

SURPRISE: Professor Theunis Piersma (at right) meets a fellow native of Friesland, in the North of Holland, Joe de Yong, these days a farmer on the Hauraki Plains and a longtime member of PMNT. Joe is holding a specially painted plate presented by Theunis and his partner Petra to mark the Trust's 40th birthday. Photo / Keith Woodley

Theunis Piersma brings his message to Miranda . . . and to the Conservation Minister

The visit late last year of **Professor Theunis Piersma** not only allowed PMNT members to meet one of the outstanding figures in shorebird research, it also saw a masterplan for shorebird recovery presented to the Minister for Conservation Maggie Barry. **Keith Woodley** reports.

Our final speaker for the Year of the Godwit programme was Professor Theunis Piersma, who sits at the centre of an extensive worldwide nexus of shorebird research. While based in the Netherlands, his global reach is clearly evident in our flyway: wherever you look his name seems to turn up.

Our knowledge of species such as Red Knot, Great Knot and particularly Bar-tailed Godwit increased immensely in recent years through work by Phil Battley and Jesse Conklin, both of whom completed PhDs supervised by Theunis.

He is involved with current research projects based out of Northwest Australia. As chair of the Global Flyway Network he is extensively engaged in the Yellow Sea region, both with students at Chinese universities and

through the work of Chris Hassell, Adrian Boyle and Matt Slaymaker on the Luannan Coast of Bohai Bay. It is the work of this GFN team that since 2008 has documented the critical importance of that stopover site for Red Knots, and which is now informing our joint efforts to preserve the area. He also works closely with colleagues in Alaska.

Theunis and his partner Petra arrive in late November, and we greet them as old friends. Petra is just as interested in the spoonbill tree opposite the Stilt Ponds as in the shorebirds. Indeed, it was spoonbills that determined their original itinerary for this visit and the reason we had to change the date of the Shorebird Centre function.

She had planned to attend a spoon-

bill group workshop in Tunisia before events in that country led to its deferment and changes of plan.

For several years now many people have argued that habitat loss around the Yellow Sea is the likely driver of shorebird population declines in our flyway. However, in my talks I have usually been careful to say the principal driver of decline 'appears to be' or evidence 'strongly suggests' this to be the case.

Despite an increasing consensus among many researchers, it has been difficult to produce the cause and effect chain that losing tidal flats in East Asia directly leads to shorebird population declines in Australia and New Zealand. The large-scale phenomenon we are concerned with – annual cycles

and migration routes that encompass a third of the globe – make finding the proof exceedingly difficult. But recent analysis of many data relating to three species (Bar-tailed Godwit, Red Knot and Great Knot) migrating out of northwest Australia, soon to be published, considerably strengthens the case that the Yellow Sea region is indeed the problem.

Those attending Theunis's talk at the Shorebird Centre on 29 November heard compelling evidence.

What is already known?

- Species in the flyway showing declining numbers are ones depending on the Yellow Sea

- Declining numbers are not explained by habitat loss in Australia

- While breeding success varies from year to year depending on variable conditions in the Arctic, there has been no widespread decline in breeding success.

The latest data analysis adds further evidence:

- Decreases in survival occur only during the season birds are using the Yellow Sea.

- Decreases in survival similarly occur in species with very different breeding grounds but which all share coastal staging areas in the Yellow Sea

- The *menzbieri* population of godwits that use the Yellow Sea during both northward and southward migration is declining at a greater rate than the *baueri* population that only stops there northbound.

- Intertidal habitat loss in the area and in the season with reductions in survival is ongoing.

The conclusion to the study is blunt. 'This study adds to an increasing body of evidence that habitat loss along the Yellow Sea shores explains the widespread declines in shorebird numbers along the EAAF and threatens the long-term prospects of several long-distance migrating species. To halt further losses, the clearance of coastal intertidal habitat must stop now.'

Untangling the Knot is a nature documentary featuring the annual cycle and migrations of two Red Knot populations on opposite sides of the Atlantic that originally screened in the UK in 1994. It has been a final night feature of every field course for the

last 17 years.

A number of now familiar names and faces from the shorebird world appear in it. One is Jan van de Kam - my campmate at Old Chevak in 2008 - who contributed most of the photos for *Godwits: long-haul champions*.

Another is a younger version of Theunis. My mention of this piques his curiosity for he has not seen it since it was first broadcast. Petra is also curious for it predates her meeting Theunis. As we begin to watch it my own curiosity focuses on how well (or not) it stands up to contemporary scrutiny. Remarkably it seems to do so very well: while some sections are clearly dated, most of the story that is told is still relevant, still ties together so many of the themes we cover during the field course.

On the day of his talk at the Shorebird Centre we have a surprise for Theunis. In attendance are Joe and Sietse de Jong, who farm on the Hauraki Plains near Te Aroha. They have been PMNT members for many years. But it is Joe's origin that is more significant for, like Theunis, he is from Friesland in the north of Holland.

In my experience, admittedly based on a very small sample size, Friesians are intensely proud of being Friesians. I enjoy standing at the counter watching the two of them connecting – in a language that underlines another

interesting feature: English is their third language.

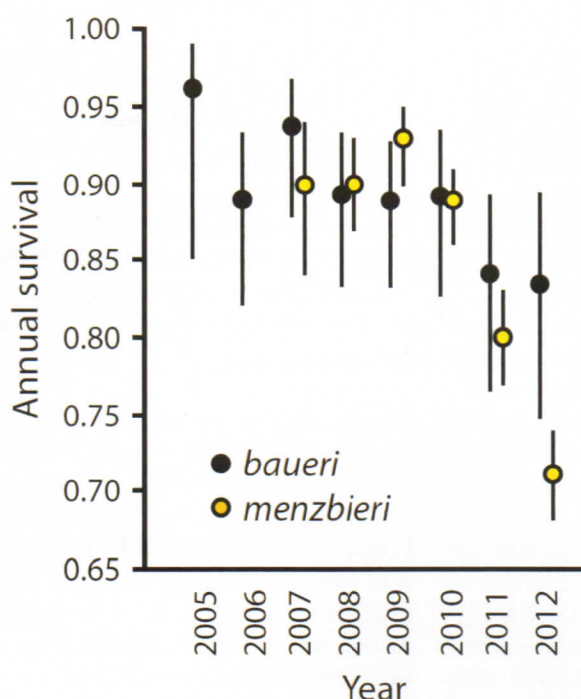
When Pavel Tomkovich and Lee Tibbitts were here we scheduled events elsewhere in the country, but there is no road trip this time, other than to Auckland University Tamaki campus.

There, Theunis gives an overview of many years of knot research, pulling together numerous strands of observations and countless field data. He speaks for just on two hours, yet it seems like a very short two hours. It is a class performance that deserved a larger audience.

During last year's visit to the Shorebird Centre by Chinese Ambassador Wang Lutong and Conservation Minister Maggie Barry I happened to mention to the minister that the chair of the Global Flyway Network was coming to New Zealand. The Minister expressed interest in taking the opportunity to have a chat with him and a meeting was subsequently set up.

To take full advantage of the opportunity, Theunis set out a briefing paper for the Minister – with a bit of input from me - entitled, 'A ten year programme for shorebird recovery, including New Zealand Red Knots and Bar-tailed Godwits' which he duly presented. This is it:

Since 2008 a consortium of scientists representing research institutions



Conklin, Lok, Melville, Riegen, Schuckard, Piersma & Battley (2016) *Emu* in press.

from Netherlands and China have concentrated research efforts on the ecology of the remaining mudflats at Luannan, northern Bohai Bay, and their use by Red Knots from non-breeding destinations in New Zealand and Australia (mainly the subspecies *piersmai*). This work was possible due to considerable research investments in personnel, fieldwork and advanced equipment from both the Dutch side (700,000 Euros) and Chinese side (200,000 Euros).

The work has established that the Luannan foreshore is a key site for the entire populations of both *rogersi* and *piersmai*, because it reliably offers good food resources (small shellfish), thus enabling the Red Knots from New Zealand and Australia to achieve adequate fuelling at least during northward migration (the southward staging has remained unstudied).

At the same time, the demographic work (focussed on Northwest Australia and Bohai Bay) has shown that from 2012 the summer survival of Red Knots has become dangerously low, to the extent that this species which is still numbered in the tens of thousands, is likely to become rare (numbering in the 1000s). The Red Knot population in New Zealand is now only half the size it was 20 years ago, confirming a rapid, widespread decline.

Safeguarding intertidal habitat and adjacent salt pans on the Luannan coast



CONSERVATION MINISTER Maggie Barry.

in Hebei Province is unquestionably critical, while at the same time, in view of the reduced survival in the presence of these habitats, we need to acknowledge that additional key areas along the flyway need to be found and safeguarded as well.

Pukorokoro Miranda Shorebird Centre, in association with the Global Flyway Network, proposes the following three-pronged approach to help diplomatic and political initiatives at national and international levels to turn around the fate of the Red Knots, Bar-tailed Godwits and other threatened long-distance migrating species relying on the Yellow Sea shores:

- Continuation during 2016-2025 of the monitoring of the Luannan

foreshores (ongoing since 2008) during northward migration (this includes doing bird counts, an intensive re-sighting programme of individually identifiable birds and the monitoring of the intertidal shellfish).

- Establishing a programme of hemispheric observation of shorebirds movements using the latest satellite tagging technology (from 2016 enabling the following of shorebirds as small as Red Knots) - this should lead to the discovery of additional critical sites on the flyway to help explain the low current summer survival rates and make the protection network more effective.

- Establishing a platform to make the individual tracking data available in real time to the general public, based on the successful 'follow-the-godwits' site developed within the citizen's initiative King of the Meadows in the Netherlands (<http://volg.keningfane-greide.nl/king-of-the-meadows-transmittersite/>). In this platform to achieve a healthy and sustainable future of Dutch dairy farmland, the Black-tailed Godwit (which entirely relies on this habitat for breeding, and is now the National Bird of The Netherlands) acts as ecological ambassador and central character of the narrative.

- Re-investments in the individual marking programmes of Red Knots and Bar-tailed Godwits in New Zealand enabling faster and more robust assessments of recovery parameters such as annual survival, recruitment and population size. This could involve post-doctoral or PhD students to work up the demographic and tracking data under direct supervision of Dr Phil Battley at Massey University, Palmerston North.

With regard to Red Knots, data obtained will provide guidelines for effective management of the reserve area for this species and other shorebirds on the Luannan coast. They should also inform public awareness measures engaging with local stakeholders as to the reasons why the Luannan coastal reserve is so important. A publicly accessible portal for tracking migrating birds will be a potent tool towards achieving this objective.

After meeting the Minister, Theunis was pretty happy with the hearing she gave him . . . so fingers crossed. 