institutional knowledge, advice and activity.

Estella Lee has been with us since 2007 and continues to provide valuable insight into conservation issues from the Chinese perspective and help with translations from English to Mandarin and vice versa.

Wendy Hare joined us in 2006 and frequently apologises for absence from meetings because she is usually working on a ship in Antarctica or Bay of Biscay or some other exotic location, but we continue to value her local and international knowledge from afar and particularly when she does attend.

Finally, my predecessor as Chairperson, Gillian Vaughan, has remained with us on Council, much to my relief. Gillian is not always able to attend meetings now that her working life has become much busier, but we are all pleased that she remains an active member of a team that is dedicated to keeping the birds coming.

Ngā mihi

William Perry
Chairperson

Pūkorokoro Miranda Naturalists' Trust

Agenda for the 44th Annual General Meeting of the Pūkorokoro Miranda Naturalists' Trust

10am Sunday 26 May 2019

Apologies for Absence

Minutes of the AGM held on 20.05.2018

Matters arising from the minutes

Chairperson's Report

Treasurer's Report

Election of Officers (Treasurer, Secretary, Auditor, 10 Council Members)

Subscriptions for the year ending 31/12/2020:

Proposal from the PMNT Council:

	Current	Proposed
Life, over 50	\$850	\$1000 and over 65 years
Life, under 50	\$1500	\$2500 and under 65 years
Overseas	\$65	\$75
Family	\$60	No change
Individual	\$60	No change

General Business

MINUTES OF THE 43rd ANNUAL GENERAL MEETING OF THE PUKOROKORO MIRANDA NATURALISTS' TRUST HELD AT THE SHOREBIRD CENTRE ON SUNDAY 20 MAY 2018 FROM 11am.

The AGM followed a talk by Bruce McKinlay on his work as New Zealand representative to the East Asian–Australasian Flyway Partnership.

PRESENT: The Chairperson (Gillian Vaughan), Secretary (William Perry), Treasurer (Kevin Vaughan) and about 50 others.

APOLOGIES: John Stewart, Kay Milton, Ken Wedgwood, Anne Duncan, Spencer Drinkwater, Detlef Davies, Carol Davies, Sharon Kast, Mike Hazel, Martin Sanders, Ted Owen, Ian Higgins, Cathy Catto, Olga Brochner, Kevin Barker, Bruce Postill, Sue Reid, Ashley Reid, Trish Wells, Estella Lee, Gwenda Pulham. Apologies Accepted (Betty Seddon/David Lawrie).

MINUTES: The minutes of the 42nd AGM held on 14 May 2017 had been published in *Pukorokoro Miranda News*, which was circulated to the membership. Proposed (Adrian Riegen/John Rowe) that the minutes were a correct record. **CARRIED.**

MATTERS ARISING FROM THE MINUTES: Stuart Chambers reiterated his wish for a 'geriatric car park' at the Stilt Pools. Stuart's idea is for a safe car park beside the road from which the birds on the Stilt Pools may be observed. Stuart believes that construction of the cycle trail through that section of the road could include such a car park.

CHAIRPERSON'S REPORT: Gillian's report was published in *PM News* and she spoke to some of the issues mentioned:

- Gillian had announced that she is stepping down as Chairperson after eight years following a promotion in her workplace.

She thanked Keith Woodley for his continuing diligence as Shorebird Centre Manager and purveyor of puns. Gillian also noted that staffing at the Shorebird Centre had been stable for the last 9 months with Chelsea Ralls settling well into the role of Shorebird Centre Assistant and Trudy Lane having just completed a season as Shore Guide.

- Visitor numbers were up in 2017 (from 8,000 to 11,00) but were expected to be lower again in 2018 because of the forced closure of the Centre following the storm on 5 January. Membership increased slightly from 610 to 629 members.

- Land ownership and management have proved to be the biggest challenges recently. PMNT is cooperating with the Department of Conservation (DOC) on plans to introduce control of *Carex divisa* on the Taramaire block and to do some planting with a view to turning it into wetland habitat. On the Findlay Reserve drainage was thought to have been sorted but the January storm changed the hydrology. We now seek resource consent for a second drainage channel. Living Water (DOC/Fonterra) has agreed to fund the repairs to the track following the January storm damage. PMNT has been in talks with Te Whangai Trust, Living Water and local iwi regarding a Development Trust for a Living Memorial. We are not yet sure how this will work.

- Gillian acknowledged that PMNT accepting funding from Living Water has been controversial and she confirmed that PMNT Council considered carefully before doing so. One of the projects that has been funded by Living Water is the visit to DPRK (North Korea). It would have been difficult to obtain such funding from other sources.

- PMNT held five courses through the year including the return of the Photography Course, two art courses led by Sandra

Morris, the January Field Course and the Wader Identification Course.

Flyway issues had been covered extensively in the prior talk by Bruce McKinlay but Gillian also acknowledged the contribution to Flyway activity from David Lawrie with much hard work behind the scenes.

- The Bird Table Project in the Yellow Sea went ahead. This was an attempt to use supplementary feeding to overcome the effects of a cold winter in the Yellow Sea reducing the food available to migrating shorebirds. A quantity of 140 tonnes of shellfish was dropped and quickly discovered by the Great Knot such that it disappeared within two days. This was followed by a second shellfish drop. In response to a question from Bev Woolley, Gillian said that the shellfish came from a deeper water area and not from any inter-tidal area used by the birds. We do not yet know how successful this initiative has been.

Gillian thanked everybody who has supported her through her tenure as Chairperson. She also thanked those who have challenged what we do and those who have offered unsolicited help in the job.

It was moved that the chairperson's report be received (Gillian Vaughan/Peter Thompson). **CARRIED.**

TREASURER'S REPORT: Kevin Vaughan spoke to his summary report, which had been published in *PM News*. Kevin has opted to change the format of reporting the accounts to that of a Tier 3 Charity (operating expenditure less than \$2 million), which is where we belong. This format requires reporting the objectives of the Trust and matching them with activities, achievements, income and expenditure. Activities have included survey work in DPRK and China, Courses, Open Days, Welcoming and informing Visitors, publication of the Magazine.

Income in 2017 was less than in 2016 largely because there had been grants for land purchase in 2016. We have reported an Operating Deficit of \$7,625.56 with no significant change in our cash reserves.

The Auditors' report includes several comments and may be summarized as saying, 'The accounts are OK.' The full set of Financial Reports, including the opinion from the Auditors, is available on the PMNT website.

Kevin expressed special thanks to Keith Woodley (Manager), Chelsea Ralls (Centre Assistant) and Staples Rodway (auditors)

It was moved (Kevin Vaughan/Chris Eagles) that the accounts be approved - **CARRIED.**

Appointment of auditors: Proposed that Staples Rodway be retained as auditors (Kevin Vaughan / Trudy Lane) - **CARRIED.**

MATTERS ARISING FROM TREASURER'S REPORT: Chris Thompson asked a question about the Other Income and Other Expenses and the cost of the Courses. The Other categories cover various bits and pieces that did not fit anywhere else.

It was confirmed that all courses are self-funding.

ELECTION OF OFFICERS:

Secretary – Trish Wells elected unopposed

Treasurer – Kevin Vaughan elected unopposed

There were 12 nominations for Council: David Lawrie, Adrian Riegen, Gillian Vaughan (Immediate Past Chairperson), Wendy Hare, Estella Lee, Trudy Lane, Ray Buckmaster, Ann Buckmaster, Bruce Postill, Jim Eagles, Peter Maddison, William Perry.

Proposed that these 12 candidates be elected. (Chris Eagles/Betty Seddon) - CARRIED.

SUBSCRIPTIONS: PMNT Council had proposed that subscriptions for the year ending 31/12/2019 remain unchanged. This proposal was accidentally not presented to the AGM. Annual Subscriptions will remain as follows:

Individual Member	\$50.00
Family Member	\$60.00
Overseas Member:	\$5.00
Life Member (under 50)	\$1,500.00
Life Member (over 50)	\$850.00

GENERAL BUSINESS:

1. Donations – Stuart Chambers suggested that we request a gold coin donation from visitors (non-members) entering the Shorebird Centre. Keith Woodley responded that there is a mechanism for visitors to make gold coin donations into the Donations Box but that it is currently informal.

2. Living Water – Heather Rogers thanked Gillian and Keith for their hard work on behalf of the Trust. Heather expressed discomfort at the Trust's reliance for funding on Living Water, which involves Fonterra, an organization that contributes largely to the pollution seen in the Hauraki Plains and the Firth of Thames. Gillian responded that we have accepted funding from a number of sources, including Waikato Council and Foundation North for land purchase; from Chisholm Whitney for purchase of mattresses; and other funders for other projects. When it came to funding the trip to DPRK none of our usual sources of funds was willing but Living Water was able to offer funding. We do also apply for funding from the Flyway and from Wetlands International. Keith pointed out that, without Living Water, there would have been a time lag between the funding and the activity. In any event, Living Water is now moving on from this type of funding to concentrate more on farming activities. David Lawrie also noted that the Council considered carefully before applying for funding from Living Water

3. Peter Thompson proposed a vote of thanks to Gillian for her leadership of the Trust over the last 8 years. CARRIED.

4. David Lawrie proposed a vote of thanks to Will Perry for 18 years as Secretary.

5. Betty Seddon proposed a vote of thanks to all the volunteers who spent most of the previous day cleaning up around the Shorebird Centre following the January storm.

6. TV show – Keith reported that the trip to DPRK will be televised on TVNZ 1 on Sunday 27 May starring Adrian Riegen.

7. Stuart Chambers commented that there are many farmers in the Hauraki Plains who are showing the initiative in mitigating dairy run-off and other forms of pollution.

8. Cycle Trail - Tansy Bliss asked about possible impacts of the cycle trail on PMNT and the birds. Keith and Gillian responded that there would be impacts, mostly positive (increase in visitor numbers, increase in awareness of this coastline.) We have done our best to minimize any negative impacts, particularly disturbance to the birds, by keeping the Cycle Trail away from roost sites at Pukorokoro. However, the Kaiaua roost may be affected. Gillian, Keith and Trudy Lane have been working on signage designed to mitigate negative impacts from the Cycle Trail.

9. Infrastructure – Tansy Bliss reported that she had recommended the Shorebird Centre to a group of people for their activity. This group was critical of facilities at the Centre and indicated it would not return. Keith will discuss the detail with Tansy and prepare a list of possible improvements.

The meeting closed at 13.08pm.

Financial report

The accompanying table is a brief summary of the annual accounts for 2018. A full set of the accounts can be found on the PMNT website and copies will be available at the AGM.

Income and expense numbers for 2018 were broadly in line with 2017. Just a little inflation here and there. The notable difference was the increase in donations in response to the "Great Knot food Drop" appeal and the consequent increase in Flyway Expense where the spending on this is recorded. There is an increase in our shop sales margin but this largely an accounting issue as last year we setup an obsolescence provision which depressed the margin for that year. Net result is a deficit of \$34,809 for the year, up on last years deficit of \$7626.

Still have a bit of alignment of records to get the Life Members Reserve right. Otherwise very little change on our balance sheet.

Kevin Vaughan, Treasurer

Income and Expenditure Account

Item	2018
Income	
Shop Sales	77,116
Shop Margin	37,319
Margin%	48.40%
Grants	50,139
Bequests	490
Donations	61,755
Subs	24,936
Accommodation	26,787
Courses	22,342
Interest	6,814
Land Lease	4,800
Other Income	3,938
Total Net Income	239,320
Expenses	
Employment	109,105
Flyway	57,535
Depreciation	17,292
Courses	13,687
Magazine	17,010
Maintenance	14,295
Life Mem Reserve	5,950
Audit	5,560
Insurance	4,759
Cleaning	4,805
Electricity	3,848
Credit Cards / Paypal	3,647
Other	16,636
Total Expenses	274,129
Deficit	-34,809

Balance Sheet

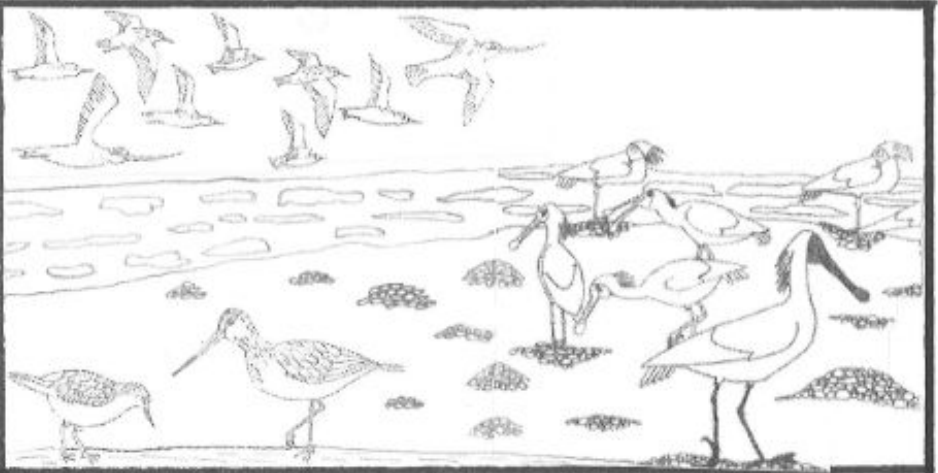
Item	2018
Assets / Liabilities	
Cash / Bank / Term Deposits	258,888
Shop Inventory	35,277
Receivables	246
Property / Plant & Equipment	1,805,778
Payables	-33,457
Donations / Grants Conditional	-41,883
Life Members Reserve	-65,450
Net Assets	1,959,399
Accumulated Surpluses	986,808
Revaluation Reserves	972,591
Total Accumulated Funds	1,959,399

GODWIT TIMES

The Story of Koro Jim and Kuriri Jimmy



My grandad, Koro Jim, likes to watch those animals with feathers and beaks – you know, birds.



One day, while looking at the birds at the Shorebird Centre, he saw godwits, knots and spoonbills with beaks like big black spoons, and then he saw a bird he hadn't seen before.



It was a beautiful bird with gold-spangled feathers. "I wonder what that bird is?" he said to himself.



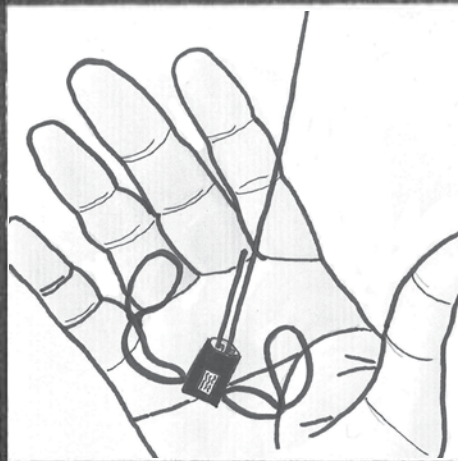
So Koro looked at a bird book until he saw a picture of one with gold spangled feathers. It was a Kuriri.



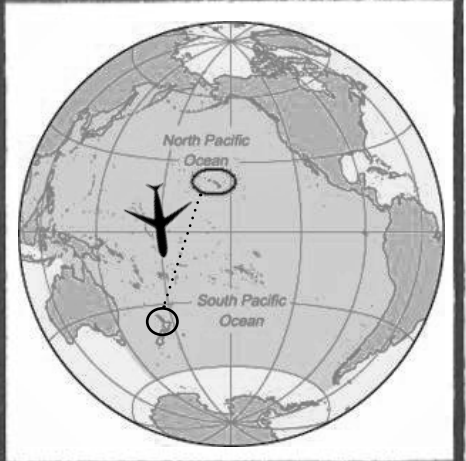
'Where do NZ Kuriri come from?' he asked some local bird experts. 'We don't know,' they answered.



The world expert on Kuriri, Wally Johnson, didn't know either. "It would be good to find out," he said.



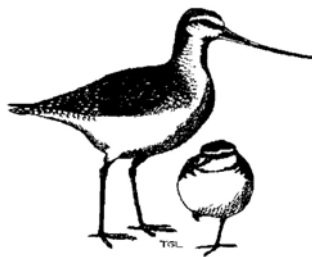
Fundraising expert Alister Harlow helped Koro raise the money for satellite tags to put on Kuriri and track them.



Wally and his team flew from Hawaii to NZ to help catch Kuriri and fit them with tags. *To be continued.*

Colour our Kuriri cartoon in and post to the Shorebird Centre (address on the back cover) or email to educator@shorebirds.org.nz and you could win a book! PDF version available at shorebirds.org.nz/education.

PŪKOROKORO MIRANDA NATURALISTS' TRUST



The Shorebird Centre

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

Manager: Keith Woodley
Centre Assistant: Chelsea Ralls
Educator: Alex Eagles-Tully
educator@shorebirds.org.nz
027 892 2560

Pūkoro-koro Miranda Naturalists' Trust Council

Chair: William Perry
home 09 525 2771
wncperry@outlook.com
Deputy Chair and Banding
Convenor: Adrian Riegen
riegen@xtra.co.nz
09 814 9741
Secretary: Trish Wells
Trishwells1@gmail.com
0272 688 057
Treasurer: Kevin Vaughan
kevinv@clear.net.nz
09 817 9262
Council members: Gillian Vaughan
(Immediate Past Chair), David
Lawrie, Estella Lee, Wendy Hare,
Bruce Postill, Trudy Lane, Ann and
Ray Buckmaster, Jim Eagles.

Magazine

Pūkoro-koro Miranda Naturalists'
Trust publishes Pūkoro-koro Miran-
da News four times a year 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.
Editor: Jim Eagles
jimeagles45@gmail.com
(09) 445 2444 or 021 0231 6033

See the birds

Situated on the Firth of Thames between Kaiaua and the Miranda Hot Pools, the Pūkoro-koro Miranda 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 Miranda high tide is 30 minutes before the Auckland (Waitemata) tide. Drop in to investigate, or come and stay a night or two.

Low cost accommodation

The Shorebird Centre has bunkrooms for hire and two self-contained units: Beds cost \$20 per night for members and \$25 for non-members. Self-contained units are \$70 for members and \$95 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 \$65 for those living overseas. Life memberships are \$1500 for those under 50 and \$850 for those 50 and over. 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 decisionmaking through the annual meeting. You can join at the Centre or by going to our webpage (www.miranda-shorebird.org.nz) and pay a subscription via Paypal, by direct credit or by posting a cheque.

Bequests

Remember the Pūkoro-koro Miranda Naturalists' Trust in your will and assist its vital work for migratory shorebirds. For further information and a copy of our legacy letter contact the Shorebird Centre.

Want to be involved?

Friends of Pūkoro-koro Miranda

This is a volunteer group which helps look after the Shorebird Centre. That can include assisting with the shop, guiding school groups or meeting people down at the hide. Regular days for volunteer training are held. Contact the Centre for details.

Long term Volunteers

Spend four weeks or more on the shoreline at Miranda. If you are interested in staffing the Shorebird Centre, helping with school groups or talking to people on the shellbank for a few weeks contact Keith Woodley to discuss options. You can have free accommodation in one of the bunkrooms and use of a bicycle.

Firth of Thames Census

Run by Birds NZ (OSNZ) and held twice a year, in June and November, the census days are a good chance to get involved with field work and research. Ask at the centre for details.

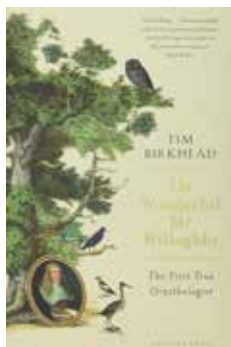
Contribute to the Magazine

If you've got something you've written, a piece of research, a poem or a photo send it in to Pūkoro-koro Miranda News. If you want to discuss your ideas contact Jim Eagles.

Help in the Shorebird Centre Garden

We can always use extra hands in the Miranda Garden, be it a half hours weeding or more ambitious projects. If you do have some spare time please ask at the centre for ideas, adopt a patch or feel free to take up any garden maintenance you can see needs doing.

Fascinating books about nature



The Wonderful Mr Willughby

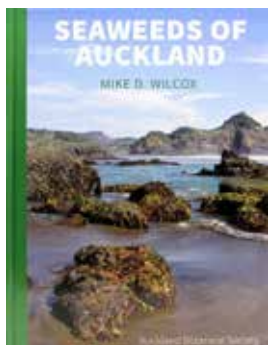
by Tim Birkhead

The fascinating story of the man who invented ornithology

\$39.90

Don't miss our inspirational
shorebird aprons \$39.90
and caps \$29.90

They'll have you cooking like a rock star chef
(without the need for bad language)

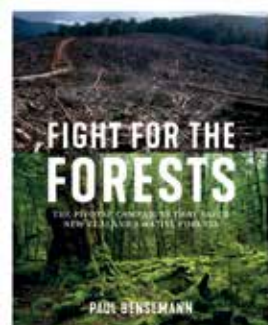


Seaweeds of Auckland

by Mike D Wilcox

A magnificent portrayal of the 400 species of seaweed - ranging from mighty bull kelp to tiny algae - found around Auckland's coasts

\$149.90

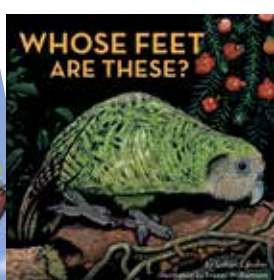


Fight for the Forests

by Paul Bensemann

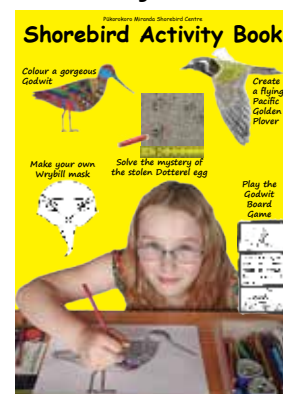
The inspiring story of the campaigns that halted the destruction of our native forests

\$69.90



Check out this children's popular series written by Gillian Candler and illustrated by Fraser Williamson
\$14.90 each

Youngsters will love this
Shorebird Activity Book
produced by our educator
Alex Eagles-Tully
Only \$9.90



The Shorebird Centre is always worth a visit to see the birds, enjoy the displays and chat with Keith or Chelsea. But if you can't find the time to call in just go to our online shop at <https://shop.miranda-shorebird.org.nz/> or ring 09 232 2781 and ask.