

## Red Knots at Anna Plains Sanctuary Zone, 80 Mile Beach Marine Park

Here is another short report from GFN-Australia. It follows on from reports on scanning trips from 2020-10, 2021-04 and 2021-10. It might be of particular interest to those of you who have worked on the Anna Plains section of 80 Mile Beach or have a keen interest in Red Knots.

To read about the previous dedicated scanning trips to Eighty Mile Beach click here;

<http://globalflywaynetwork.com.au/a-scanning-trip-2/>

<http://globalflywaynetwork.com.au/scanning-on-80-mile-beach-at-anna-plains-station/>

<http://globalflywaynetwork.com.au/a-scanning-trip/>

It is interesting to compare the seasons and years.

We conducted dedicated scanning work on 80 Mile Beach between 0 and 60 km south of 'The Anna Plains access track' in October 2020, April 2021 and October 2021 and, this trip April 13 and 14 2022. The 60 km stretch of beach is split into 5 km sections for recording purposes. Scanning was undertaken during very similar tide cycles for all trips. Red Knots are not equally distributed along the beach when they roost. Typically over the past 10 years or so Red Knots have only occurred in their 10s within each 5 km section between 0 and 40 km south. Then in 40 to 50 km many 100s to low 1,000s and once we get in to the 50 to 60 km zones there are high 1,000s. During this trip Red Knots were distributed broadly similar to this but, there were more in some more northerly sections as illustrated by the number of colourbanded birds recorded. As expected the numbers of Red Knot were much higher in the southern sections with about 16,000 lining the tide edge between 54 and 58 km south.



This distribution was reflected in the number of colour-banded individuals observed in each section.

<b>2021 October</b>	<b>2021 October</b>	<b>2022 April</b>	<b>2022 April</b>	<b>2022 April</b>
0-5	0	0-5	0	
5-10	0	5-10	0	
10-15	0	10-15	8	2 DAYS
15-20	1	15-20	3	2 DAYS
20-25	0	20-25	6	1 DAY
25-30	0	25-30	4	1 DAY
30-35	0	30-35	3	1 DAY
35-40	0	35-40	0	1 DAY
40-45	0	40-45	12	1 DAY
45-50	0	45-50	21	1 DAY
50-55	27	50-55	27	1 DAY
55-60	54	55-60	68	1 DAY

Scanning time was not even across all sections.

The total of 133 individually identifiable birds recorded during April 2022 was higher than the previous 3 surveys. During October surveys it is likely that not all Red Knots have returned to 80 Mile beach and also this April we had an additional team member, Adrian Boyle, a highly experienced scanner. Of the 133 individuals recorded during this survey 10 were seen on the same day at a different site (mostly birds recorded in both 50-55 and 55-60), 5 on a different day at a different site (all within 5 neighbouring 5 km sections except one bird that moved 40 km between the 2 days) and 2 were seen on different days but at the same site.

Of the 133 birds 84 had been banded in Roebuck Bay and moved to Anna Plains. The remaining 49 were banded at Anna Plains. 6 additional birds were recorded but, were unable to be identified to an individual as they were missing a flag or a band.

86% (114 birds) have been recorded in one or more years at the Luannan Coast study site in Bohai Bay. 7% (9 birds) have been seen at other sites in China and 4% (5 birds) were seen at both Bohai and another site in the same northward migration season. All those sites were in the Chinese area of the Yellow Sea. These records are obviously biased by the scanning effort put in at these sites but, even so it is clear how important the Luannan Coast is to Red Knots from Roebuck Bay and 80 Mile beach. As is well documented in our years of Bohai Reports <http://globalflywaynetwork.com.au/bohai-bay/reports-and-papers/>

	2020 October	2021 April	2021 October	2022 April
Individual Red Knot	96	116	82	133
Seen in Bohai Bay one or more years %	78%	72%	80%	86%

As we have not colourbanded any individuals since October 2019, all marked Red Knots are now part of the adult, migrating population. The oldest bird observed was a minimum of 17 years old (17+ in our aging parlance).

Banding and resighting studies have shown that some Red Knots spending the bulk of the non-breeding season (September to May) on Eighty Mile Beach make the short hop (about 200 km) to Roebuck Bay during northward migration. Here they finish fuelling up in preparation for the first major leg of their migration, which usually takes them to southern China. Why Red Knots choose to move between both places is an interesting question, both have abundant food resources and it appears individuals have differing strategies.

38% (51 birds) of marked individuals we recorded during this trip stopped in Roebuck Bay on northward migration, and 32% (43) stopped off in Roebuck Bay on southward migration back to Eighty Mile Beach in one or more years. 22% (28) stopped in Roebuck Bay on both northward and southward in one or more years, not necessarily the same year. The above relates to birds once they had moved to 80 Mile Beach, if they were initially marked in Roebuck Bay.

We recorded all marked shorebirds encountered, not just colourbanded birds. 171 shorebirds were marked at either Eighty Mile Beach or Roebuck Bay, with the majority of these being Red Knot. Additionally, 19 shorebirds banded away from Eighty Mile Beach and Roebuck Bay were seen on this trip, from 6 banding sites. Of these 9 were individually identifiable. This is much lower than during October trips as all adult Great Knots have migrated north by mid-April and that is the species that we most commonly record from overseas marking projects.

Banding Site	Colour code	Position on legs
Northern Territory, Australia	Yellow/Blue	Right Tibia
Victoria, Australia	Orange	Right Tibia
Chongming Dongtan National Nature Reserve , Shanghai, China	Black/White	Right Tibia
Rudong county, Jiangsu Province, China	Green/Blue	Left Tibia
South Australia	Orange/Yellow	Right Tibia
Taiwan	White/Blue	Right Tibia

Another set of data we collect is to identify the marked birds to subspecies level. The dominant subspecies here in north west Australia is *piersmai* and also present is *rogersi*. There is a good explanation of the plumage characteristics we use to assess the subspecies as part of this article <http://globalflywaynetwork.com.au/wp-content/uploads/2013/01/Red-Knot.pdf>

There were 89 birds with sufficient plumage and good enough views to assess. 84 (94%) were *piersmai* and 5 (6%) were *rogersi*. This was a lower proportion of *rogersi* compared with April 21 85% to 15% respectively. I have no explanation for this discrepancy! We hope to be able to check how accurate our field observation assessments are by doing DNA work on the large sample of blood samples we have collected that are stored safely in The Netherlands at NIOZ.

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Chris Hassell 26-04-2022



Red Knots stream past as they return to feed.