

BOHAI 2019 – UPDATE 5

Shorebirds

Well it has been a busy 10 days with lots of early starts, shorebird counts, great scanning sessions and lots of wind and rain. Read on to find out more.



Red Knots feeding on the mud in front of a local fishing boat at Nanpu

Red Knots

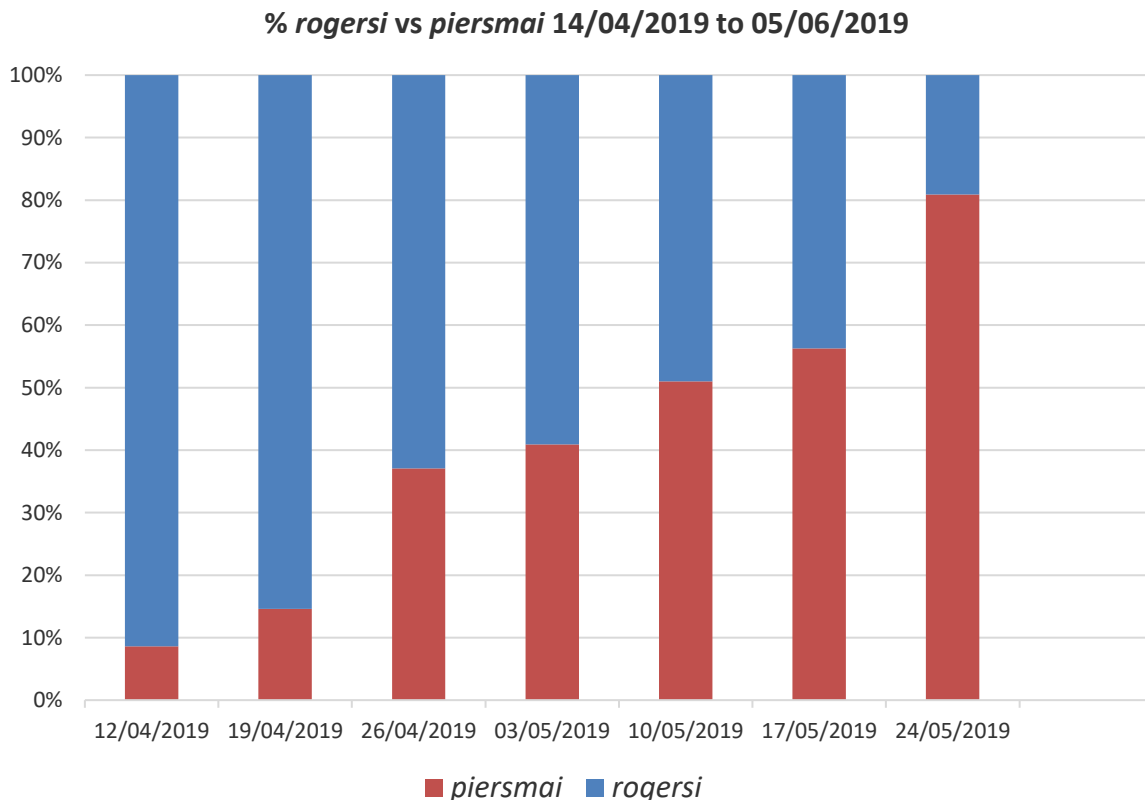
Red Knot numbers along the Luannan coast are still high as we write this update (Table 1). A very important factor influencing their numbers is the amount of food available in the mud. Hebo Peng of the University of Groningen had very encouraging news, stating:

'The main food of shorebirds in general and Red Knots in particular is very abundant in Nanpu this year, Potamocorbula bivalves were found in the highest (average) density over the last five years. Other shellfish species also show a high density in this area, which means that Nanpu wetland is still healthy and can support large numbers of shorebirds.'

Table 1. Red Knot totals for the four counts conducted to date in 2019.

Date	13 Apr	26 Apr	8 May	22 May
Count	792	10,030	44,241	47,537

The *rogersi* subspecies of Red Knot have started to leave for their Chukotka breeding grounds while the *piersmai* subspecies are still arriving at Luannan. This is reflected in the *piersmai* and *rogersi* subspecies graph below. This represents the proportion of each subspecies present, not total numbers.



If you have read any of our previous seasons updates you will know that *rogersi* arrive in greater numbers early in the season and are mostly individuals from Eastern Australia and New Zealand and breed in Chukotka. The later arriving *piersmai* are predominantly from northern Australia, Thailand and possibly other areas of south east Asia.

Red Knots are difficult to count here due to the way they use the area, they move in their thousands as they follow the tide out and rapidly become distant. In previous years when Red Knot have used the ponds extensively this has also added to the difficulty of accurate counts, as finding the birds in the vast pond complex is challenging. However, GFN now assist Beijing Normal University (BNU) with counts and we choose the most suitable tides and count all the coastal sites on the same tide cycle. We record all shorebirds and waterbirds and have amassed a great data set over the years. We think the huge increase of Red Knot in the area since 2017 is

‘real’, but we are still not 100% sure if we were unable to locate some birds during 2016 and 2017 or they didn’t arrive at Luannan and were using other sites in the Yellow Sea region. Our ‘sense’ was that the birds were not here (see reports from 2016 and 2017).

Table 2. Highest single counts of Red Knot from 2015-2019.

2015	2016	2017	2018	2019
29,956	20,000	19,000	48,630	47,537

Great Knots

The majority of Great Knots have now departed Luannan for the next leg of their journey to the breeding grounds. Depending on flight conditions and individual behaviours, some will go direct to their breeding territories and others may stage in Sakhalin, Kamchatka or sites on the northern shore of the Sea of Okhotsk.

Great Knots nest on tundra mountains in eastern Siberia and these areas are available for nesting before the lowlands. The snow melt starts there first, despite the elevation. The thick snow in the valleys doesn’t melt until later. Part of the process of the lowlands becoming free of snow is the runoff from the mountains, which creates streams and rivulets that speed up the process of the snow melt in the valleys and lowlands.

The total counts for our survey area during the 2019 season are shown in Table 3. This species was already present in good numbers when the GFN team arrived on April 11. Typically, numbers increase rapidly with migration starting in earnest around mid-May. They then leave in their thousands over a few days, which is reflected in our 2019 counts nicely (Table 3). The count on the 8th of May is the highest we have recorded for the area.

Table 3. Great Knot totals for the four counts conducted to date in 2019.

Date	13 Apr	26 Apr	8 May	22 May
Count	6,362	10,467	12,971	1,803

Great Knots are relatively easy to count accurately at Luannan due to the way they use the mudflats. As the tide recedes they start feeding on the first available mud in the eastern corner of Nanpu. However once mud starts becoming exposed at Zuidong, approximately an hour later, the birds move to this section which is several kilometres away. This is critical information to be aware of when conducting counts otherwise the same birds may get counted twice. Table 4 indicates an obvious increase in Great Knot here this season compared to previous years. This is unlikely to be due to a big increase in the general population, but more likely that the habitat here and the food availability have improved in the last few years. Between 2009 and 2014 there were large reclamation projects and considerable loss and degradation of habitat at Zuidong – the Great Knots main foraging area. In recent years, food availability at Great Knot staging areas further north in the Yellow Sea have declined, as shown by University of Groningen and Fudan University studies. This has likely led birds searching for alternative sites,

and as Zuidong and Nanpu currently have good food resources, an increasing number of Great Knot are choosing to stay here.

Table 4. Highest single counts of Great Knot from 2015-2019*

2015	2016	2017	2018	2019
10,270	10,000	6,000	8,230	12,971

It should be noted that if a comprehensive counting program was conducted, and turnover analysis applied to the data it would show much higher numbers of all species, not just the two knot species, use this stretch of the Luannan coast during the spring migration season.

Fieldwork

The scanning has been productive during the past 10 days. We have had favourable scanning conditions. Early morning, outgoing tides have been the most usual conditions for us to be working in. As the water recedes we move along the seawall and sometimes the knots can be very close, thus giving the team a chance to read engraved flags and colourbands. Early morning is when the light is at its best, as typically by 10AM the combination of heat haze and smog makes colourbands difficult to identify at a distance.

For the last few days we have started leaving town at 4AM allowing us to reach the seawall before 5AM. We have just had 2 great days when we recorded 83 and 73 individually colourbanded Red Knot from NWA. Of those colourbands 36 and 27 respectively were the first sightings for this season, suggesting the *piersmai* subspecies are still arriving at the site despite how late it is in the season. This is not new information, but that Red Knots are still arriving when most other species have already left for the breeding grounds is interesting. It is the very northerly latitudes that the *piersmai* subspecies breed at that drive this late migration. Their breeding areas are not free of snow until June.

How the birds behave while foraging influences our scanning success. Often the knots are in flocks of a few hundred birds and spread out along the 7km of Nanpu. Recently they have been congregating in 2 massive flocks of approximately 10,000 each and moving close to the wall. This gives us the opportunity to 'sit on a flock' for a long time. While this results in some double recording of the same individual, overall it leads to high volumes of data being recorded.

Not every day is perfect though! Recently we had a seriously windy day. The only way we could get some scanning done was to scan with our telescopes from the van. This provided some shelter from the wind and we managed a successful morning of scanning.



Nigel and Adrian scanning Red Knots from the back seats of our van

To date we have recorded 2,901 marked birds (all and any sighting not to a specific individual). These are birds of 14 species from 29 marking locations.

We have 708 sightings of colourbanded shorebirds from NWA equating to 309 individuals.

We have also identified from engraved flags, 161 individuals from NWA, 53 from Chongming Dongtan National Nature Reserve, 36 from New Zealand and 33 from Victoria, Australia.

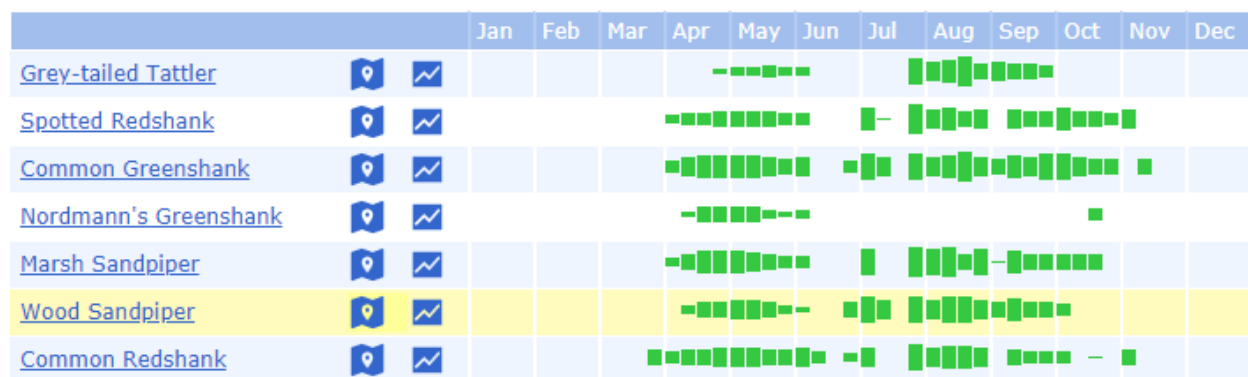
GFN upload 40,000+ bird observations into global citizen science project *eBird*

Since the first scanning season in 2010, the GFN team has maintained a daily log of all the birds we've seen around our study sites and nearby birding hotspots. This unique dataset has until recently been stored as spreadsheets, accessible only to GFN or at the request of interested parties.

To make the data more accessible to researchers and birders, we decided to upload the dataset onto eBird. eBird is the world's largest biodiversity-related citizen science project, with more than 100 million bird sightings contributed each year by eBirders around the world. A collaborative enterprise with hundreds of partner organizations, thousands of regional experts, and hundreds of thousands of users, eBird is managed by the Cornell Lab of Ornithology.

Incredibly, since 2010 a **total of 42,505 bird observations** have been recorded by GFN. This data has provided valuable insight into the passage of migrants, as well as trends in resident species.

All of our observations have been allocated to *eBird hotspots*, publically accessible sites that any observer can contribute their sightings to, or explore the abundance of observations. The hotspot *Nanpu Mudflat* (our main study site) has **now had 278 species seen there**, and even after 10 years we still add new birds each year. In 2019 we've put our binoculars on Common House-Martin, White-breasted Waterhen, Claudia's Leaf Warbler and Long-tailed Minivet for the first time at this site - not a bad collection of birds for a rocky seawall with minimal vegetation.



GFN data contributes to 'barcharts', allowing a visual representation of the timing of migrants as they pass along the Bohai Bay coast. [Note GFN data is Apr – early Jun only]

Our five most frequently recorded bird species over the past 10 years have been Oriental Magpie (1,058 observations), Eurasian Tree Sparrow (1,041), Barn Swallow (1,003), Common Tern (716) and Kentish Plover (707). At the other end of the spectrum, there have been 33 bird species that have only ever been seen on one occasion. It is clear that our Bohai Bay study area is a trap for East Asian migrants and therefore anything could possibly show up!

We plan to continue uploading our daily sightings into eBird, and hope they will be of conservation value to Chinese researchers and birders now and into the future.

Thanks for reading now enjoy some pretty pictures!



A Black-winged Cuckoo Shrike at the Prison Trees on May 25 was only our 3rd record in 10 years



A Rufous-faced Warbler at Town Zoo – a new species for us after our 10 years of birding in Bohai



A portion of the flock of 354 Asian Dowitchers at Hangu on May 21



We say that we record all flags and bands that we see but made an exception for this racing pigeon that took a rest on the sea wall



A Tiger Shrike in the Town Zoo. This species is usually a 'once a season bird'.

The GFN Team

30 May 2019