Pukorokoro Miranda News
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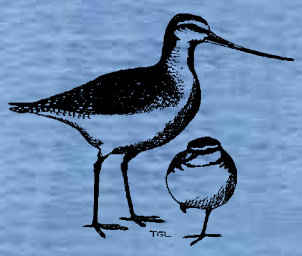
The magic of a flung scarf of Wrybills

Keith Woodley muses on the poetic and biological implications of the amazing aerial dances performed above the shellbank by our unique Wrybills



Gillian Vaughan to step down as Trust chair

Stunning discovery in North Korea

Hauraki Gulf Forum pleads for help

BREAKTHROUGH: Gillian Vaughan tells Chinese Ambassador Wang Lutong about the godwits and knots we share during a visit to the Centre which was one of the key moments of the past eight years. Photo / Jim Eagles

Shorebird Snippets

Chair to step down after eight years

Gillian Vaughan has confirmed that she will definitely be stepping down as chair of PMNT following the Annual General Meeting on May 20.

Gillian initially indicated she would be passing the leadership of the Trust to someone else after being re-elected as chair following the 2016 AGM. But after the 2017 AGM she agreed to stay on for another term or two 'because there is so much going on that it's not a good time for a change'.

However, at last month's Council meeting she announced she would have to stand aside due to having been appointed chief executive officer of Pinnacle Life Insurance where she has been a senior executive for some years.

Council members congratulated her on the appointment and then started to worry about how to fill the void.

Gillian was editor of PM News from 2002 to 2012, putting out 40 issues, and was elected as chair in in 2010, continuing on as editor for another two years until a replacement was found.

Online shopping

The Trust's online shop, which has been out of action for a while due to technical problems, including a recent hacking incident, is now back in action.

Shorebird Calendar

PMNT has decided to publish its first ever Shorebird Calendar for 2019 and it's now available from the Centre.

Put together by Jim Eagles, it features notes by Keith Woodley on what the birds will be doing each month, stunning photos by members and friends, daily tide information, the dates of PMNT events for 2019 and a big calendar block with plenty of room for writing notes.

The 2019 Shorebird Calendar is selling for $17.90 (plus postage if required). See the advertisement on the back page for further details.

Security upgrade

The spate of thefts from vehicles parked at the Robert Findlay Wildlife Reserve has halted for the time being.

Manager Keith Woodley says no incidents have been reported since October. 'The installation of security cameras at the car park together with our policy of encouraging people to close the gate with each entry appears to have been effective.'

But, he added, anyone using the car park should remain vigilant and avoid leaving valuables in their vehicles because the thieves could return.

Tricky Plovers

Plans to have world authority on Pacific Golden Plover, Wally Johnson of Montana University, visit Pukorokoro Miranda next year to track where our birds come from have had to be postponed.

The aim of his visit was to catch about 10 birds and fit them with GPS Pinpoints in order to find out whether their nesting grounds are in Alaska or Siberia. However, as banding committee chair Adrian Riegen pointed out, 'First we've got to show we can catch

Cover: Photo of a flung scarf of Wrybills at Pukorokoro Miranda by Adrian Riegen.

Hunting for Pacific Golden Plover

them.' And it was clear that was going to be difficult because, unlike in other Pacific Islands where Pacific Golden Plovers hang out in parks and gardens, in New Zealand they are mostly found way out on the mudflats.

Adrian's plan was to erect mist nets on the edge of the mudflats near the old Limeworks, where the plovers are usually seen roosting at night, but unfortunately they declined to cooperate.

The first attempt caught nothing because the tides were affected by the weather and didn't push the birds off the mudflats to their night roost. The second caught a godwit, a knot and nine Wrybills, all of which were banded (see photos at right). But the plovers, despite having been at the Limeworks the night before, decided to roost somewhere else.

As a result Adrian decided the GPS pinpoint project had better be postponed to 2020 with the 2019 season being devoted to learning how to catch the birds.

Wally is agreeable to the postponement and reported similar problems in Moorea. 'The weather has been ideal for mist-netting, but not the tides. We're having lows in the early morning such that birds can remain on nearby mudflats instead of returning to an adjacent golf course where we have nets! After four early morning attempts, we've captured only five. Our goal was 10, but may have to settle for a smaller sample.'

WHERE DID THEY GO? (top) mist nets at the Pacific Golden Plover night roost at the Limeworks; (bottom left) Adrian Riegen checks a Wrybill with his head torch; (right) banding a Wrybill. Photos / Jim Eagles

New brochure

Council member Trudy Lane has designed an attractive new brochure (at left) featuring information about the Trust, the birds that visit Pukorokoro Miranda, the Centre and the services it provides, as well as a few details on what is available in the wider area. 10,000 copies have been printed.

Shorebird Conference

This year's Australasian Shorebird Conference will be held on the weekend of 27-28 October at the University of Tasmania in Hobart. Details of registration, accommodation, outings, themes, etc will be posted on the Australasian Wader Studies Group web page at www.awsg.org.au.

What's on at the Shorebird Centre

20 May, Annual General Meeting
11am Guest speaker Bruce McKinlay outlines his work as New Zealand representative to the East Asian-Australasian Flyway Partnership. High tide at 10.45am.

25-27 May, Drawing Techniques Course with Sandra Morris
Details from the Centre.

24 June, Firth of Thames Wader Census
High tide 10.16am. Contact Tony Habraken 09 238 5284) for details.

18 August, Winter Potluck Dinner and Working bee
10am Working bee. 12.20pm High tide, 6pm Potluck dinner followed by birding trivia quiz.

4-6 September, NZ Dotterel management course.
Details from the Centre.

7-9 September, Photography course with Neil Fitzgerald
Details from the Centre.

Drowning in a sea of tide tables

JoJo Doyle explains how the summer team at the Shorebird Centre worked out which tide tables give the most accurate picture of what happens at the Findlay Reserve.

THE TIDE TEAM: (from left) JoJo Doyle, Dai Stacey, Trudy Lane and Emilia Lai. Absent: Chelsea Ralls. Photo / Keith Woodley

Most people know that viewing shorebirds at Pukorokoro Miranda revolves around the tides (the best viewing is reckoned to be 2-3 hours either side of high tide). But confusingly there are several different tide tables to choose from. So which one should you use?

That vital birdwatching question was answered this summer when an enthusiastic team joins Keith Woodley at the Shorebird Centre.

There is Trudy Lane, with her close ties to the Findlay Reserve, starting work as the fulltime summer shore guide; Chelsea Ralls, newly employed as the Centre assistant and eager to learn; Emilia Lai from Taiwan, fresh from 15 months as assistant warden at Broome Bird Observatory, here as a volunteer shore guide; Dai Stacey, from Wales, back again as another volunteer guide; and JoJo Doyle, lover of birds from Vermont in the USA, keen to help at the hides this season.

The team works together amazingly well, helping each other, exchanging ideas, always on the same page . . . until one day when we turn our attention to the high tides posted on chalkboards at the Centre and the Godwit Hide.

After a few days I realise I'm using different tide data to what Trudy is posting at the hide. Baffled, I say to her, 'I show high tide as 1050 and 3.7m and you've got 1032 and 3.1m, What chart do you use?' 'Tbone,' Trudy answers.

'Tbone! What's that?' I ask, thinking of a T-bone steak. 'It's what Keith uses in the Centre," she replies.

Hmmm. Odd. I've hung around the Centre long enough but I've never heard of that. 'I use the Met Service tides for Thames,' I tell her. 'I'm pretty sure that is what Wendi (last year's shoreguide) used because we were always talking the same times and metres.'

Trudy explains that Tbone is a US-based tide prediction website which, among other things, gives high tides for Rocky Pt. 'Rocky Point?' I ask. 'Where's that?'

So, amid much confusion over these two tide prediction websites which give high tides differing by 20 minutes and 0.6m we start an investigation to find the right one to use.

We quickly discover that Rocky Pt is a New Zealand Tide Station just north of Thames (see map at left). We also find that as well as Tbone and the Met Service there are tide predictions from the National Institute for Water and Atmospheric Research and they use Rocky Pt.

By now our discussion about tides has spread to include everyone at the Centre and we all want to know which of these predictions is the most accurate. So we start comparing them with the reality we see at the hides.

It's easy to record high tide. Just stare at the mudflats. Pick a point and watch to see if it gets covered with water then recedes. With practice we find the right indicator spots to watch and when the water starts to recede we record the high tide.

Trudy's talent in technology, Emilia's acute observations, JoJo's insatiable curiosity and Chelsea's analytical skills jointly create a spreadsheet titled *Tide Estimation Review Chart*. Trudy sets it up so everyone can access the information, add data and watch progress. Here is our first recording:

	Dec 14	Dec 15
Tbone	1658 3.09m	1750 306
NIWA	1714 3.6m	1806 3.4m
Real	1725	1817

You can see that Tbone predicts high tide 16 minutes earlier than NIWA and 27 minutes earlier than the real tide. NIWA's prediction is 11 minutes earlier than the real tide but clearly the closest to the truth. It's the same next day. We carry on recording throughout December and NIWA continues to be the closest.

Well, that's sorted. Simple, right? Wrong! Come the Pukorokoro Miranda Field Course Trudy has a conversation with organiser Brigid Glass who says she and Adrian Riegen use the tables provided by Land Information New Zealand. So we add LINZ to our spreadsheet:

	Dec 23	Dec 24
Tbone	1112 3.12m	1152 3.09
NIWA	1128 3.6m	1209 3.6m
LINZ	1132 3.5m	1212 3.5m
Real	1155	1222

As you can see, the LINZ predictions are the closest to the real tides. We keep recording through the summer and that doesn't change. Bottom line? A decision to use the LINZ tide predictions at the Centre

Although discussed at length, we are unable to determine the accuracy of the height predictions without some way to measure the true height of the tide. So for now we use the LINZ height. Maybe next summer . . .

SPECIAL VISITORS: (from left) Grey Plover; Little Whimbrel. Photos / GabrielBuissart, Kevin Lin

A season of attractive and intriguing visitors

Unusually the South Island Pied Oystercatchers were landing on the mud in front of the Godwit Hide, rather than their customary shell bank roosts. There were several hundred of them. But among the spectacular array of black and white splashed with pink and orange, we glimpsed two strips of pale grey and some brown. Once we were focused in there was no mistaking the legs of a Far Eastern Curlew making, in late March, one of its irregular appearances. Part of a pattern of comings and goings throughout the season.

The next day the curlew was seen again along with a Black-tailed Godwit, possibly the same bird recorded during the field course in January. There were also two records of a Hudsonian Godwit. But perhaps the most significant rarity was the Little Whimbrel. First recorded at Labour weekend it was seen a number of times over the summer until early March. In the past this species has usually been present for one or two days before disappearing. In comparison this bird was almost a regular. A Grey Plover was also seen regularly until March.

But perhaps the most notable feature of the season was the Pacific Golden Plover flock. There are almost always some here each year but seldom more than 50 or so. While the maximum count remains 129, more often numbers seen averaged 70-90. By the end of March many were displaying considerable amounts of breeding plumage, and as they are among the most spectacular of all waders, this was an impressive sight. No less impressive was their reluctance to cooperate with aspirations to catch and flag them: two catching attempts were unsuccessful.

The tidal surge of January 5 appears to have had a number of effects on local birdlife. Most overtly was the total loss of all White-fronted Tern nests on the shell bank. Other effects took longer to emerge. A feature of the Pukorokoro Miranda coast that enthrals UK and European visitors is the abundance of Skylarks. Normally they are ubiquitous, but they have not been nearly so prominent since the flood. This is perhaps not surprising for this ground-nesting species, as virtually all active nests will have been flooded.

Saltwater inundation of the paddocks behind the centre and cottage appears to have impacted a number of birds. A pair of pheasants were usually present in the paddocks behind the cottage but have not been seen since the flood. It was not until late March that Starlings, Myna and Pukeko were seen once again foraging in a few small patches. However, most of the affected paddocks remained empty of birds, likely because the saltwater eliminated the invertebrates they feed upon.

Canada Geese have been in the area for some years now, the most common place to see them being the quarry lakes north of Kaiaua, and numbers have been steadily growing. From time to time a few would be seen around the shell bank or occasionally on the Stilt Ponds. Presumably they have also started roosting at night somewhere south east of the Shorebird Centre because it has become a common sight each morning just after dawn to watch a ragged skein of c.150 birds honking noisily northward over the centre.

Keith Woodley

Recent sightings at Pukorokoro

Arctic Migrants

300	Bar-tailed Godwit
30	Red Knot
	Ruddy Turnstone
1	Eastern Curlew
12	Pacific Golden Plover
2	Sharp-tailed Sandpiper
1	Red-necked Stint

New Zealand species

2000	Wrybill
30	Banded Dotterel
2000	SI Pied Oystercatcher
52	Royal Spoonbill
1	White Heron
590	Black-billed Gull
	Caspian Tern
	Pied Stilt
4	Hybrid Black Stilt
	New Zealand Dotterel
4	Variable Oystercatcher
	Spur-winged Plover
650	White-fronted Tern

A VAST UNSPOILED PLAIN OF BIRDS: At Sindo, just on the North Korean side of the border with China, the PMNT team found huge areas of mudflats, untouched by human development, swarming with godwits, curlews and Great Knots. Photo / Adrian Riegen

Fitting together more key pieces of the Yellow Sea jigsaw puzzle

PMNT's groundbreaking work to locate – and consequently seek to protect – the roosts around the Yellow Sea vital to our migratory shorebirds has just taken two huge steps forward. One team of observers has just returned from North Korea after finding an internationally significant site for Bar-tailed Godwits and Far Eastern Curlew on the Korean side of the Yalu River. Simultaneously a second team was on the already well-known Chinese side of the river to see whether the birds move between the two countries in response to the tides. **Keith Woodley** reports from Sindo in the Democratic People's Republic of Korea, and on page 10 **Nigel Milius** reports from Yalu Jiang in the People's Republic of China.

Sunlight bounced off brightly coloured godwits massed on the flats. There were several slabs of them extending upstream until lost from view behind a seawall. Birds in such numbers we had seen before, particularly during earlier visits to Yalu Jiang. The backdrop too was slightly familiar although now seen from an utterly different perspective.

Across the river stood the enormous 7 km long backdrop of Dandong port – its bright cranes, silos and ships extending down the channel as far as we could see. There was also the familiar striped stack of the power station so familiar to any visitor to Yalu Jiang. But now it was behind the port. For we were now across the Yalu River and into North Korea, on the south west end of Sindo. And we were about to make a stunning discovery.

The border crossing two days earlier, for the team of Adrian Riegen, Keith Woodley, David Melville and a crew from TVNZ, had not been as we expected. We knew of course that our transit would be brief, for we were merely crossing the river to Sinuiju, the town we had so often looked upon from Dandong.

Cleared by Chinese immigration and customs we arrived on the platform and found the train, bound for Pyongyang, consisted of sleeper cars, each narrow compartment lined with

PMNT in the spotlight

With international attention focussed on the nuclear stand-off between the USA and the DPRK it's hardly surprising that the Trust's work in North Korea is attracting increasing attention.

This latest visit to North Korea, probably the penultimate in our survey of the coastline, was followed by a documentary team from TVNZ's Sunday programme and a team from North Korean TV.

It was also closely scrutinised by our Ministry of Foreign Affairs and Trade to ensure there were no breaches of the international sanctions on North Korea.

DPRK TEAM: (from left, rear) Im Song Hyok, Nature Conservation Union of Korea; Ri Chol Ju, DPRK Academy of Sciences (AoS), Keith Woodley; Ri Song Il, Acting-Director NCUK; David Melville; Ri Chung Song, AoS; Mark Crysell, TVNZ; (front) Adrian Riegen; Kim Ji Hyong, NCUK; Ju Song I, NCUK; Louisa Cleave, TVNZ.

Photo / Martin Anderson, TVNZ

narrow bunks, three high. Into one of the few vacant ones we piled with our gear, stacking baggage all over the bunks and into any other available space. There were six of us and with the film crew's equipment there was a lot of baggage and barely room for us to stand.

We then found we needed to have our baggage piled near the end of the car ready for a swift exit. We formed a chain, manoeuvring bulky items through tiny confined spaces, as the train began to move. Between this and the need to complete paperwork for Korean immigration, there was little opportunity to enjoy the ride.

Beneath us flowed the swift current of turbid water. A glimpse of the bombed bridge ending in mid-stream – and we were across, pulling into Sinuiju station. There on the broad open platform lined with border officials was Ri Song Il acting director of NCUK who had done so much to organise this visit, and Ju Song I our NCUK colleague from all previous visits.

Although in the past we had always flown into Pyongyang, for our team there was still much that was familiar. But for our companions from TVNZ Sunday programme, it was all very exotic.

Now on Sindo we were busy surveying. Before us lay a vast area of pristine mudflat covered in birds. Everywhere there were curlews, their eerie cries were to be a constant backdrop to our time on the island. Nowhere else in China or in the south had we seen this – a place where the only footprints on the mud were from birds. There were no fishermen out there, no nets, no people harvesting shellfish – just curlews and godwits and other shorebirds.

Our final estimates for the day were 13,000 godwits and 5000 of the two curlew species, perhaps evenly split between Eurasian and Far Eastern. With the flood tide birds left the river bank and the flats immediately to the south and drifted off to our left. They gathered in several small tidal inlets lined with reeds. With the rising tide they were extremely restless, on one occasion taking flight in an impressive roar as a Peregrine Falcon passed over. But at full tide they settled and slept.

The reeds allowed us close ap-

ON THE OTHER SIDE: The Korean landmark of Elephant Island with the familiar sight of the Chinese port of Dandong in the background across the Yalu River. Photo / Adrian Riegen

proach. There followed one of the best shorebird viewing experiences I have had anywhere around the Yellow Sea. There had been of course the spectacular flocks at Saemangeum in 2006, and a number of grand spectacles in the early years at Yalu Jiang. But here in one of the inlets, barely 30 metres away, were thousands of godwits, a few hundred Great Knots, and, scattered along the edge of the flock and massed around the back hundreds of curlews – all sleeping.

Godwits are usually very wary birds, curlews even more so, but clearly these birds were quite relaxed, an indication perhaps of how little disturbance they face here. For Martin Anderson the cameraman this was the first opportunity to film close ups of these remarkable birds in good light.

The closeness of the flock allowed good opportunity for reading bands and flags, although its density meant many marked birds went unrecorded. But we found birds from Pukorokoro Miranda, Nelson and the Catlins, from Northwest Australia and Queensland, Thailand and China.

We returned the next day, descending from the vehicle to the ubiquitous cry of curlews. This time we climbed the small hill, from the lower flank of which we had started our count the day before.

From the top the view was quite spectacular. South east along the coast were huge areas of reed beds and marsh, before a backdrop of distant hills. In front, and immediately below us were the mudflats that ended in the reed filled inlets that had served us so well yesterday.

There were thousands of godwit and curlew, most of them being shepherded by the tide line which we could see pushing below them. Equal numbers of birds remained in the water – but gradually the entire tableau was moving steadily shoreward, an animated stain flowing up the beach.

What was truly novel was our vantage point. Normally wader flocks are seen from on or near ground level, from where they appear jammed together as a tight mass. But from here each bird could be seen in isolation with space all around it.

At the base of the hill sat a plinth referring to Elephant Island. Our hosts pointed to a very large rock slightly off shore that was shaped like an elephant. From this angle it was unconvincing. However, once we started walking around towards the reeds it all became clear: it was indeed a remarkable likeness. So we came to know this site as Elephant Island Bay.

After three nights on Sindo we returned upriver to Sinuiju. The night time departure on a small boat was an adventure in itself. Clambering off the concrete jetty onto rocks and mud and then up a precarious plank to the bow of the boat, all by torchlight.

There followed over several hours a slow advance up the river, between banks of contrast. To the west – the brightly lit high rises of New Dandong, and then the spectacular river front of downtown Dandong: to the east the more modest and mainly dark skyline of Sinuiju. Waiting for the tide to allow docking it was just on midnight when we finally moored.

The second section of the survey was to be the coast immediately to the east of Sindo, extending south east towards the last site visited by the team last year. But it did not quite work out that way. For one thing our departure from the hotel was delayed and this, together with a series of delays en route, meant we arrived on site close to full tide.

This is clearly a highly sensitive area with a marked increase in border guards and official scrutiny than we have experienced at sites further south. Which made us even more grateful for the work of Mr Ri in getting us this far.

Our initial destination was a village and border post at the base of several small outcrops, beyond which were reed beds with a small river meander-

MAJOR ROOST: Thousands of Bar-tailed Godwits, many in breeding plumage, roosting quietly on the mudflats at Sindo in North Korea. Photo / Adrian Riegen

ing through. Behind two young soldiers we advanced out into the reeds. At first the ground was relatively firm and littered with fallen reeds. There then came a succession of detours around patches of water and soft mud, and narrow channels challenging to people of shorter stature. With our view constrained by 2m high reeds all around there was no way of knowing how far it was to the coast.

Eventually we came to the main channel where a secondary but equally impassable channel joined. The day was turning into a bust. We could see a few small airborne flocks, mainly curlew, in the distance but there was no way of advancing further.

Meanwhile Mr Ri and the soldiers were in discussion with some fishermen whose boat was moored near the channel junction. Before long we were clambering aboard for a look down the river. The boat was a tiny working vessel, its decks strewn with rope, a tool kit and other obstacles.

On board were the three fishermen, the two soldiers, the six of us, plus our six Korean colleagues together with the Korean film crew who were also filming the project.

Reeds lined both sides and extended as far as we could see in any direction, the only landmarks the outcrops and low hills that marked our departure point.

Here and there on the banks were small flocks of curlew and Whimbrel all spooked into flight by our approach. Where side channels joined there were more birds together with a few dozen Dunlin. At the mouth of the river, about two kilometres from where we embarked, it became clear there were unlikely to be major shorebird roosts in the area, so the small flocks we saw represented a reasonable snapshot.

It turned out to be a splendid day. We could not complete a full survey, but to experience the reed beds was good consolation.

For David Melville in particular it was a memorable sight. 'This is what the Jiangsu coast of China must have looked like back in the 1960s. And the whole Yellow Sea coast a hundred years ago.'

We were unable to travel further towards the area visited by the PMNT team last year, but at least we now knew something of the coast immediately east of Sindo.

More importantly, we had confirmed the international importance of the Sindo area for shorebirds, especially Far Eastern Curlew and Bar-tailed Godwits. Indeed the DPRK probably holds the key to the Far Eastern Curlew's survival.

RESTING PLACE: The Sindo Hotel in North Korea. Photo / Adrian Riegen

THERE THEY ARE: New Zealand's Ambassador to China John McKinnon, who has been very supportive of PMNT's work, finally gets to see some godwits at Yalu Jiang with the help of Bruce Postill. Photos / Nigel Milius

Birds and photographers flock to Yalu Jiang

For several years now PMNT has been involved in shorebird surveys in the Yellow Sea region, but this year's work took on a slightly different angle. As well as completing bird counts, we wanted to try to answer the question of whether or not birds were moving from China to Korea as the tide advanced.

This required teams observing on either side of the border so, while Keith, Adrian and David were on the Korean side of the Yalu River, Estella Lee, Bruce Postill, Wendy Hare and Nigel Milius were at Yalu Jiang.

We arrived in Dandong after flying to Beijing and taking the bullet train from there. The weather was pleasant but spring hadn't really sprung, trees, for the most part, still very bare, the first leaves and flowers just emerging.

Three days later we took our first recce trip to the eastern end of the Yalu Jiang National Nature Reserve where our efforts were to be concentrated. What a change from when I was last there 10 years ago.

Then we were pretty well the only people present, but now, 'Godwit watching', or, more accurately, bird photography, has become a big thing.

Great to see local interest in the shorebirds. Without that, any conservation efforts anywhere are a waste of time to my mind. Most people were well behaved, though as far as educating one or two not to yell or throw rocks in order to get those flight shots goes, there is still some work to do.

Less encouraging was the development of the huge Port of Dandong over the last decade, eating up valuable mudflats, though the Yalu Jiang staff had stopped a reclamation in an even more important part of the reserve, Site 2, a little to the west.

You can never win every battle, so good to see that there is some success with the key ones. Sometimes it seems there is no progress, but considering it's only two decades since Yalu Jiang was identified as a key stopover, it's actually been quite remarkable.

The outgoing New Zealand Ambassador to China, John McKinnon and his wife Avenal, visited the same day the DPRK team left by train.

With the sun shining behind us, little wind, Adrian's forecast that the tide would push the birds close to the seawall but allow them to remain on the mud proving correct, and the spectacle of several thousand birds (mostly Bar-tailed Godwit, Great Knot and Dunlin) made for a perfect morning.

It was particularly rewarding for the Ambassador as he'd had a rather sub-optimal experience (due to poor weather) in another part of the Yellow Sea with Adrian last year. It was something he had requested to do before his tour of duty ended, and he seemed suitably impressed. Always good to spread the word, especially in such high echelons.

So to the survey itself. As planned, the first three days were spent at the eastern end of the reserve. Even on the highest tide (the middle day of the three) a few thousand birds remained on the mud, but this was the only day we saw what may have been movements across the border (identified as birds flying high in the right direction).

This was also the day we recorded our biggest counts, 31,500 Bar-tailed Godwits, 9,500 Dunlin, 7,500 Great Knot plus much smaller numbers of other species.

On other days, birds were seen heading off in the right direction for Korea, but seemed to be heading for roost sites within the port. Of course, they may have been touching down there then heading off again, but with no way of contacting our colleagues, all we could do was record the movements and compare notes later (it turned out they hadn't recorded anything that looked like it was coming from China).

Our last two scheduled survey days fell on a weekend and, with the weather forecast looking questionable, the reserve staff decided to hold off with their survey until the Monday.

We still went out to search for bands and flags around what we had christened "Ambassador Point" (the site we took the Ambassador to), the weather proving excellent, and our rewards plentiful.

IN DEMAND: (from top) Bar-tailed Godwits and Great Knots at Yalu Jiang; zooming in on the birds; the great wall of Chinese birdwatchers; bird display in Dandong.
Photos / Nigel Milius, Wendy Hare

During our time at Yalu Jiang, we recorded 59 individually marked Bar-tailed Godwit, including birds banded in New Zealand, Australia, Japan and Yalu Jiang itself, 14 Great Knot, mainly from NW Australia, but also from Victoria, and other parts of China, and a single Dunlin from NW Australia.

The spectacle of over 40,000 shorebirds wheeling around in close formation must surely be one of the natural world's greatest sights and one that always stirs the emotions no matter how many times one has seen it.

It's tempered slightly here by the backdrop of the huge, aforementioned, port of Dandong, a stark reminder of the developments and reclamations affecting many parts of the Yellow Sea, but it is still a truly wondrous sight.

Hopefully, the work of PMNT in this region will help ensure it's a sight that's there for future generations to marvel at too. **– Nigel Milius**

Emergency bird feeding plan put into action at Yalu Jiang

The discovery that the coldest winter in 49 years has killed off much of the clam population at Yalu Jiang National Nature Reserve sparked off emergency action last month.

With migration in full swing, there were concerns about whether the vast numbers of Great Knots (largely from Australia) and, to a lesser extent, Bar-tailed Godwits (mostly from New Zealand), would be able to fuel up enough to reach the Arctic and breed.

Scientists and conservationists developed a plan to buy quantities of commercially grown clams and seed the mudflats with these. An appeal for funds was launched by PMNT on the Trust's website and other groups also sprang into action. Major donations of 500,000 RMB were received from State Forestry China and the SEE Foundation in China which was enough to get things moving. PMNT's appeal quickly raised $11,000 but then the team at Yalu Jiang advised that they had sufficient funds to implement the programme so fundraising was suspended.

We hope to hear shortly how well the feeding programme worked.

Reflections upon a flung scarf

Keith Woodley meditates on the glorious sight of a flock of Wrybill soaring rhythmically above the Firth of Thames, a poetic vision Miranda birders call 'a flung scarf', and being a confirmed ornithologist also ponders on the biological factors that lie behind such spectacular displays.

If you are familiar with the natural features of the Pukorokoro Miranda coast and you are remembering your visits here, what is the first image that springs to mind? The shell banks perhaps? The massed flocks of godwits and what you have learned about their migrations? The broad expanse of the stilt ponds covered in birds?

For many I suspect the choice will be the aerobatics of the resident Wrybill. Some years ago we ran a contest in the Naturalists' Trust's magazine for an appropriate collective noun for Wrybill. There were already a charm of Goldfinches, a spring of teal, or an exaltation of larks. Many suggestions were proffered: A rhythm of Wrybill? A wrinkle of Wrybill? A twist of Wrybill? The one we chose was a flung scarf of Wrybill.

I was reminded of this in early July by one of our members. Staying two nights at the centre, morning and evening she found herself absorbed to the exclusion of all else by the Wrybill display. One morning we both watched from the front steps as the flock performed above the mangroves at the Taramaire creek mouth. For nearly an hour they were at it, scrolled across the cloudless morning sky like animated calligraphy. The swirls and scrolls, the undulating ribbon etched darkly against the light parchment, and then the vertical coil in twisting descent, an uncanny impression of a tornado rolling across the American prairies. I have been immensely privileged many times to witness variations of this, but never has it become tired or stale; each time the magic is pure and refreshed.

Flock dynamics such as these have exercised many scientific minds over the years. Research into flock flight behaviour has usually focused on one or other of two main questions: how do they do it, and why do they do it?

Most bird flocks seem to fall into one of two categories. Line formations are where birds typically fly in staggered, or echelon, formations rather than in straight lines nose-to-tail. The classic example is the V-shape of a flock of geese, where two such lines join at the apex at the front of the formation. Cluster formations usually consist of large numbers of smaller birds such as pigeons or small shorebirds flying in more irregular arrangements that have a strong three-dimensional character. Such groups are defined by synchronized, and what appears to our eyes, to be simultaneous rapid changes in direction. The Taramaire Wrybill that morning were a quintessential example of this.

Scientific questions about such behaviour have usually focused on the mechanism: how do birds achieve such synchrony? In 1931 British ornithologist Edmund Selous presented the outcome of his 30 years of meticulous observations of various species of birds flying in organized flocks. He was convinced that within the limits of unassisted human vision, birds could be seen rising from the ground, or making turns simultaneously, for which there were only two possible explanations.

The first was a disturbance from outside the flock, such as the sight of a predator, which would instantaneously alert all birds in the flock, causing them to react in identical manner. The second possibility was an undefined quality he called 'thought transference', or what we might refer to today as 'telepathy'.

In the more modern world of high-speed photography and computer models, the idea of telepathy no longer holds. In the 1980s, computer programmers began to create models that show how simulated animal groups can respond to the movements of individuals within them. They found three simple rules were sufficient to

FLUNG SCARVES: Two versions of the dance of the Wrybills. Photos / Adrian Riegen, Athena Drummond

form tightly cohesive groups: each animal needs to avoid colliding with its immediate neighbours; it needs to be generally attracted to others of its kind; and it has to move in the same direction as the rest of the group. These factors can be used to develop a computer model to create virtual flocks. However, such models cannot adequately explain how bird flocks can react as quickly as they do.

Films of Dunlin flocks in the US were analysed frame by frame to show how each individual bird moved. This revealed that a turn ripples through a flock much as a Mexican Wave passes through sports fans at a stadium, a finding the researcher called the 'chorus line hypothesis'. An individual dancer who waits for her immediate neighbour to move before initiating her kick will be too slow; similarly, a Dunlin watches a number of birds around it, not just its nearest neighbours, for cues. But the wave was propagating through the flock at least three times faster than could be explained if they were just watching their immediate neighbours.

Studies of European Starling flocks, which also perform elaborate flight displays, expanded on these findings. It was found that, however dense a flock appears from the outside, its members are not evenly distributed. Rather, each member has a good deal of space behind and in front. Starlings don't appear to mind having neighbours nearby beside, or above and below, as long as they have open space ahead. The presence of a clear path in the direction of travel minimizes the likelihood of collisions should the birds need to shift their course suddenly, such as when a falcon attacks.

But researchers were also able to quantify the chorus line hypothesis. By looking at correlations between the movements of neighbouring starlings, they found that each bird always pays attention to the same number of neighbours, whether they're closer or farther away. Somewhere between 2 and 6 neighbours seems to be the optimal number for making these decisions.

But why do they do it? What is the biological utility of such flight behaviour? The most commonly accepted view is that the closely spaced cluster flocks offer protection against aerial predators. It is thought that a predator may be confused by this multi-target scenario or even deterred by the increased risk of collision.

This is quite an acceptable explanation although it does not explain the Wrybill behaviour over Taramaire. Nor does it explain the extraordinary behaviour of Starlings. In Europe, towards sunset flocks of Starlings that have been widely dispersed by day gather into huge flocks over a night time roost. There they perform spectacular and prolonged displays for up to an hour. What is the purpose of this? Is it not a waste of energy? Does such a visible display not attract the attention of predators? No adequate answers have yet emerged.

So what about those Wrybill? Versions of this display can be seen anytime from January to early August, but it is late June or early July when it seems to be at its most intense and prolonged. After that our Wrybill drift off to the South Island and dispersed to breeding sites. Those 2000 birds from Taramaire transform into individual pairs scattered over hundreds of sq km of braided riverbeds.

So was that aerial performance some form of pre-dispersal display? Or was it just recreation? Was it just that they were doing it because they could, for the sheer exhilaration of it all? For the biologist this may not be acceptable, but that is the conclusion we both reached on the front steps of the centre that morning.

The sad state of the Hauraki Gulf

The latest report of the Hauraki Gulf Forum, the body set up to protect the magnificent Hauraki Gulf Marine Park, paints a sad picture of an environment which continues to deteriorate and a protective mechanism that is badly broken and in urgent need of repairs, writes **Ray Buckmaster.**

Witnessing the departure of a group of godwits on their northward migration provokes mixed emotions. On the one hand, their annual journeys from one end of the world to the other are truly awesome. On the other, it's impossible not to wonder whether this amazing migration, which has been going on for at least ten thousand years, will be able to continue for ten thousand more.

First stop after Pukorokoro Miranda is the Yellow Sea where huge areas of habitat where birds used to refuel have been lost or degraded. Then it's on to Alaska where the effects of climate change are much amplified. And there's no room for complacency here, either, because the Firth of Thames has also suffered considerable human exploitation that has caused widespread environmental damage.

We know that some progress is being made in protecting the fringes of the Yellow Sea. But what about here? Are we making progress?

An answer to that question came a few weeks ago with the somewhat belated release of *The State of Our Gulf 2017*, the fifth in a series of triennial progress reports issued by the Hauraki Gulf Forum, the body charged with monitoring, managing and, hopefully, restoring the Hauraki Gulf of which the Firth of Thames is a vital part. The forum includes representatives from the manu whenua, the two major territorial authorities, Auckland Council and Waikato Regional Council, several district councils and various Government ministries.

As is always the case, there are areas of good news in the 2017 report as some challenges are less intractable than others.

•Great progress is being made in restoring seabird colonies, working cooperatively with the fishing industry to reduce seabird deaths and establishing pest free island sanctuaries.

•There is a splendid example of integrated management preserving the Bryde's Whale population of the Waitemata Harbour. Whales were regularly coming into collision with cargo vessels but the ships now speed up before they reach the Gulf and slow down as they pass through it. It is a win-win situation where cargo vessels maintain the same transit time and whales can avoid collisions with the slower moving ships.

•There are now 46 islands free of mammalian pests which form critical sanctuaries for many endangered native species. Significant progress is being made in the revegetation of the larger islands, and the restoration of functioning indigenous ecosystems, often in community-led programmes.

Overall, though, successive reports of the Hauraki Gulf Forum have noted a continued downturn in significant environmental indicators and acknowledged that there is no simple solution to halting these trends.

Toxic heavy metals have increased in Auckland estuaries and micro-biological contamination of swimming beaches has become more frequent. Fish stocks have declined. Infrastructure continues to be built into the sea. Marine Reserves are no longer being created.

In the Firth, the rivers of the Hauraki Plains are delivering high levels of both sediment and nitrogen/

SYMBOL OF HOPE: Measures to safeguard the Gulf's resident Bryde's Whales are a rare success. Photo / Stephanie Behrens, Auckland University.

phosphorus with impacts well beyond its boundaries.

After the first three disturbing reports the Forum set itself the task of finding solutions. In 2013 Sea Change – Tai Timu, Tai Pari, came into being. It comprised 14 stakeholder working groups – agencies, community groups and aqua-culturists among them - tasked with producing *The Hauraki Gulf Marine Spatial Plan for the integrated management of Tikapa Moana /Te Moana-nui-a-Toi.*

The plan was delivered on 6 December 2016 along with the hope that it would be 'a catalyst for manuawhenua, communities and agencies to work together to return the Gulf to a place that is vibrant with life, has a strong mauri, is productive and supports healthy and prosperous communities.'

The Spatial Plan is ambitious in intent, concerning itself with ecological restoration to a pre-European state rather than maintaining the status quo.

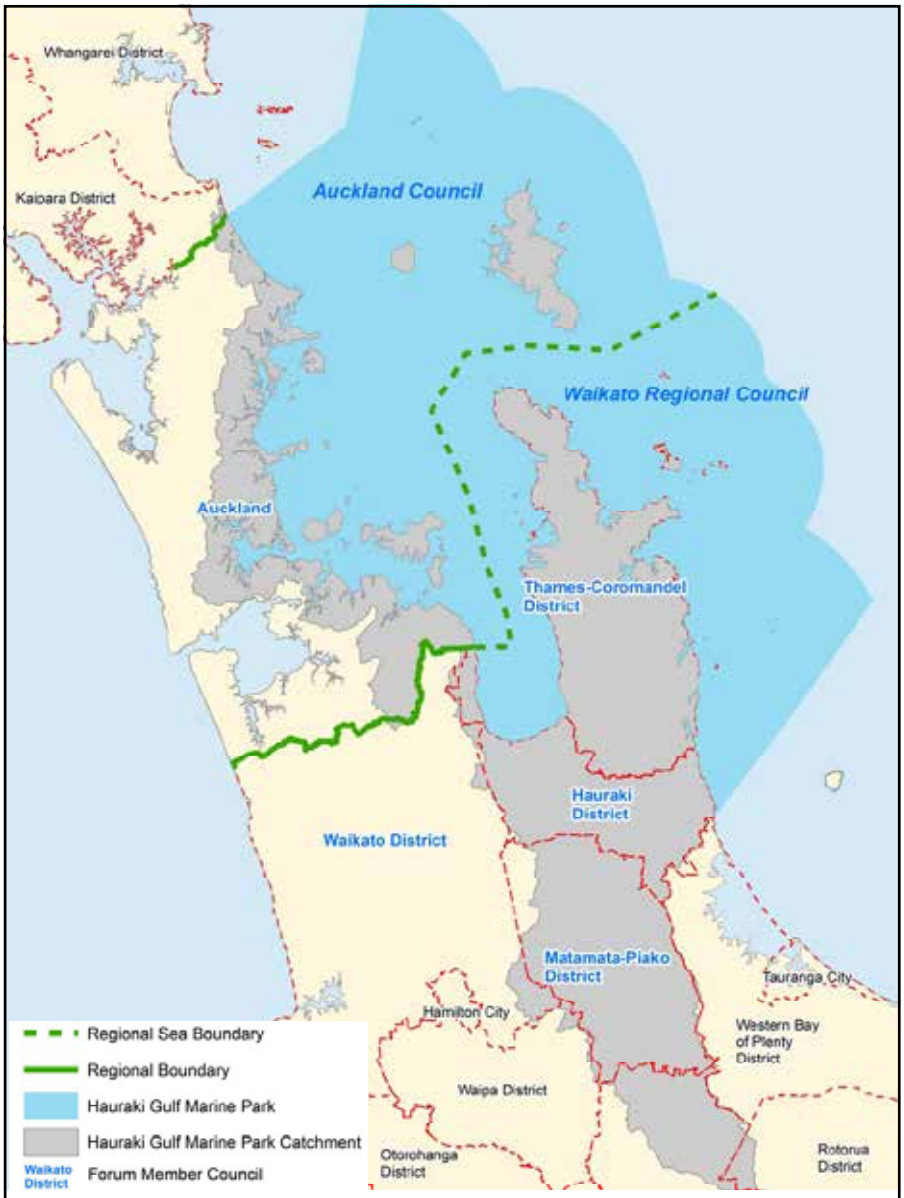
The plan identifies two major ecosystem components and associated organisms which have been lost but could be recoverable and could do much to assist the rehabilitation of the Gulf.

Mussel beds, both green-lipped and horse mussels, once dominated the sub-tidal regions of the Gulf, covering maybe 1000 sq km, filtering the waters for plankton and removing sediment. By the 1960s commercial exploitation had destroyed these mussel reefs.

Eelgrass beds, and the communities they support, would once have been widely present inter-tidally, consolidating sediment and contributing to clear water. Today eelgrass beds persist in small areas but they are not thriving.

The natural rate of sediment accumulation in the Firth prior to human impact was around 1mm a year and this, cores show, was of coarse material. But 150 years ago finer, mud-like rather than sandy, sediments started to enter the Firth. Most deposited but part remained suspended in the water interfering with light transmission. Eelgrass struggles to survive when sediment accumulation rates rise and reduce the light reaching their leaves.

Some work has been done to restore both mussel beds and eelgrass – for example, Ngati Whatua has a project to revive the old mussel beds in Okahu Bay and artificial eelgrass beds have been created in places like the Whangapoua Harbour – but a much



A jewel worthy of protection

The need to give greater protection to the Hauraki Gulf, including the Firth of Thames, was formally recognised by Parliament with the passing of the Hauraki Gulf Marine Park Act on 27 February 2000.

The Park encompasses 1.2 million hectares of marine environment; the catchments that feed into it, the most significant being the rivers of the Hauraki Plains; a huge rural area extending as far north as Waipu Cove; the urban sprawl of Auckland City, home to a third of New Zealand's population; Waitemata Harbour, on which the city was founded; over 50 islands; the Coromandel Peninsula; and five marine reserves.

The intention of the Act was to achieve integrated management of the whole area, uniting in a common cause the various agencies involved with management of the economic, natural, recreational and environmental aspects of the Gulf. A considerable challenge but one that the promoters of the new park hoped could be met over the coming years.

The management challenges arise from the competing uses of the Gulf. Each year it generates $2.7 billion dollars of economic activity. Auckland being a port city, some of this comes from marine transport. More arises from fishing and aquaculture. The largest contributors, however, are tourism and recreation. The park also has rich biodiversity, predator-free islands, many endemic seabird species and marine mammals, as well as a significant Ramsar site in the Firth.

The Gulf is of profound cultural and spiritual significance to local iwi who have lived on its shores for many centuries and are keen to see it restored to its former glory.

AGENTS OF REVIVAL: Artificial beds of eelgrass in Whangapoua Estuary (right) and the surviving mussel reef off Great Barrier Island are just the beginning of what the Gulf needs. Photos / Ian McLeod, Crispin Middleton.

bigger effort will be required to turn back the clock.

Sediment hasn't just affected eelgrass. It also has major impacts on benthic fauna. Back in the 1940s the Ministry of Works noted complaints about the loss of cockle beds in the lower Firth. Now benthic surveys show a change toward mud-tolerant fauna.

Human activity has increased siltation by an order of magnitude. In the 40 years prior to 1918, 44 million cubic metres of sediment entered the Firth. At first this was due to gold miners seeking gold rich quartz veins who de-forested the Coromandel Range with fire and, in the absence of vegetation, the topsoil ended up in the Firth.

But from 1908 on much of the sediment came from draining the wetlands that once made up much of the Hauraki Plains. Today sediment continues to enter the Firth, carried from the intensive agricultural region that the plains became, now being home to 410,000 dairy cows.

Nutrient inflow to the Firth maintains elevated year-round levels of phyto-plankton. Between 2006-2015 an average annual load of 3,666 tonnes of nitrogenous material was delivered by the rivers of the Hauraki Plains.

Some encouragement can be taken from the fact that during that period nitrogen input declined by 1.2% a year. But, by way of indicating how far there is to go, the largest Auckland sewage treatment plant discharging into the Gulf releases between 179 and 226 tonnes of nitrogen each year.

Furthermore, in 2011 aquaculture reforms allowed for an additional 1,100 tonnes of nitrogen to be discharged each year from proposed finfish farming enterprises. This hasn't happened yet but if it did dairy farmers on the Plains might feel aggrieved about their efforts at mitigation being cancelled out so wilfully.

The Waikato Regional Council monitors river systems but not the Firth waters. However, NIWA monitored the outer Firth for a period up until 2012. That has revealed that the sea in this region is stratified. At a depth of around 8m the temperature suddenly declines, indicating that it is not mixing with surface waters. In autumn dissolved oxygen reaches levels described as deleterious. At the same time the water becomes more acid due to the release of carbon dioxide from the decay of dead phytoplankton raining from above.

Unexplained, is the rise of nitrogen levels in the Upper Firth at a time when nitrogen amounts entering the lower Firth are falling incrementally. One possible reason is that the Firth has passed the point where it can return all the incoming nitrogenous materials to the atmosphere as harmless nitrogen gas.

The Spatial Plan has defined the approaches needed to deal with the varied problems of the Gulf. These solutions require progressive timelines of a multi-generational nature. The Hauraki Forum now has the task of persuading the decision makers to implement the cures. For this to happen, the Forum says, 'integrated management is seen as an essential fix to ad hoc and ineffective decision making'.

Unfortunately, *The State of Our Gulf* identifies lack of integration across agencies and the regulations under which they must act is identified as a key issue delaying progress. For example, the report states, 'The Fisheries Act resource utilisation objectives are directly in conflict with the objectives of the Hauraki Marine Park Act.'

Furthermore, it says, even within the Forum itself, 'The Crown representatives do not appear to have worked together in any integrated way. This siloed, single issue approach has militated against the achievement of integrated management. More direct intervention at the ministerial level could lead to more constructive input from the Crown.'

In their foreword to *The State of our Gulf 2017* Forum chair, Mayor John Tregidga, and deputy chair, Liane Ngamane, have made it clear that little progress is being made across the key areas and made passionate appeals for help to the new Government, and especially the new Minister of Conservation (see opposite page).

A common approach to life is to say, 'If it ain't broke don't fix it.' Given the continuing deterioration of so many of the environmental indicators, it seems fair to conclude that the Hauraki Gulf is well on the way to being broken. That being the case, another management approach seems an absolute necessity. Given the integrated nature of ecosystems it seems eminently sensible to try an approach that reflects this.

Fingers crossed that it will happen before there are no longer any godwits needing a haven here during the Arctic winters.

Forum leaders' plea to new Government:

'Minister, the Hauraki Gulf needs help'

The chair of the Hauraki Gulf Forum, John Tregidga (top left), and deputy chair, Liane Ngamane, (below left), have used the triennial State of our Gulf 2017 report to make personal appeals for help to the Government of Prime Minister Jacinda Ardern (top right) and especially to new Conservation Minister Eugenie Sage (below right).

The two leaders of the Forum have identified several key areas where urgent Government action is needed:

Water quality

John Tregidga and Liane Ngamane note in their foreword that, 'Water quality degradation is one of the most universally unmet costs of development of rural, urban and mining activity in the Hauraki Gulf catchments. Sediments, nutrients, heavy metals, pathogens, micro-plastics and rubbish accumulate in stormwater discharges, streams and rivers, estuaries and Hauraki Gulf.'

This will only be dealt with if there is 'a more integrated, comprehensive and less piecemeal approach to regulation and performance . . . We would appreciate some Ministerial advice on innovative options for a long-term approach to their resolution.'

Fish stocks

Estimates suggest that Hauraki Gulf today supports less than 45% of the biomass present in 1925. Snapper and Rock Lobster populations are well below target stock levels, while John Dory, Porae, Gurnard and Trevally population levels are of concern.

On this the two leaders say, 'We support a fundamental review of fisheries legislation to focus on transparency of decision-making and the abundance and well-being of fish and their habitats, so that the fisheries legislation gives better effect to the objectives of the HGMPA, as was originally envisaged.'

Marine reserves

Only 0.3 per cent of the Hauraki Gulf is protected by statute. There are six marine reserves but only one has been created in this century. For most of this period the Marine Reserves Act has been under review, promising a more appropriate legal framework, but that has not yet been delivered.

The plea on this is urgent. 'Minister, we urge that you give priority to progressing new marine protected areas legislation, and its implementation. The Forum stands ready to assist in any way it can.'

Ocean sprawl

Historically, the report notes, the main source of ocean sprawl was from Ports of Auckland. Today, however, the sprawl comes largely from shellfish and fish farming. Since 2014 nearly 4000ha of marine space has been consented for mussel and oyster farms or fish farms. In addition three new marinas or marina extensions have been consented in the period 2014-17, and a dozen jetties and boat ramps approved.

The leaders say, 'Minister, we urge action on these matters relating to encroachments into the Hauraki Gulf before they become the subject of conflict.'

Tangata whenua

The leaders say, 'We would welcome the opportunity to discuss the potential for all three Ministers with Maori portfolios to play a leadership role in the Forum, and assist in addressing some issues, particularly those related to fishing, marine protected areas, and any proposals for a recreational park in the Hauraki Gulf.'

Integrated Management

The holistic strategy proposed by the Forum 'will probably fail because it has no legal status, is therefore unenforceable and given the scale of the implementation task, is probably unfundable, at least under present arrangements. Formal responses from Government Departments have been slow . . . If the new Government sought to remedy these problems the Forum could actively contribute its learnings to a workable solution.'

The Crown and the Forum

'The Hauraki Gulf Forum was envisaged as an assembly of decision-makers, whose decisions collectively affected the Gulf. The Crown is represented on the Forum by representatives appointed by the Ministers of Conservation, Fisheries and Maori Affairs. The Forum could not be described as a meeting place where representatives worked together to solve shared problems. Rather, the officials attending appear as passive reporters of ministry actions or advocates for single issue policies. We would welcome the direct involvement of Ministers at the Forum meetings.'

Integrated funding

'We would be interested to discuss whether Government has any appetite for a joint Hauraki Gulf Marine Park fund to advance work on Gulf strategic issues. Minister, could we, through you, discuss possible new financial mechanisms for Crown work related to the Hauraki Gulf with other Ministers including the Minister of Finance?'

America's Cup opportunities

The 36th Americas Cup Regatta will be an opportunity to showcase the Gulf, its natural and cultural resources and their management, to the world. Minister, we are keen to explore with you and your colleagues how an ethical government investment strategy in the well-being of the Gulf, in this term, might support the investment in the regatta event.'

The 43rd Annual General Meeting of the Pukorokoro Naturalists' Trust will be held at the Shorebird Centre on Sunday 20 May at 11am

Annual Report from the Chair

This is an amazing organisation

Chair **Gillian Vaughan** reflects on a year which started with floods of visitors and ended with floods of sea water – with an amazing amount of other achievements in between.

2017 started with floods – floods of visitors, with January to March bringing in our highest visitor numbers ever. The year ended with a different kind of flood – staff and visitors watching sea water surround the centre in early January. In between visitor numbers stayed up, and the team worked really hard keeping up.

Floods of other activity were going on. The new trail to the hides opened in July thanks to a project funded and managed by the Living Waters DOC/Fonterra partnership, and I know that some people have really found the new trail has made a difference to their use of the hides. The last few years have seen PMNT working closely with Living Waters, and they've been true supporters of the work we've been doing. Although we'll continue to work together on specific projects their focus is moving to on farm/freshwater work. While we'll still see them around I'd like to take the opportunity to thank Dion Patterson and Tim Brandenburg who've driven so much of the work we have done together.

Other key highlights for me were the return of the photography course, yet another shorebird survey in North Korea, a group from Yalu Jiang visiting in January, continued predator trapping, Wendi Lane taking a sledgehammer to the old hide, two new hides built, a mangrove working bee, and Chelsea Ralls and Trudy Lane joining the team late in the year. New mattresses in the accommodation rooms made me unreasonably happy. The low point of the year was the numerous break-ins at the car park in early 2017, but I'm pleased to advise that security cameras have been installed and we are not aware of any break-ins since October 2017.

I've written a few of these reports over the years, but this time is a bit different. This is my last chairperson's report. It feels like time for a new voice and a new vision to drive the Trust, and it will allow me to take on new challenges. I'll still be involved with Council and have no doubt that who ever steps up to the chair role will do an amazing job.

TEAMWORK: A new hide rises in the car park before being moved to the Stilt Ponds. Photo / Jim Eagles

I think PMNT is a great organisation, we do work at a level that is amazing for a volunteer driven organisation, and that's entirely due to the energies, the drive and the vision of the people involved.

This is not a job you do on your own. Thank you to every member or supporter of the Trust, you each bring a strong sense of belonging to the Trust that I value greatly. I've been proud to be leading this organisation over the last eight years. Thank you from me to all the staff and council members who put so much effort in behind the scenes, it's not always seen, but it is very much valued. Special thanks to Keith, Adrian, David and Will, you've all helped me grow into this role over nearly 20 years with the Trust – sorry I took so long! Your support has been unfailing and I don't have words for how much I appreciate it.

Gillian Vaughan

AGENDA

for the 43nd Annual General Meeting of the Pukorokoro Naturalists' Trust

Apologies for Absence
Minutes of the AGM held on 14.05.2017
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 31/12/2019
General Business

MINUTES OF THE 42ND ANNUAL GENERAL MEETING OF THE PUKOROKORO MIRANDA NATURALISTS' TRUST HELD AT THE SHOREBIRD CENTRE ON SUNDAY 14 MAY 2017 FROM 1208 hours.

This AGM followed a talk by Eugenie Sage, Environment Spokesperson for the NZ Green Party.

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

APOLOGIES:
Simon Fordham, Morag Fordham, Nola Dyson, Cathy Catto, Olga Brochner, Kevin Barker, Ian Higgins, Colleen McKerrow, Jim Eagles, Chris Eagles, Mike Hazel, Adrian Riegen, David Lawrie, Charles Gao, Nigel Milius, Wendy Hare, Trudy Lane, Bev Woolley, Brian Woolley.
Apologies Accepted (Betty Seddon/Bruce Postill).

MINUTES:
The minutes of the 41st AGM held on 29 May 2016 had been published in *Pukorokoro Miranda News*. However, circulation of the magazine had been delayed and so the minutes were not available to the membership. It was AGREED that the AGM minutes be considered at the next meeting of PMNT Council on 22 July 2017.

MATTERS ARISING FROM THE MINUTES: Also to be taken at PMNT Council 22/07/17.

CHAIRPERSON'S REPORT:
Gillian Vaughan's report from the chair was also published in *PMNT News* and Gillian spoke to some of the issues mentioned, particularly the successes:

- The visit from Chinese Vice Minister Chen Fengxue including the signing of a Memorandum of Arrangement between New Zealand and China on habitat protection.
- "The Flock" of painted birds, a project launched by Ann and Ray Buckmaster, Jim Eagles and Trudy Lane. This project has been embraced by numbers of school children.
- Continuing activity of PMNT people in the study of migrating shorebirds in the Yellow Sea and advocacy for their conservation.
- Acquisition of the Robert Findlay Reserve, now owned by PMNT. Further land purchase is being considered. One objective is to see Fernbird establish a breeding population in the region within the next 20 years. Plans for early development include riparian planting and obtaining Resource Consent for new hides.
- Another successful January Field Course. Other successful field courses included Field Sketching, Wader Identification and the OSNZ Youth Camp hosted by the Shorebird Centre.
- The Australasian Shorebird Conference in October 2016.
- Working Bee to clear mangroves from the shorebird roosting site in front of the hides.
- Appointment of an Educator. Funding is being sought to continue this position.
- New road sign for "Pukorokoro Miranda Shorebird Centre".

On a negative note Gillian reported that our members and visitors have been the victims of a spate of break-ins at the Limeworks Car Park. PMNT Council is reviewing potential security solutions. Special thanks to Gwenda Pulham, who has recently helped to keep cars secure in the car park while other people are birding.

It was moved that the chairperson's report be received (Gillian Vaughan/Alison Chambers). CARRIED.

Matters arising from Chairperson's Report:

- Land – Stuart Chambers suggested that PMNT consider creating an area where older and less-able birders can watch the birds from their cars.
- Land – Betty Seddon asked how much of the land in the area is now owned by PMNT. Gillian replied that there are now two blocks of land under PMNT ownership in addition to the Shorebird Centre site.
- Courses – How well-attended were the courses? The January 2017 Field Course was full and the 2018 Course is already half full. Sandra Morris's sketching course was not full. There are seven already signed up for the 2017 Dotterel Course.

- Courses - Betty Seddon and Gwenda Pulham both commented on the Youth Camp, suggesting that PMNT make it a regular event.
- Staffing – In response to a question about staffing Gillian and Keith Woodley responded that Kristelle Wi had taken up the position of Assistant Manager following the resignation of Louisa Chase. Kristelle is expected to be able to remain in post until June 2017. The Educator role as performed by Krystal Pennell requires funding and we await the success of an application for funds.

TREASURER'S REPORT:
It was not possible to get a Financial Report ready for this AGM partly because the Treasurer, Charles Gao had recently been unwell.
Charles Gao has announced that he is stepping down as Treasurer because of his recent illness.
Gillian reported that PMNT had made a loss in the last financial year. This loss was expected because reserve funds had been spent on projects including a reprint of Keith Woodley's Godwit book at a cost of $20,000, which we expect to recoup in time.
Heather Rogers asked whether PMNT was paying for overseas/flyway trips. Gillian replied that most of these trips have in the past been funded by the individuals travelling but this year's travel has been covered by a grant from Living Water. Gillian reported that Living Water is also funding the upgrade of the path from the Limeworks Car Park to the hide.
Alison Chambers commented that there needs to be a programme of maintenance for the Shorebird Centre.
It was moved (Peter Maddison/Kevin Vaughan) that the accounts be accepted conditional on publication in PMNT News. CARRIED.

ELECTION OF OFFICERS:
Secretary – William Perry elected unopposed.
Treasurer – Kevin Vaughan elected unopposed (as a short-term appointment).
There were 11 nominations for Council, namely David Lawrie, Adrian Riegen, Gillian Vaughan, Wendy Hare, Estella Lee, Trudy Lane, Ray Buckmaster, Ann Buckmaster, Bruce Postill, Jim Eagles, Peter Maddison. These 11 candidates were elected unopposed.

Gillian welcomed the new members of Council, Kevin Vaughan and Peter Maddison and thanked the departing Cynthia Carter for her energetic service on Council.

Auditor: Staples Rodway proposed: CARRIED.

SUBSCRIPTIONS:
Proposed (Gillian Vaughan / William Perry) that subs remain unchanged for 2017. CARRIED.

GENERAL BUSINESS:
1. Land – Stella Rowe asked what Council is planning for the 11-hectare block to the west of the road. Gillian replied that this block is designated as a protected area and that it is expected to fit into a habitat mosaic in the context of the surrounding land. The current grazing lease remains in place for the time being.
2. Membership - Chris Thompson asked about membership numbers and whether there are any plans to increase membership. Gillian responded that there has been a steady decline in membership. Keith confirmed that there are currently 570 NZ members and 40 overseas members. Gillian commented that PMNT values its membership but that the important measure of the success of the Trust is the impact made by our activity. Ann Buckmaster reported that PMNT has 1779 "likes" on Facebook.
3. School Visits - Betty Seddon asked whether school visits were still declining. Gillian responded that it has become more difficult for schools to recruit the necessary parental assistance to satisfy health and safety requirements of trips outside the classroom. This is why it was important for us to have an Education Officer and Krystal did a good job of visiting schools while she was in post.

Chris Thompson proposed a vote of thanks to the Council and especially to Gillian Vaughan for the hard work in maintaining the activities of the Trust.

The meeting closed at 1250hrs.

A comparatively quiet year for PMNT finances

The accompanying table is a brief summary of the annual accounts for 2017. A full set of the accounts is on the PMNT website and copies will be available at the AGM.

The format of our formal accounts has again changed. These are now prepared under the External Reporting Board guidelines for tier 3 charities which have operating expenditure under $2 million and this is where we belong. This gives us a smaller and somewhat more readable reporting package: 14 pages versus last year's 26. This format requires us to report the objectives of the Trust, the outcomes we look for and the achievements of the year as well as our numbers. In doing this the objectives were taken from our constitution. Outcomes are focused on observation, conservation and education. Achievements list courses, the North Korean survey, visitor and accommodation numbers, publications and open days.

To comment on the numbers, a quiet year for the finances after the land purchase, grants and conferences of the prior year. Total income $201122, total expenses $208738. Mr Micawber had something to say about that. The balance sheet shows our cash resources virtually unchanged at approximately $255,000. A $59500 provision has been created to reflect future costs for Life Members.

The audit report is 3 pages with a number of explanations and qualifications. The key statement is: 'In our opinion, except for the effects of the matters described in the Basis for Qualified Opinion section of our report, the reported outcomes and outputs, and quantification of the outputs to the extent practicable, in the statement of service performance are suitable, and the accompanying performance report presents fairly, in all material respects, the entity information and the service performance for the year ended 31 December 2017, the financial position of the Trust as at 31 December 2017, and its financial performance and its cash flows for the year then ended in accordance with Public Benefit Entity Simple Format Reporting – Accrual (Not-for-Profit).' The full report is on the website.

Thanks are due to Keith and Chelsea who look after the day to day business and pass it on to your treasurer in a very orderly and timely manner and to our auditors Staples Rodway whose guidance is most appreciated.

Kevin Vaughan, Treasurer

Profit & Loss
Pukorokoro Miranda Naturalists' Trust
1 January 2017 to 31 December 2017

Income		
Shop Sales		71,793.14
Shop Purchases		46,144.70
Shop Margin	**36%**	**25,648.44**
Grants		48,959.13
Accomodation		25,296.95
Subs NZ		21,087.69
Subs NZ Life Members		2,913.04
Subs Overseas		1,390.05
Field Courses		20,273.42
Bequests		20,000.00
Donations General		16,719.33
Interest		7,580.87
Land Lease		4,800.00
Tours Talks Lestures		2,846.29
Donations - The Flock		1,954.18
Other Income		1,643.05
Total Income		**201,112.44**
Less Operating Expenses		
Employment Cost - Centre		79,281.43
Employment Costs - Education & Guiding		19,556.52
Flyway Expenses		23,381.79
Depreciation		14,758.62
Field Course Expenses		11,977.99
Magazine Publication		11,745.00
Accomodation Costs		6,080.00
Audit Exps		5,025.00
Insurance		4,573.44
Cleaning		4,510.40
Magazine Distribution		4,097.58
Power Electricity		3,708.01
Maintenance Buildings		3,673.34
Credit Card & Paypal Fees		2,201.44
Rates		1,932.72
Maintenance Grounds		1,907.70
Other Expenses		10,327.02
Total Operating Expenses		**208,738.00**
Operating (- Deficit)		**-7,625.56**

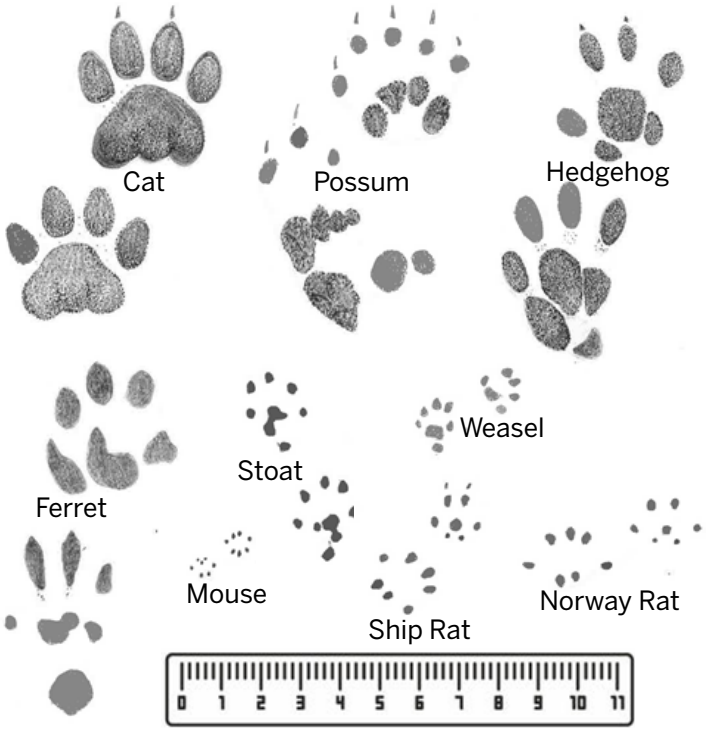
Balance Sheet
Pukorokoro Miranda Naturalists' Trust
As at 31 December 2017

Current Assets	
Cash	300.00
BNZ Accounts	26,313.59
TSB Term Deposits	225,779.66
Accounts receivable	3,167.17
Inventory	34,512.00
Total Current Assets	**290,072.42**
Fixed Assets	
Buildings	283,709.60
Accomulated Building Depreciation	-121,114.32
Plant & Equipment	62,300.70
Accumulated P&E Depreciation	-50,450.28
Furniture & Fixtures	19,921.00
Accumulated F&F Depreciation	-11,525.02
Land	693,909.00
Land & Building Revaluation	932,591.00
Total Fixed Assets	**1,809,341.68**
Total Assets	**2,099,414.10**
Liabilities	
Accounts Payable & Accruals	45,705.66
Life Members Reserve	59,500.00
Total Liabilities	**105,205.66**
Net Assets	**1,994,208.44**
Equity	
940 - Sibson Reserve	40,000.00
960 - Retained Earnings	1,021,617.44
962 - Revaluation Reserves	932,591.00
Total Equity	**1,994,208.44**

GODWIT TIMES

The case of the stolen dotterel egg

A few months ago I was contacted by my friend Debbie Dotterel to investigate the disappearance of an egg from her nest. The only clue I could find was three paw prints in the sand near the scene of the crime. The rest had been washed away by the tide. I compared the prints with those of criminals I had on file but I was still unsure of the culprit. What do you think?



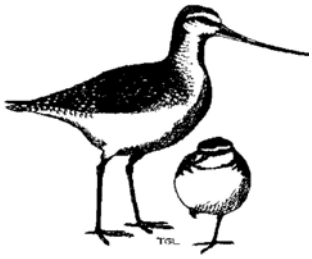
If you email the editor with the answer you may save my reputation as a top detective. As a reward the first correct answers will win prizes of our great new Shorebird Calendar.
Kind regards
Godfrey P.I.

The New Zealand Dotterel

When spring comes around
The Dotterels will breed,
And their chest colours up rusty red,
Then luck they will certainly need.
A scrap in the sand, makes do for a nest,
Looking towards the sea.
Not far from high tide mark she sits on her eggs
But predators make her flee.
She drags her wing along on the ground
Drawing the threat away,
Hoping nothing will take the clutch this year,
As last year all were taken as prey.
With storms taking nests as well as the pests
There seems not a chance of a brood,
But some buck the trend and are raised to fledge
Giving hope to this species renewed.
Once hatched the young feed,
Dashing over the sand
Searching out hoppers and small little grubs,
Parents keeping a watch by close at hand.
After six to seven weeks
The young start to fly.
Maybe the birds will be safe.
But still many dangers are lurking nearby.
Just see if you can think of problems they have.
I can think of a few myself:
There are dogs and cats, and rats
Stoats, hedgehogs . . . what else?

Rosemary Tully

PUKOROKORO MIRANDA NATURALISTS' TRUST



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Council members: David Lawrie (Immediate Past Chair), Estella Lee, Wendy Hare, Bruce Postill, Trudy Lane, Peter Maddison, Ann and Ray Buckmaster, Jim Eagles.

Magazine

Pukorokoro Miranda Naturalists' Trust publishes *Pukorokoro Miranda 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.

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See the birds

Situated on the Firth of Thames between Kaiaua and the Miranda Hot Pools, the Pukorokoro 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 decision making 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 Pukorokoro 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 Pukorokoro 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, the census days are a good chance to get involved with field work and research. This year's are on June 18 and November 12. 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 *Pukorokoro 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.

Make a date with PMNT's first shorebird calendar

All over the tundra of Western Alaska there will be eggs hatching. In the south, the first young godwits will be growing rapidly, as post breeding females depart for migration staging sites on the coast. At Pukorokoro Miranda the Wrybills continue their displays. Out on the shell banks New Zealand dotterels are showing breeding plumage. – Keith Woodley

Photos: (top left), Godwit chicks, Jan van der Kam, (below) New Zealand Dotterel, Philip Moll, (right) Pied Stilt on the Stilt Ponds, Staffan Soderlund.

This is the leanest month for bird numbers at Pukorokoro Miranda. Most of the adult oystercatchers are gone while many Wrybill will also begin heading south. For a time young and immature birds of all species will dominate the flocks on the shell banks. A flock of Royal Spoonbills provides entertainment. On the southern coast of the Yukon Kuskokwim Delta in Alaska godwit numbers will be building up as adults prepare for their epic southern migration. Southern birds are steadily joined by others drifting down from the north. Juvenile birds will also begin arriving on the coast to begin their own departure preparations. – Keith Woodley

Photo: Royal Spoonbills gathering for a feed at Pukorokoro Miranda, Gary Speer.

In December the godwits and knots complete their wing moult. The young godwits are now becoming harder to distinguish as they moult out of their first plumage, losing all those distinctively spotty feathers. Soon they will look more like adults even though they are still three years from reaching full maturity. Towards the end of the month the first oystercatchers and Wrybill begin arriving, ready for the annual Pukorokoro Miranda cycle to begin all over again. – Keith Woodley

Photos: (left) Godwits fighting, Phil Battley; (right) Wrybills in conflict, Nigel Woaden.

By the beginning of March many godwits are fat, coloured and restless. Over the next few weeks there will be regular departures of both godwits and knots setting out on their epic flights via stopovers in East Asia to breeding grounds on the tundra. Most departures occur early afternoon through to evening and are often signalled by excited calling immediately before birds lift off. Flock sizes average around 20-50 birds. – Keith Woodley

Photos: (main) Bar-tailed Godwits, Phil Battley; (below left) Red-necked Stint, David Jenkins; (right) Red Knots, godwits, Phil Battley.

Pukorokoro Miranda **Shorebird Centre**

Birdwatching is best 2-3 hours either side of high tide. Viewing is often especially good on days when there's a high tide around 3.5m.

March 2019

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1 High Tides: 0357, 3.3m;1610, 3.2m.	2 High Tides: 0501, 3.2m; 1710, 3.1m.
3 High Tides: 0559, 3.3m; 1810, 3.2m.	4 High Tides: 0651, 3.3m; 1905, 3.2m.	5 High Tides: 0737, 3.4m; 1953, 3.3m	6 High Tides: 0818, 3.5m; 2036, 3.4m.	7 High Tides: 0858, 3.5m, 2115, 3.4m.	8 High Tides: 0935, 3.5m, 2151, 3.5m.	9 High Tides: 1012, 3.6m, 2226, 3.5m.
10 Farewell to the Birds High Tides: 1048, 3.6m; 2301 3.5m.	11 High Tides: 1125, 3.5m; 2338, 3.5m.	12 High Tide: 1204, 3.5m.	13 High Tides: 0018, 3.5m; 1245, 3.5m.	14 High Tides: 0102, 3.4m, 1331, 3.4m.	15 High Tides: 0153, 3.4m; 1422, 3.4m.	16 High Tides: 0251, 3.4m; 1519, 3.4m.
17 High Tides: 0355, 3.4m; 1623, 3.4m.	18 High Tides: 0503, 3.5m; 1731, 3.5m.	19 High Tides: 0608, 3.6m; 1839, 3.6m.	20 High Tides: 0707, 3.8m; 1941, 3.8m.	21 High Tides: 0803, 3.9m; 2037, 3.9m.	22 High Tides: 0856, 4.0m; 2128, 4.0m.	23 High Tides: 0946, 4.0m; 2217, 4.0m.
24 Tides:1036,4.0m; 1036, 4.0m.	Tides: 0424, 3.2m 1636, 3.1m. 31	25 High Tides: 1124, 3.9m; 2351, 3.8m.	26 High Tide: 1212, 3.7m.	27 High Tides: 0038, 3.7m; 1300, 3.6m.	28 High Tides: 0128, 3.5m; 1349, 3.4m.	29 High Tides: 0223, 3.3m; 1440, 3.2m.	30 High Tides: 0322, 3.2m; 1536, 3.1m.

Pukorokoro Miranda Naturalists' Trust, 283 East Coast Road, Miranda • Phone 09 232 2781 • Email admin@miranda-shorebird.org.nz • Web www.miranda-shorebird.org.nz

Introducing our amazing Shorebird Calendar.

The big calendar block has lots of room to write on plus high tides for Pukorokoro and the dates of Shorebird Centre events.

Enjoy Keith Woodley's notes on what our shorebirds are up to each month and the great photos of your favourite shorebirds.

Calendars are priced at $17.90 (including an envelope if required) at the Shorebird Centre. Or we can post them out to you for $4 in New Zealand or $5 overseas.

The print run will be limited so to avoid missing out contact the Centre now to place your order.

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.

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