

Tattler

Newsletter for the Asia Pacific Flyways & Australian Shorebirds 2020 Project

No. 40 July 2016

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Grey Plover chick (Colville River Alaska)
(Photo courtesy Aaron Gottesman)

Editorial

One of the most effective programs for communicating the shorebird story happened over four episodes on ABC Radio National recently. Presenter Ann Jones, in conjunction with BBC Wildlife, captured the wonder of shorebird migration, the delight in hearing the birds' agitated cries as they prepare for migration, the sorrow of researchers documenting continuing population declines, the awesome persistence of shorebirds whose survival depends on their own determination, the complexity of conservation issues across international boundaries... This series makes compelling listening and can be downloaded as podcasts from the ABC website at the following link: <http://www.abc.net.au/radionational/programs/offtrack/flying-for-your-life-1/7461802>

One of the highlights of recent research in Australia is the tracking of Grey Plovers – a very public endeavour with crowd-sourced funding providing transmitters for plovers in northwest Australia while government funding provided transmitters for plovers in South Australia. The birds' progress has been shared openly on two websites and a couple of Facebook pages (see page 4), and revealed that the South Australian plovers have flown further than their counterparts in northwest Australia, selecting breeding sites on Wrangel Island, beyond Siberia. It will be wonderful to watch the return journeys over the next few months.

Liz Crawford, Editor

Contributions are welcome and should be sent to: tattler@awsug.org.au

Grey Plover tracking from Australia in 2016



Figure 1 – Migration routes of Ecosure (white), Mymi (red), Nad (blue) and Charlie (orange). The names do not indicate the sex of the birds but have been suggested by major donors to the project.

The migration routes of four birds tracked from Broome in **northwest Australia** are shown in **Figure 1**. After their stop-overs in the Yellow Sea, two of the birds have flown virtually non-stop some 3000km to breeding locations in Arctic Siberia. Unfortunately transmitters on Ecosure and Mymi ceased transmission during migration towards the Yellow Sea. Distances travelled by the four Grey Plover since departing Broome:

Name	Leg Flag	Distance travelled
Ecosure	LLA	4,650km
Mymi	LLH	4,300km
Nad	LLJ	10,325km
Charlie	LLK	10,405km

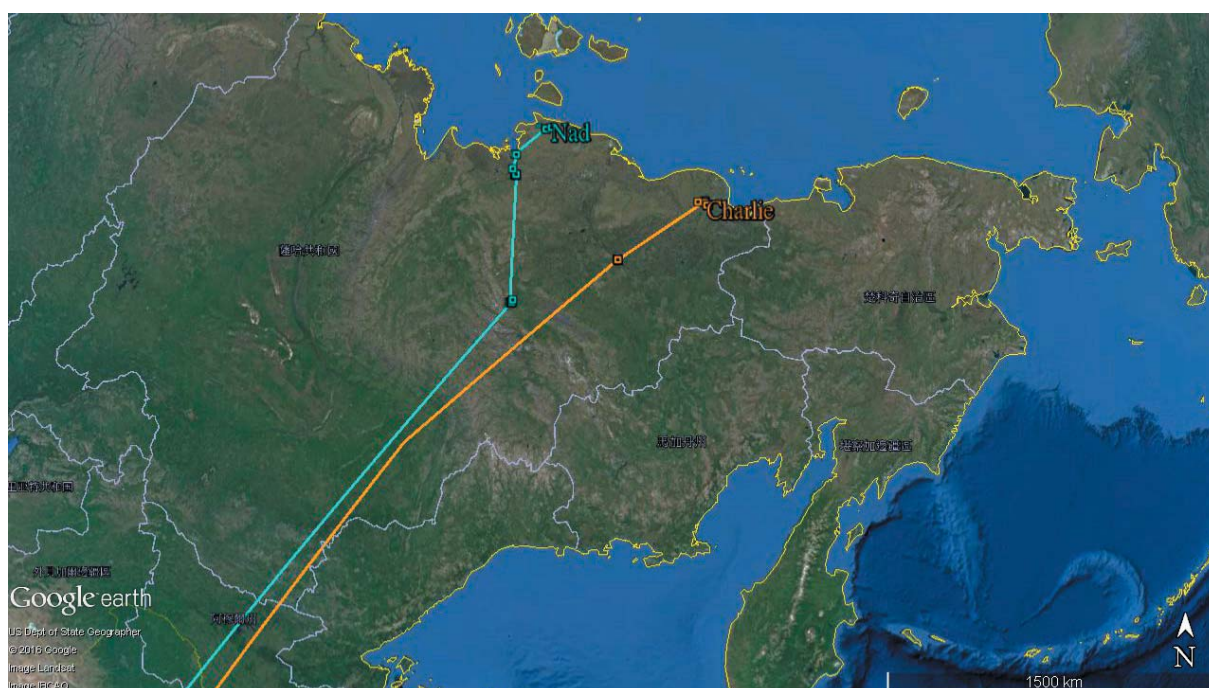


Figure 2 – Nad and Charlie's breeding sites

Grey Plover tracking from Australia in 2016 cont.



Figure 3 - Nad's breeding location near freshwater Lake Bustakh in the Sakha (Yakutia) Republic, Russia, just 35km from the north coast.

Unfortunately Nad's transmitter failed to send signals back from the breeding ground, but Charlie's signals continued allowing researchers to pin-point the exact nesting location. In **Figure 4**, the red circles indicate the accuracy of each signal: the smaller the circle, the higher accuracy of the signal. After overlapping the "potential area" cover by the signals, we can locate the nesting area (shaded in white).



Figure 4 - Charlie's breeding location in the Sakha (Yakutia) Republic, Russia

About 600km away from Nad, Charlie is breeding at a relatively more inland location about 75km from the coast. The breeding site is surrounded by three small lakes less than 1sq km in area and close to a river about 3km in the west.

Additional excellent information on the NW Australia birds is available on the BirdLife Australia website:
<http://www.vwsq.org.au/Grey-Plover-tracking.html>

Grey Plover tracking from Australia in 2016 cont.

Two Grey Plover are also being tracked from **South Australia**, wearing satellite transmitters put on by Maureen Christie and the FOSSE Team. This project is supported by Adelaide and Mount Lofty Ranges Natural Resources Management Board and the Australian Government-funded Samphire Coast Icon Project. Their migration routes are shown on **Figure 5**. CYA is known to be female from DNA testing of a shed feather.

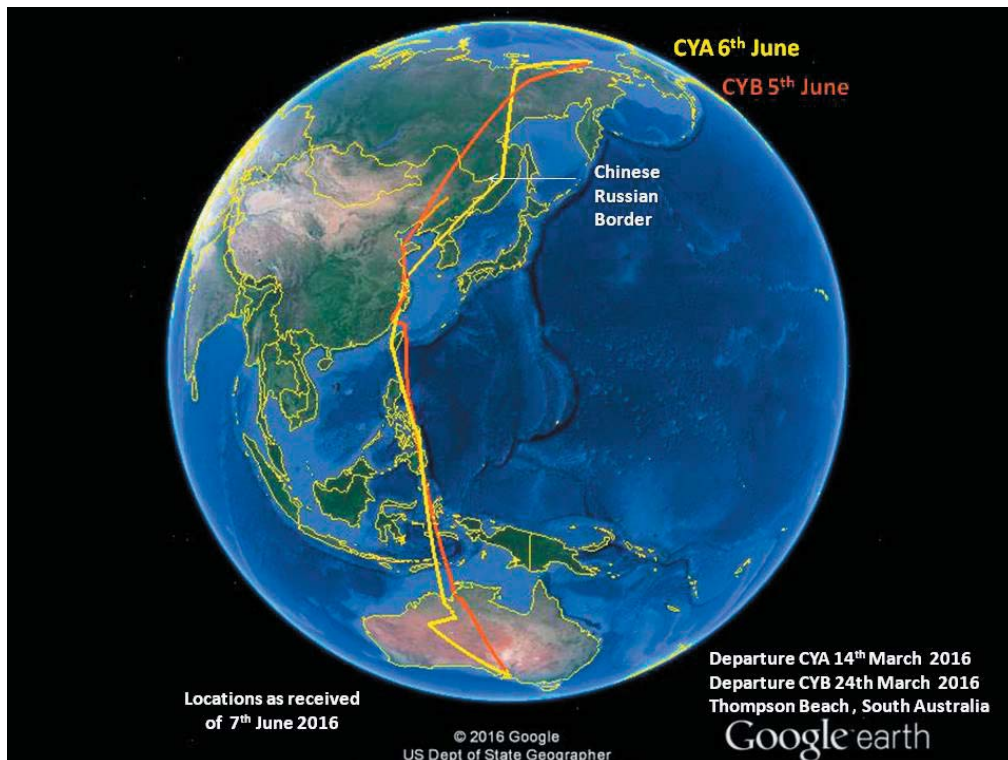


Figure 5 – Migration routes from South Australia to Wrangel Island for Grey Plover with engraved flags CYA and CYB. Although these birds spent their non-breeding season further south in Australia than Nad and Charlie, CYA and CYB are now breeding further north on Wrangel Island, sharing the area with Snow Geese, Reindeer and other Arctic wildlife.

The two birds from South Australia initially touched down in the same area of northern Siberia but then, after a short stop, both proceeded to fly out over the Arctic Ocean to Wrangel Island – 71 degrees north, some 200km north of the Chukotka Peninsula in north-east Siberia (**Figure 6**). These are the first birds of any species from Australia which have been known to visit this remote Arctic island.



Map data is provided for public information. The presentation of data here does not constitute publication. All data remain copyright of the project partners. Maps or data may not be used or referenced in scientific or commercial publications without explicit written consent.

Figure 6 – CYA and CYB breeding locations on Wrangel Island.

Additional excellent information is available on the VWSG website for the South Australian birds: <http://www.vws.org.au/Grey-Plover-tracking.html>. There is also a Facebook page for the SA Grey Plover: <https://www.facebook.com/people/Grey-Plover/100009541537136>. Posts are also made to <https://www.facebook.com/WaderQuest>

The Grey Plover project team:

Katherine Leung, Clive Minton, Ken Gosbell, Chris Hassell, Grace Maglio, Inka Veltheim, Maureen Christie, Tony Flaherty, Reece Pedler, Roger Standen, Roz Jessop, Graham Parkyn, Eric Miller, Ila Marks, Vivien Holyoake.

Fishing livelihoods in Jiangsu Province, China

As many readers will know, the Critically Endangered Spoon-billed Sandpiper and the Endangered Nordmann's Greenshank are two of the rarest and most threatened shorebird species in the East Asian – Australasian Flyway (EAAF), and their stopover habitat in the Yellow Sea faces some of the most acute development pressure in the region. The Conservation Leadership Programme's (CLP) *Stopover Ecology of Spoon-Billed Sandpipers and Nordmann's Greenshanks* project has been working over the last year to improve our knowledge about these two species on the south Jiangsu coast in China (often referred to as the Rudong area) during southward migration.

The project has also engaged with the local community, including local fishermen, as part of an awareness-raising effort to raise the profile of these species in the region. From September to December 2015, the CLP team distributed a questionnaire developed for local fishermen who harvest resources from the same intertidal zone in the Rudong area that shorebirds use.

The survey aimed to characterise mudflat resource use amongst fishermen, and find out how important mudflat work is to their livelihoods, but also to characterise their knowledge and views about shorebirds. One central question is whether mudflat users broadly view shorebirds as 'friends' (we share the same mudflat resources, so mudflat habitat loss threatens us both) or 'foes' (we are competing for the same mudflat resources). The purpose of the survey was to use results to inform current and future collaboration and awareness-raising strategies involving conservation interests and fishermen.

About 1,500 copies of the questionnaire were distributed, and a total of 208 completed surveys were received. The surveys were done with fishermen from three areas: the Dongling area (CLP project members interviewed these respondents directly at a local fish market), and the small towns of Fing Li and Shiping (mudflat owners completed these surveys themselves).

Respondents were largely male (71%), and 65% were aged 40-59. A variety of different products were being harvested from the mudflat (see **Table 1**). The seaweed species *Porphyra tenera*, which is not used by shorebirds, was the single most common resource harvested, although a significant amount of resource overlap did occur with fishermen also harvesting hard clams, marine worms, mudsnails and other aquatic products which could be potential food sources for shorebirds. Seaweed harvest was overwhelmingly done at Feng Li & Shiping, with very little seaweed harvest at Dongling, where resource overlap with shorebirds appeared higher.

Results showed that dependence on the mudflat for livelihoods was very high; 85% of respondents said that they did not have another job and 86% of respondents said they were expecting to work on the mudflats next year. Interestingly one of the few respondents who commented on why they wouldn't work the mudflat next year said that it was due to declining resources on the mudflat, though this did not emerge as a widely held view. Almost all (95%) respondents made at least 1000-3000 RMB per month from the mudflat (equivalent to \$200-600 AUD) with many (38%) making significantly more, a substantial income amount in the regional context also indicating fairly high dependence.

Respondents were asked whether the animals of the mudflat, including birds, would affect their income. Some (17%) said that there was some small impact from animals and a few (2%) said there was great impact, mostly citing birds eating shrimps (sometimes only when sick) and damaging nets. Yet 55% said they felt animals made no impact and another 26% said they did not know, indicating that there wasn't a strong or pervasive perception of resource competition amongst those interviewed.

On the knowledge side, 77% of respondents said they knew that there are protected birds on the mudflat and 40% knew at least some bird names. Of the 84 respondents who named birds, 38 named Spoon-billed Sandpiper and 32 named Saunders' Gull (a threatened gull that has also received significant conservation attention), suggesting that public awareness raising is already bearing fruit (though sadly no one named poor old Nordmann's Greenshank).

On the whole, these preliminary questionnaire results suggest that there is strong potential to align community fishermen with shorebird preservation interests because they are highly dependent on the same habitat as shorebirds, don't appear to hold strongly negative views of shorebirds, and are already familiar with threatened species. This commendable effort by the CLP team has opened the way to conduct additional survey and outreach work with resource users in the Rudong area.

On a personal level I find these results extremely useful and interesting, having just commenced PhD research that will take a multidisciplinary approach combining socioeconomic studies, shorebird ecology and land-use planning to look for innovative ways to approach shorebird habitat conservation in the Yellow Sea. I'm enthusiastic to see how we can work together with the men and women who work both on the mudflat and surrounding aquaculture ponds to improve habitat outcomes for the threatened shorebirds of our flyway.

Table 1: Mudflat resource use by fishermen who completed the CLP questionnaire (N=207)

Resource	% of total responses	Potential shorebird food?
<i>Meretrix meretrix</i> [hard clam sp.]	24%	Yes (small individuals)
Polychaetes [marine worms]	1%	Yes
<i>Porphyra tenera</i> [seaweed sp.]	37%	No
<i>Bullacta exarata</i> [mud snail]	14%	Yes
<i>Sinonovacula constricta</i> [razor clam]	5%	Yes (small seedlings)
Other aquatic products	3%	Sometimes
Fishery products	16%	No

Fishing livelihoods in Jiangsu Province, China cont.



Above:
A fisherman with his harvesting tools on the Rudong mudflats in China (Photo Liu Siyang)

Right:
Fishermen who participated in the CLP project questionnaire in Jiangsu province (Photo CLP Project)



Micha Jackson

University of Queensland

Written with input from Jing Li and Jimmy Choi and on behalf of the CLP *Stopover ecology of spoon-billed sandpipers and Nordmann's greenshanks* project

Over-summering waders in Dongtai-Rudong area, Jiangsu Province, China

Dongtai-Rudong coastal area on the west side of the southern Yellow Sea has been recognised as a very important staging/stopover site for many wader and other waterbird species. Casual and regular surveys have been done in the area since July 2008.

There are three main wader sites: Tiaozini, Dongtai in the north; Yangkou Fishing Harbour (Yangkou for short) in the middle; and Dongling, Rudong in the south. We started birding at Yangkou in 2008 and have done extensive surveys there up to 2016. Yangkou is where birders often stay, as Australians Robert Bush and Tom Clarke did (see *Tattler* No.33 July 2014 and *Tattler* No. 37 October 2015 respectively). However, Dongling and Tiaozini now attract more attention as the habitat at Yangkou is no longer good, due to reclamation, invasion by Smooth Cordgrass (*Spartina*), poaching and potential pollution from chemical industries on the reclaimed land. In 2016, in the China Coastal Waterbird Census, a count done by volunteers on a monthly basis, I deleted Yangkou but added Tiaozini as a regular survey site. Thus Tiaozini will be surveyed every month. Before 2016, Tiaozini was also extensively surveyed and wader banding

was done in September 2015. Although there have been many exciting findings e.g. <1000 Nordmann's Greenshank and 100-200 Spoon-billed Sandpiper, the focus was in spring and autumn.

On 16 July 2015 I recorded six Spoon-billed Sandpipers at **Tiaozini**. Two of them were adults which hadn't started any wing moult yet, which means they had probably just arrived a few hours before. These may have been failed breeders coming back much earlier than successful breeders which arrive in mid to late August. The other four were aged as second calendar-years, with photos showing them in wing moult.



Second calendar-year Spoon-billed Sandpiper in wing moult on 16 July 2015. (Photo by Zhang Lin)

Over-summering waders in Dongtai-Rudong area, Jiangsu Province, cont.

The following year, on 21 June 2016, I found at least six Spoon-billed Sandpipers at Tiaozini. Five of them were aged as probable second calendar-years on plumage. For two of these birds, this conclusion was supported by colour flags put on them in the Head-start Project. One had a white flag engraved X7, a head-started juvenile in 2015. It had at least 50% breeding plumage. The other had a lime flag on its right tibia but I didn't read the engraving. This would have been banded as a wild chick. It had only (at most) 20% breeding plumage. The sixth individual had almost full breeding plumage and a white flag engraved X8. It was head-started in 2014 and had been seen several times from August to October in 2015. Then it was reported wintering on Leizhou Peninsular, Guangdong Province in south China. In its third calendar-year, I expected it to go back to Chukotka to breed. Due to reasons unknown, it didn't go to the breeding ground and just moved north to Tiaozini in June 2016. When observed, I thought it had only one leg, the one with colour marks. Being one-legged may cause it difficulty in feeding and prevent it from going to breed. But it's always difficult in the field to confirm if a wader really has only one leg or if it just hides a leg.



Spoon-billed Sandpiper white flag engraved X8 on 21 June 2016, together with a probable second calendar-year bird. (Photo by Qian Feng)

Besides the six Spoon-billed Sandpiper at **Tiaozini**, there were 180 Bar-tailed Godwit including one banded at Chongming Dongtan Nature Reserve, Shanghai engraved EH (probably second calendar-year), one Nordmann's Greenshank (second calendar-year), 780 Great Knots (mostly second calendar-year) and 700+ Saunders' Gull as summer breeder and 140 Far Eastern Curlew in southward migration.

On 22 June 2016 I surveyed **Dongling** but didn't find any Spoon-billed Sandpiper. Records worth mentioning include 450+ Far Eastern Curlew, 500+ Saunders' Gull (no breeding nearby, maybe failed breeders as egg collecting often happens in their breeding colonies) and 1000 Common Tern breeding.

On 1 and 3 July 2016, we had bad weather at **Tiaozini** but we still managed to see at least two Spoon-billed Sandpiper on 1 July and at least two on 3 July. Both birds on 1 July had 20% breeding plumage. One of them had a lime flag on the right tibia. They might be the same two of the six seen in June.

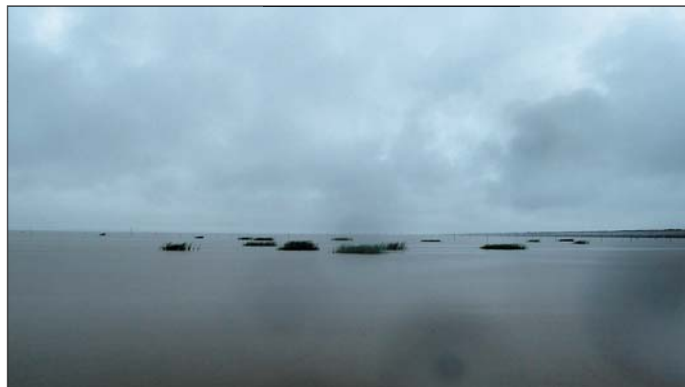
On 3 July, one had 20% and the other had 50% breeding plumage. They might also be two of the six seen in June. So in total we saw at least three of the

Although we were very unlucky with the weather, there were some obvious bird movements. By early July there were fewer Far Eastern Curlew while the number of Eurasian Curlew reached 100+. The hundreds of White-winged Terns in June had almost all gone. Immature Black-faced Spoonbill increased from two in June to nine in July. Two Chinese Egret in breeding plumage were new in July. On 3 July, all the mudflat was inundated and when we drove along the seawall, we saw one Dunlin in breeding plumage roosting on the seawall by itself, instead of flying into the aquaculture ponds to join the other roosting waders. When we approached, it just hopped a few metres and landed in the grass on the other side of the seawall. Later we met a solitary Grey Plover in breeding plumage on the seawall. Its wings were drooped, a typical sign indicating an exhausting flight.



Spoon-billed Sandpiper, a probable second calendar-year with a lime flag on the right tibia on 1 July 2016. (Photo by Qian Feng)

Tiaozini and maybe more sites in the Yellow Sea (more surveys are needed) can play an important role in supporting young Spoon-billed Sandpipers in their first and second calendar-years. Thus it is worth trying to have some conservation efforts almost all through the year instead of just in spring and autumn.



Patches of invasive Smooth Cordgrass *Spartina* at the Tiaozini mudflats, Rudong area north of Shanghai, which has emerged as a migration stop-over and over-summering site for the critically endangered Spoon-billed Sandpiper. (Photo by Magnus Persmark, Eugene, USA)

Thanks for support from birders and funding providers in projects done by China Coastal Waterbird Census and on the Spoon-billed Sandpiper in China. Hopefully there are more facts to be discovered.

Zhang Lin

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Cannon-netting shorebirds at Broome Bird Observatory in June 2016

La Trobe University, Broome Bird Observatory (BBO) staff and experienced volunteers rallied out the front of the main office of the BBO where Chris Hassell, Global Flyway Network (GFN) ornithologist, met us for the great shorebird cannon-netting briefing. We were to be netting wild shorebirds to band them in order to continue to build on the huge dataset accumulated by AWSG and GFN. The hope is to continue to deliver sound, long-term science that can influence government policy and greater conservation. Chris's delivery was short, sharp and military in his instructions and made it clear there was no time for civilities. We were to be putting the shorebirds under some degree of stress so it was of utmost importance we were agile and deft in carrying out Chris's instructions. If Chris said jump you jumped! This attitude at first caught me a little off guard as the typical conservation tone is saccharine and passive. Having said that Chris's style did give me confidence in his experience and expertise.

We were led down a narrow goat track and ushered into a small nook of sheltered vegetation just beyond the fore-dune. There we were told to wait quietly and hidden as the final adjustments were being made for the count-down of the cannon firing. We could peek out and see through the vegetation in certain spots and see a couple of hundred shorebirds wading and fraternising on the shore. Apparently there were volunteers on opposing beaches 'twinkling' other shorebirds onto our immediate beach in order to increase the catch size. Time soon passed and the heat intensified; we would from time to time hear a murmur on the radio and sit up straight but it would be just a signal to wait on, raptors overhead. The timing had to be right, the suspense was building. Finally after a few false starts we hear over the walkie-talkies "Positions on the ready", we all tensed up, this felt like a para-military operation.

3... 2... 1... 'FA-DHOONK!'

The cannons exploded with an almighty boom and all hell broke loose as everyone scrambled through the fore-dune onto the beach where we formed a powerful cavalry charge. Twitchers were falling left, right and centre, hats went flying, thongs busted plugs but none of that mattered as the cacophony of trapped birds got louder and the urgency to get them out of the net and into the pre-set, shaded cages was imminent.

Species captured were:

26/06/2016								
SPECIES	NEW	RETRAP	Age 1 1st year of life	Age 1+ 1st year of life or older	Known Age 2	Age 2+ 2nd year of life or older	Age 3+ 3rd year of life or older	TOTAL
Bar-tailed Godwit	34	2	27	0	1	8	0	36
Great Knot	175	3	150	0	9	19	0	178
Gull-billed Tern <i>affinis</i>	19	0	19	0	0	0	0	19
Gull-billed Tern <i>macrotarsus</i>	12	6	0	0	0	18	0	18
Red Knot	31	1	22	0	9	1	0	32
Whimbrel	2	0	2	0	0	0	0	2
TOTALS	273	12	220	0	19	46	0	285

Chris went into action barking orders while everyone surrounded the net and employed his instructions. It was at first a little distressing to see all the birds in the net, especially as some were scrambled over by other birds. However the whole situation, actually capturing wild shorebirds with a cannon net was so surreal I didn't seem to care so much for the birds' discomfort as I was overcome by the intense atmosphere.

The shorebirds were quickly handled into boxes respective to their species and then taken to the long open air shade-hut. Under the hut the shorebirds were taken out of their boxes and had their biometric data recorded, banded and set free as quickly as it was possible.

Considering we recorded a total of 285 birds the 'processing' took some time but it was impressive to watch the confidence and adept skill at which the BBO Staff and volunteers handled and examined the birds, especially some of the more aggressive terns who had a penchant for the webbing between one's thumb and index finger! The re-trapped terns were 6+, 10+, 14+ (x2) and 15+ (x2) years old. The ages in the table relate to our aging of birds in the hand.

The shore birds we tagged were not preparing to embark on their great migration as they'd missed the departure date, late March/early April. These waders were in fact still juvenile 1-2 years and still maturing. The benefit of aging the birds at the juvenile stage means they can be accurately aged if they are captured in the coming years. Although it is more likely that the birds' ages will be 'recorded' by resightings of them and their individual engraved flags or colour-band combinations. Red and Great Knots and Bar-tailed Godwits had a tiny blood sample taken for DNA sexing and health studies.

As we recorded the birds under the huts Adrian Boyle ornithologist explained to me the plight of the shorebirds due to habitat loss and consequently their numbers were in decline. The reclamation of the Yellow Sea is seeing valuable mud flats being destroyed for urban development in China and South Korea. Previous research from counting and cannon-netting at the BBO and around Australia has seen the status of the shorebirds recently reclassified in legislative protection in Australia. Eastern Curlew, Curlew

Cannon-netting shorebirds at Broome Bird Observatory in June 2016 cont.

Sandpiper, Bar-tailed Godwit (subsp. *menzbieri*) and Great Knot are now classified as critically endangered. The key struggle however is to see cooperation for conservation on an international scale.

The day was incredibly demanding but gave the students a valuable insight into the citizen science that is required for shorebird conservation. The setup of

the cannon-netting and research wouldn't be possible without the selfless passion of the BBO volunteers.

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Edited by Chris Hassell

Fascinating flag sightings from the AWSG Database Manager

First Mongolian-flagged wader seen in Australia

On 13 March 2016, Paul Barden saw a Red-necked Stint *Calidris ruficollis* at Pine Creek, Northern Territory, Australia, which is the first Australian sighting of a Mongolian-flagged bird reported to the AWSG Leg-Flag Sighting Operator. The resighting was a distance of about 10,000 km from the marking location in northern Mongolia.

Dr Gombobaatar Sundev from the Mongolian Ornithological Society contacted me last year to say they had begun using the EAAF colour code for Mongolia of blue/green so it was of great interest to be able to report this sighting.

It complements 23 sightings of three species reported to the AWSG of Australian-flagged birds in Mongolia between 1999 and 2015. All these reports were from eastern Mongolia except an Asian Dowitcher from NWA that was reported from the western corner at Airag Nuur in the Great Lakes Depression.

Apart from two reports of Curlew Sandpipers in July/August 2015 at Gun Galuut Nature Reserve, all other sightings were of Red-necked Stints. All these, except three from NWA, were of Victorian-flagged birds. Note that as these are not identifiable as individual birds, some of the sightings could be of the same bird when they are from similar places and similar times. However, there were reports from nine different years and at least once there were three flagged stints seen together (in 2000).

Travelling Companions

Two Bar-tailed Godwits with orange flags engraved PL and TL were sighted on the same beach in Arao, Japan on 26 April 2016. These birds were both captured and flagged at Manns Beach, Victoria on 1 February 2011. They were both 3+ at the time.

They had been seen in Japan at the same area in May 2011 (TL) and May 2015 (PL) so they regularly migrate through Japan on northward migration.

First Victorian-flagged Little Stint seen overseas

There have been nine documented Little Stints *Calidris minuta* banded by the VWSG since 1978. This is partly due to the rarity of these birds going to Victoria but also due to the difficulty in identifying them apart from Red-necked Stint *Calidris ruficollis*, when in non-breeding plumage.

However, when in breeding plumage they are more readily identifiable and in April this year, such a bird was photographed at Mai Po in Hong Kong and identified as a Little Stint carrying an orange flag. This is the first time a Victorian-flagged Little Stint has been positively identified away from the banding site. It was seen and photographed by John and Jemi Holmes.



Little Stint photographed in Hong Kong by John and Jemi Holmes.

Roger Standen

Manager, AWSG Leg-flag Sighting Database

'Circle' - a children's book

Circle traces the flight of the Bar-tailed Godwit, the endangered Australian migratory shorebird that follows ancient pathways from Australia and New Zealand to the Yellow Sea of China and Korea, then to Alaska, and back south over the course of a year. Using entrancing collages and lyrical prose, Jeannie Baker tells their story in a children's picture book. During the ten years spent researching the godwits, Jeannie flew to the tidal flats of the Yellow Sea where godwits gather in vast flocks to rest, feed and fatten up ahead of the journey further north. She also camped with bird scientists in the remote Alaskan tundra breeding grounds. Any artist who does all this so the reader can get the true feel of the godwit's journey has to be a truly genuine and motivated person, says Phil Straw. There is hope for the godwits in Jeannie's conservation message directed at a younger generation. *Circle* is available on line and at all good bookstores.

World's oldest tagged Terek Sandpiper discovered in Belarus

It was a regular day in the field for ornithologists at the birds' ringing station in the Turau Meadow, Belarus on 13 May 2016. That is, until they caught a Terek Sandpiper.

While this is cause for excitement in itself (the species is rare in Belarus; there's even a sculpture of it in the neighbouring town of Turov), what really caused researchers and birdwatchers to take notice was the band on the bird's leg: it showed that the bird was 17 years old, the oldest of its kind in the world, with 200,000 kilometres of flight under its belt (or wing).

Ornithologists from the Academy of Sciences of Belarus discovered that this Terek Sandpiper was banded as a chick in a meadow near the village of Zapesochye on 21 June 1999 – the year the Turau Meadow ringing station was founded. Since then, 'meetings' have occurred between the bird and ornithologists during re-catching events in 2005, 2011 and now in 2016.

Before this discovery, the known maximum age of a tagged Terek Sandpiper was 16 years (that bird was found in Finland). The Important Bird and Biodiversity Area (IBA) of Turau Meadow seems to be a favourite spot for the seniors of the species: recently, two other Terek Sandpipers – 14 and 15-year-old birds – were caught there, said Pavel Pinchuk, director of the Belarusian birds ringing centre.

The 17-year-old Terek Sandpiper again draws our attention to the banding of birds to learn more about them and their migration patterns.

In recent years, there have been more and more opinions that banding as a way of studying birds is becoming outdated and is no longer effective enough. Metal bands are being replaced by modern equipment.

However, any transmitter fixed to birds and transmitting signals will never stay alive as long as a simple band; the lifespan of a transmitter is usually only a few years and it can fall prey to technical issues. Finding a bird with a 17-year-old band still attached to it shows that this method's importance cannot be underestimated.

The fact that this old Terek Sandpiper came back to the same spot more than once for the last 17 years shows that it is vital for birds to have a safe site that they can return to. The Turau Meadow IBA is home to thousands of waders and other wetland birds.

APB (BirdLife in Belarus) is working hard to ensure it stays that way: a management plan has been developed for this territory and volunteers clear the flood plain of the River Pripyat of bushes every summer. The Waders' Festival also takes place on 1 May every year, and it raises awareness among locals and city visitors about the importance of preserving this unique avian habitat.

Sanya Khetani-Shah

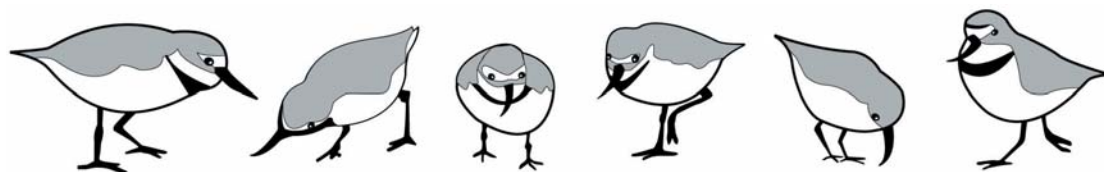
24 June 2016

Source: <http://www.birdlife.org/europe-and-central-asia/news/worlds-oldest-tagged-terek-sandpiper-discovered-belarus>

Doug Watkins responded:

I think the East Asian-Australasian Flyway could claim to match this finding:

A Terek Sandpiper with band no. 05183154, banded in April 1994 at Beaches Crab Creek Road, Roebuck Bay, Broome, WA was re-caught at the same place in April 2011, after a period of 16 years and 11.1 months. This data comes from the Australian Bird and Bat Banding Database which can be searched at: <https://www.environment.gov.au/.../search-abbbs-database>



Australasian Shorebird Conference Auckland New Zealand 1-2 October 2016

hosted by **Pukorokoro Miranda Naturalists' Trust**
at the
UNITEC Institute of Technology in Auckland

There will be two days of presentations covering a wide range of subjects relating to shorebird biology and ecology in New Zealand, Australia and the East Asian-Australasian Flyway. This will be followed by field trips to a variety of good shorebird sites around Auckland on Monday 3 October 2016.

Anyone interested in presenting a paper or poster at the conference should contact Phil Battley P.Battley@massey.ac.nz. If you are interested in sponsorship please contact us at the email below.

Keep up-to-date and register online at: www.miranda-shorebird.org.nz/asc2016

Adrian Riegen

ASC 2016 Committee Convenor email: shorebirdconference2016@gmail.com

Old shorebirds - NWA Expedition 2016

Twenty-six old birds (15 years or more) of ten different species were caught during the 2016 NW Australia expedition (see **Table**). The oldest bird, at 23 years, was a Bar-tailed Godwit. Other notable old birds were Great Knot (22+), Black-winged Stilt (22), Greater Sand Plover (21), Curlew Sandpiper (19), Eastern Curlew (18+ and 17) and Black-tailed Godwit (15+).

SPECIES	BAND	DATE BANDED	BANDING LOCATION	AGE AT BANDING	RETRAP DATE	RETRAP LOCATION	MINIMUM AGE AT RETRAP
Bar-tailed Godwit	072-33180	12/03/1994	80 Mile Beach	1	16/02/2016	80 Mile Beach	23
Great Knot	062-33249	3/04/1996	80 Mile Beach	2+	13/02/2016	80 Mile Beach	22+
Black-winged Stilt	072-55113	28/05/1994	Broome	1	21/02/2016	Broome	22
Greater Sand Plover	051-85866	23/03/1996	Broome	1	25/02/2016	Broome	21
Great Knot	062-33838	21/08/1998	80 Mile Beach	3+	13/02/2016	80 Mile Beach	20+
Greater Sand Plover	062-44070	7/09/1998	80 Mile Beach	3+	14/02/2016	80 Mile Beach	20+
Great Knot	062-43023	25/08/1998	80 Mile Beach	2+	13/02/2016	80 Mile Beach	19+
Greater Sand Plover	051-90539	3/05/1998	Broome	1	20/02/2016	Broome	19
Curlew Sandpiper	041-92766	12/08/1998	Broome	2	20/02/2016	Broome	19
Great Knot	062-71995	21/10/2001	80 Mile Beach	3+	13/02/2016	80 Mile Beach	18+
Eastern Curlew	091-24367	29/10/2001	Broome	3+	22/02/2016	Broome	18+
Great Knot	062-56631	18/07/1999	Broome	1	13/02/2016	80 Mile Beach	18
Great Knot	062-58732	1/01/2001	Broome	2+	25/02/2016	Broome	17+
Bar-tailed Godwit	072-79853	1/01/2001	Broome	2+	21/02/2016	Broome	17
Bar-tailed Godwit	072-79517	15/05/2000	Broome	1	21/02/2016	Broome	17
Grey-tailed Tattler	062-58505	2/06/2000	Broome	1	26/02/2016	Broome	17
Eastern Curlew	091-20664	15/05/2000	Broome	1	22/02/2016	Broome	17
Grey-tailed Tattler	062-76165	23/11/2002	80 Mile Beach	3+	10/02/2016	80 Mile Beach	16+
Eastern Curlew	091-24380	18/11/2002	Broome	2+	22/02/2016	Broome	16+
Great Knot	062-75779	11/05/2002	80 Mile Beach	2+	10/02/2016	80 Mile Beach	16+
Grey-tailed Tattler	052-71950	1/10/2001	80 Mile Beach	2	14/02/2016	80 Mile Beach	16
Great Knot	062-57836	31/05/2000	80 Mile Beach	1	12/02/2016	80 Mile Beach	16
Great Knot	062-74984	18/11/2002	Broome	2+	20/02/2016	Broome	15+
Black-tailed Godwit	072-81988	18/11/2002	Broome	2+	24/02/2016	Broome	15+
Great Knot	062-75782	23/06/2002	Broome	1	13/02/2016	80 Mile Beach	15
Great Knot	062-76553	3/07/2003	Broome	2+	20/02/2016	Broome	15

Clive Minton

Wader breeding success in the 2015 Arctic summer

For the last 38 years in south-east Australia and 18 years in north-west Australia the main catching programs of the Victorian Wader Study Group and the Australasian Wader Studies Group (AWSG) respectively have been oriented to obtaining an annual estimate of the proportion of young birds in the population of each of the main migratory wader species during the non-breeding season. The proportion of juveniles in catches, albeit some six months on average after these birds have first fledged, is taken as a proxy for breeding success.

Each year since 2000 the results of the 'percentage juvenile' monitoring have been published in *Arctic Birds Bulletin* and/or on the Arctic Birds website, as well as in the AWSG journal *Stilt* (Minton *et al.* 2000; Minton *et al.* 2016).

RESULTS

The 2015/2016 data is presented in **Tables 1 – 4**. In south-east Australia results are given for the usual seven main study species (**Table 1**). The Red Knot sample was again small and Sanderling also proved particularly hard to catch. Nevertheless the outcomes of the breeding season were especially clear, with five of the seven species having particularly poor breeding success. On Curlew Sandpiper and Ruddy Turnstone there was an almost complete breeding failure. In contrast, Bar-tailed Godwit had a good breeding outcome and Red Knot an especially good breeding success.

Table 1. Percentage of juvenile (first-year) waders in cannon-net catches in south-east Australia in 2015/2016.

Species	No. of catches		Total caught	Juveniles		Long term median* % juvenile (years)	Assessment of 2015 breeding success
	Large (>50)	Small (<50)		No.	%		
Red-necked Stint <i>Calidris ruficollis</i>	7	7	1904	115	6.0	16.0 (37)	Poor
Curlew Sandpiper <i>C. ferruginea</i>	1	5	206	4	1.9	10.0 (36)	Very Poor
Bar-tailed Godwit <i>Limosa lapponica</i>	0	1	30	8	26.7	18.0 (26)	Good
Red Knot <i>C. canutus</i>	0	1	15	15	100	62.5 (19)	Very Good
Ruddy Turnstone <i>Arenaria interpres</i>	1	15	305	7	2.3	9.3 (25)	Very Poor
Sanderling <i>C. alba</i>	0	1	29	2	6.8	12.2 (24)	Poor
Sharp-tailed Sandpiper <i>C. acuminata</i>	3	3	459	41	8.9	14.8 (34)	Poor

All birds cannon-netted in the period 2 November 2015 to 25 March 2016 except Sharp-tailed Sandpiper and Curlew Sandpiper to end February only and some Ruddy Turnstone and Sanderling to early April and one Sanderling catch in late April (2016)
*Does not include the 2015/2016 figures.

Table 2. Percentage of juvenile (first year) waders in cannon-net catches in north-west Australia in 2015/2016.

Species	No. of catches		Total caught	Juveniles		Assessment of 2015 breeding success
	Large (>50)	Small (<50)		No.	%	
Great Knot <i>Calidris tenuirostris</i>	8	4	1,642	93	5.7	Poor
Bar-tailed Godwit <i>Limosa lapponica</i>	4	6	194	20	10.3	Average
Red-necked Stint <i>C. ruficollis</i>	4	4	487	54	11.1	Poor
Red Knot <i>C. canutus</i>	1	4	109	3	2.7	Very Poor
Curlew Sandpiper <i>C. ferruginea</i>	2	4	281	2	0.7	Very Poor
Ruddy Turnstone <i>Arenaria interpres</i>	1	4	84	1	1.2	Very Poor
Sanderling <i>C. alba</i>	0	5	7	0	-	Very Poor

All birds cannon-netted in period 1 November 2015 to mid-March 2016

Wader breeding success in the 2015 Arctic summer cont.

Good data was collected on all the usual main wader study species in north-west Australia (Broome and 80 Mile Beach). Additionally, good samples were obtained of seven species which are not able to be caught annually for breeding success estimates (**Table 2**). Breeding success rates were extremely low for many species, with only three out of seventeen species monitored being rated 'good' or 'very good' – Broad-billed Sandpiper, Oriental Plover and Eastern Curlew. As in south-east Australia, Curlew Sandpiper and Ruddy Turnstone had almost total breeding failures, and in this region Red Knot also.

DISCUSSION

The 2015 northern hemisphere breeding season was clearly the worst recorded so far in wader populations which migrate to Australia. Most of the high-Arctic breeding species had an almost total breeding failure. The poor results, however, seemed to occur almost throughout the northern hemisphere breeding range. Even Greater Sand Plover, mainly nesting in Mongolia and northern China, had their second lowest breeding success recorded in 18 years of monitoring (**Table 4** - see next page). For Curlew Sandpipers in north-west Australia and in south-east Australia it was the lowest ever result (**Table 3**). It was noticeable that, unusually, Sharp-tailed Sandpipers fared slightly better than Red-necked Stint and Curlew Sandpipers.

The only exceptions to the widespread disastrous 2015 breeding season were Bar-tailed Godwits in north-west Australia, which had an average result, and Bar-tailed Godwits and Red Knots in south-east Australia which were classed as 'good' and 'very good' respectively. The latter two of these breed further east than all the other species, with the Red Knot spending the breeding season in the far north-east of Siberia in Chukotka and the Bar-tailed Godwit in Alaska. Presumably whatever unfortunate combination of weather conditions and predation levels which caused the markedly unsuccessful breeding did not extend to those regions.

One of the important outcomes of these long data series of the percentage of juveniles in wader populations in the non-breeding areas in Australia is that there is no apparent downward trend in annual productivity (**Tables 3** and **4** and Minton *et al.* 2005). This is somewhat surprising given the marked downward trajectory of many of these wader populations. It suggests that the decrease in population levels is entirely the result of reduced survival rates. This is

logical given that the population decreases seem to be closely linked with extensive losses of intertidal feeding habitat at the critical migratory stopover locations for most species, in the Yellow Sea. The apparent lack of a trend in breeding success rate also suggests that this parameter is not density dependent on the breeding grounds for these wader populations.

ACKNOWLEDGEMENTS

Greatest thanks are, as always, owed to the fieldwork teams of VWSG and AWSG which have persevered over many months each non-breeding season to obtain the necessary catch samples. This requires between 30 and 50 days of fieldwork by a large team (15-25 people) on each occasion, often working in less than comfortable climatic conditions. Repeated attempts sometimes have to be made to fill particularly difficult slots in the required spectrum of data.

Thanks are also due to the various Parks authorities in Victoria, Western Australia, South Australia and Tasmania who granted the necessary ethics and scientific research permits, as well as the Australian Bird and Bat Banding Scheme in Canberra.

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NWA Expedition 2017 – participants sought

The NWA 2017 Expedition will start on **Wednesday 8 February 2017 at Broome and finish on Thursday 2 March 2017, also at Broome**. The team will travel down to Anna Plains/80 Miles Beach on Thursday 9 February and return to Broome on Tuesday 21 February. 20 February will be a 'day off' at Anna Plains/80 Mile Beach and 22 February will be a day off at Broome. There will be ten catching days at 80 Mile Beach in 2017 and only six (possibly seven) at Broome.

We would like to start recruiting the team for NWA 2017 as soon as possible. Would everybody who was involved in the NWA 2016 Expedition please indicate as soon as possible whether they are likely to be able to come again next year? The greater the number of people in the team who have had previous NWA Expedition experience the more efficient it is. We shall be targeting a team of around 30 again in 2017.

Wader breeding success in the 2015 Arctic summer cont.

Table 3. Percentage of juvenile birds in wader catches in south-east Australia 1998/1999 to 2015/2016.

Species	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	Average (17yrs)
Ruddy Turnstone <i>Arenaria interpres</i>	6.2	29	10	9.3	17	6.7	12	28	1.3	19	0.7	19	26	10	2.4	38	17	2.3	14.7
Red-necked Stint <i>Calidris ruficollis</i>	32	23	13	35	13	23	10	7.4	14	10	15	12	20	16	22	17	19	6.0	17.5
Curlew Sandpiper <i>C. ferruginea</i>	4.1	20	6.8	27	15	15	22	27	4.9	33	10	27	(-)	4	3.3	40	5.1	1.9	16.5
Sharp-tailed Sandpiper <i>C. acuminata</i>	11	10	16	7.9	20	39	42	27	12	20	3.6	32	(-)	5	18	19	16	8.9	18.5
Sanderling <i>C. alba</i>	10	13	2.9	10	43	2.7	16	62	0.5	14	2.9	19	21	2	2.8	21	14	6.8	15.0
Red Knot <i>C. canutus</i>	(2.8)	38	52	69	(92)	(86)	29	73	58	(75)	(-)	(-)	78	68	(-)	(95)	(100)	(100)	58.1
Bar-tailed Godwit <i>Limosa lapponica</i>	41	19	3.6	1.4	16	2.3	38	40	26	56	29	31	10	18	19	45	15	26.7	23.9

All birds cannon-netted between 15 November and 25 March, except Sharp-tailed Sandpiper and Curlew Sandpiper to end February only and some Ruddy Turnstone and Sanderling to early April and one Sanderling catch in late April (2016). Averages (for previous 17 years) exclude figures in brackets (small samples) and exclude 2015/2016 figures

Table 4. Percentage of first-year birds in wader catches in north-west Australia 1998/1999 to 2015/2016

Species	98-99	99-00	00-01	01-02	02-03	03-04	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	Average (17yrs)
Red-necked Stint <i>Calidris ruficollis</i>	26	46	15	17	41	10	13	20	21	20	10	17	18	24	15	19	10	11.1	20.1
Curlew Sandpiper <i>C. ferruginea</i>	9.3	22	11	19	15	7.4	21	37	11	29	10	35	24	1	1.9	23	18	0.7	17.6
Great Knot <i>C. tenuirostris</i>	2.4	4.8	18	5.2	17	16	3.2	12	9.2	12	6	41	24	6	6.6	5	6	5.7	11.6
Red Knot <i>C. canutus</i>	3.3	14	9.6	5.4	32	3.2	(12)	57	11	23	12	52	16	8	1.5	8	13	2.7	16.9
Bar-tailed Godwit <i>Limosa lapponica</i>	2.0	10	4.8	15	13	9.0	6.7	11	8.5	8	4	28	21	8	7.6	17	5	10.3	10.8
Non-arctic northern migrants																			
Greater Sand Plover <i>Charadrius leschenaultii</i>	25	33	22	13	32	24	21	9.5	21	27	27	35	17	19	28	21	20	10.5	23.4
Terek Sandpiper <i>Xenus cinereus</i>	12	(0)	8.5	12	11	19	14	13	11	13	15	19	25	5	12	15	12	9.2	13.6
Grey-tailed Tattler <i>Heteroscelus brevipes</i>	26	(44)	17	17	9.0	14	11	15	28	25	38	24	31	20	18	16	19	8.9	20.5

All birds cannon-netted in the period 1 November to mid-March. Averages (for previous 17 years) exclude figures in brackets (small samples) and exclude 2015/2016 figures

World Shorebirds Day

The 3rd World Shorebirds Day is on 6 September 2016. Many of us have already saved the dates of the popular Global Shorebird Counting Program, from 2 to 6 September 2016. This is an extended weekend for counting shorebirds at multiple locations. Please save the date and spread the word.

Please find the registration page here:

<https://worldshorebirdsday.wordpress.com/2016/07/12/global-shorebird-counting-2016-registration/>

Should you have any questions, please don't hesitate to contact us at shorebirdsday@gmail.com

Best wishes, Szimi
Gyorgy Szimuly
 Milton Keynes, UK

Alaska's shorebirds exposed to mercury

Shorebirds breeding in Alaska are being exposed to mercury at levels that could put their populations at risk, according to new research from *The Condor: Ornithological Applications*.

Thanks to atmospheric circulation and other factors, the mercury that we deposit into the environment tends to accumulate in the Arctic. Mercury exposure can reduce birds' reproductive success and sometimes even be lethal. Shorebirds may be particularly vulnerable because they forage in aquatic environments where mercury is converted into methylmercury, its most dangerous form. Marie Perkins of the Biodiversity Research Institute (BRI) and her colleagues investigated the level of mercury in Alaska's shorebirds and found that some birds breeding near Barrow, at the state's northern end, have mercury concentrations upwards of two micrograms per gram of blood.

"These species already face a lot of tough new challenges, from climate change to disappearing stop-over habitat, so throwing a neurotoxin in the mix that can reduce reproductive success is likely to harm their populations," according to Dan Cristol of the College of William & Mary, an expert on mercury in birds who was not involved with the new study. "The mercury concentrations reported in this paper are likely to reduce reproduction, but not catastrophically, based on what we know from other species. What may be even worse, though, is that these mercury levels probably spike when they leave the breeding grounds and start burning their reserve fuel, making their already arduous continent-jumping trips even harder."

To assess the birds' mercury exposure, Perkins and her colleagues collected blood and feathers from nine shorebird species breeding and staging for their southward migration at sites throughout Alaska. In addition to the troubling results from birds breeding



Pectoral Sandpipers and other shorebirds are being exposed to high levels of mercury in Alaska. (Photo B. Lagasse)

near Barrow, they found that mercury levels depended on a species' foraging habits—shorebird species that foraged in upland areas, away from methylmercury-rich wetlands, had the lowest blood-mercury concentrations.

More work is needed to determine how much mercury various shorebird species can handle before they suffer adverse effects. "These results have encouraged me to expand my research on mercury exposure in Arctic shorebirds," says Perkins. "I am currently pursuing my PhD at McGill University, where I am working in collaboration with BRI and the Arctic Shorebird Demographics Network to closely examine mercury exposure in multiple shorebird species breeding across the North American Arctic."

Source: Central Ornithology Publication Office 13 July 2016

<http://alaska-native-news.com/alaskas-shorebirds-exposed-to-mercury-23385>

Delaware Bay, May 2016

Introduction

This is an attempt to summarise the results of the shorebird work on Delaware Bay during the northward migratory passage in May 2016. It is written for those wader enthusiasts in Australia and around the world who have followed the fortunes of the waders at Delaware Bay since extensive studies commenced there in May 1997. This was the twentieth year of data generation on the migrating shorebirds and on their principal food supply, Horseshoe Crabs.

2016 in Brief

Shorebirds, particularly Red Knot, arrived slightly early and in higher-than-usual numbers, around 12 May. They were in good condition with average weights already above the long-term average. There were also excellent numbers of spawning Horseshoe Crabs with plenty of spilt eggs available. On 15/16 May there was a major hiatus, with strong winds and cold temperatures. All spawning and migration arrivals ceased. The situation gradually improved over the next week but there were no significant new arrivals

of shorebirds and crab spawning was intermittent. This was because the water temperature was hovering around 59degF, which is the threshold required for crabs to spawn. The final cohorts of shorebirds did not arrive until almost perfect conditions occurred on 23-25 May. Mean weights of Red Knot, Ruddy Turnstone and Sanderling all still remained above the long-term average indicating that a reasonable amount of Horseshoe Crab egg food (mainly in the sheltered mouths of creeks) was still available throughout the period. The first complete bay-wide census, by air, boat and on the ground, took place on 23 May and produced figures rather lower than those on the corresponding date in 2015. The repeat census on 26 May gave higher figures, being ideally timed with virtually none of the study species having departed but with all having successfully arrived. Heavy visible migratory departures commenced on the evening of 26 May and there were only very small numbers of shorebirds left in the Bay after 31 May. 11,342 shorebirds were seen leaving northward on migration off Reeds Beach in the five-day period, 26-30 May. For all three species the average weights achieved markedly exceeded the 'good-weight' levels which are considered to be the

Delaware Bay, May 2016 cont.

minimum take-off weights. On 27 May the average Red Knot weight reached 191g, with quite a number of birds being between 200 – 220g and one bird being an amazing 241g (the record of all years is 248g). The only disappointment was that the count figures, which again were highly consistent between aerial, boat and ground counts, were similar in 2016 to 2015 for Red Knot (24,000). We had been hoping for another slight population increase.

More Detail

Banding

1,875 shorebirds were caught in 11 catches on the New Jersey side of the Bay (See **Table 1**). Six of the Red Knot catches (totalling 708), five of the Ruddy Turnstone catches (totalling 472) and five of the Sanderling catches (totalling 694) were of more than 50 birds each. On several catches good numbers of two species were caught and on two occasions good numbers of all three species. Re-trap rates were about 12% on Red Knot, 9% on Ruddy Turnstone and 10% on Sanderling (allowance has been made for some birds released, unbanded, from the nets). All catches were made with cannon nets, between 12 and 31 May. For the first time for some years no catches were made at Fortescue. All of the Red Knot and Turnstone catches were made on the four kilometres of shore between Pierces Point and Reeds Beach north – the areas which had been extensively replenished with sand since Super Storm Sandy three years ago.

As usual, at the end of the catching period, in late May, a small number of grey Red Knot appeared on the shores and a few were caught. All again proved to be first-year birds, making just a partial northward movement in their first year.

Horseshoe Crabs

When sea conditions (no wind) and weather conditions (warm enough for the sea to be above 59degF) occurred then the numbers of Horseshoe Crabs spawning (whether it be day or night tide, spring or neap tide) were good. Towards the end of the month the number of crabs spawning in the Villas area was higher than in most other recent years. However, spawning was rather later and slightly less extensive at Fortescue. Nevertheless, in the last few days of May the tide's edge was awash with Horseshoe Crab eggs and there were layers of green eggs on some of the beaches. So the Horseshoe Crabs certainly provided sufficient food for the current shorebird population on Delaware Bay during the critical last week of May.

Weather

Overall May was much cooler than in the previous two years, with the temperature more frequently below 70degF (21degC) than above it. On only very few occasions this year did it reach 80degF (27degC). Rain was also quite regular throughout the month, though amounts were not excessive.

Team

The usual thirty-strong team was based in four houses at Reeds Beach. Team members came from Canada, Australia, New Zealand, the UK and Brazil.

Of enormous benefit were the delicious and voluminous dinners prepared by Citizens United (Friends of the Maurice River). Thanks enormously to Jane Galetto for again organising this. To return to base after twelve hours of fieldwork and not have to plan, purchase, prepare and cook dinner is an extremely welcome benefit. The only problem is that I have yet again gained several kilograms during my spring migration to Delaware Bay!

Clive Minton

Table 1: Catch totals, New Jersey 2016

Date	Place	Red Knot			Turnstone			Sanderling			Total Catch		
		New	Re-trap	Total	New	Re-trap	Total	New	Re-trap	Total	New	Re-trap	Total
12 May	Pierces Point	68	12	80	67	3	70	58	2	60	194	17	211
14 May	Reeds Central	144	25	169	64	6	70	21		21	229	31	260
17 May	Villas			0	1	1	2	228	26	254	229	27	256
18 May	Reeds North	116	18	134	56	8	64	1	1	2	173	27	200
21 May	Reeds North	68	14	82	19	1	20			0	87	15	102
22 May	Pierces Point	13	3	16	67	6	73	4	2	6	84	11	95
24 May	Villas			0	2		2	81	10	91	83	10	93
25 May	Cooks North	73	14	87	3		3	11		11	87	14	101
27 May	Cooks North	38	5	43			0	2		2	40	5	45
29 May	Kimble South	78	19	97	149	19	168	105	15	120	332	53	385
31 May	Villas Ohio			0			0	109	18	127	109	18	127
	Total	598	110	708	428	44	472	620	74	694	1647	228	1875