SHOREBIRD ANNUAL CYCLE - PART 2

THE YELLOW SEA TO THE BREEDING GROUNDS

Written by Broome Ornithologist Chris Hassell

The second major leg of northward migration takes birds from the Yellow Sea to or towards their breeding grounds. Some birds will only need to fly 1,000 km to breed in northern China, Mongolia and southern Russian wetlands and grasslands. Others will still have over 4,000 km to go to high arctic tundra islands beyond the Siberian mainland.

Studying Red Knots on the Yellow Sea mudflats © Rob Butier

Most of this leg of the journey will be overland so if bad weather is encountered it is easier to find a place to stop for a short break. Flight speeds will vary, birds can zoom along at 80 km/hr when wind conditions suit them or struggle along at 30 km/hr.

The flights may be shorter than the first leg but the birds still need to have left the Yellow Sea in very good condition. When the birds arrive on the breeding grounds, they may have to wait a day or two for the snow to melt and expose feeding areas. Females will soon be laying 4 large eggs and males need energy for display and potentially fighting to defend a territory.

Whimbrels heading north on their annual breeding migration © Ric Else

The breeding grounds are generally vast open areas but, some birds can navigate back to the same nest cup (the size of the palm of your hand) they used the previous summer - demonstrating remarkable navigational skills.

It is still not fully understood how they achieve this, but it is very likely a combination of factors that include an internal compass - shorebirds follow lines of polarity in the sky and are thought to be able to sense magnetic directions using iron oxide crystals in the upper bill. The stars - shorebirds likely have an excellent memory for constellations, which help with navigation at night. The sun – the position of the sun likely helps with orientation, this could be a reason a lot of migration starts in the late afternoon, the setting sun maybe an easy feature to use for orientation. A good memory –shorebirds likely follow landmarks such as coasts, rivers, mountain ranges, islands, cities and even large human-built infrastructure. The latest research on bird migration has revealed that birds can visualise the earth's magnetic field. It is a complicated process involving special proteins in the bird's eyes and 'blue light' that gives a sort of filter to the bird's vision. This filter allows the birds to see a type of compass and direct their migratory flights.

So, with all these tools available are we correct to use all these descriptive words that we can't but help to do; amazing, marvellous, remarkable. To a migratory shorebird these flights are perhaps nothing special, they are just what they evolved to do.