

## SHOREBIRD ANNUAL CYCLE - PART 3 BREEDING

Written by Broome Ornithologist Chris Hassell

All the migratory shorebirds that spent the non-breeding season at Roebuck Bay breed in very different habitats. Greater Sand Plovers are in high desert mountains in northern China, Black-tailed Godwits in boggy tundra within the Taiga Forest of central Siberia and Red Knots beyond the Arctic Circle and, indeed beyond the Siberian mainland on the open tundra of the New Siberian Islands.



*A Great Knot on its nest in the arctic tundra © Jan van de Kam*

The breeding season is short and timing critical. To be successful, the birds need to cram in establishing and defending a territory, attracting or choosing a mate, egg-laying, incubation and rearing hatched chicks. All within 6 to 8 weeks.

The main threats to their success are predators and severe weather. Despite the birds breeding during the northern hemisphere summer, cold snaps and wild storms can occur, including snow and plummeting temperatures, which can kill chicks or force adults to abandon their nests. A very recent threat is large-scale wild-fires.

The shorebirds that breed on open tundra have the most striking plumage changes. One reason for this is to look great and attract a mate. Males also have display flight and display song to help establish a bond with a female and some birds will pair up at the same site year after year.

Females need to arrive at the breeding grounds in very good condition as they will soon be laying 4 large eggs and food may not be abundant when they arrive.

Once incubating on the nest, the second reason for their dramatic plumage change becomes apparent, the red, gold and black plumage camouflages the birds on the tundra habitat. This will help them stay safe from foxes and aerial predators.

Incubation is usually 19-21 days after the last egg is laid. If the eggs hatch the chicks pop out 'ready to go', that is they are nidifugous or precocial, meaning they leave the nest very soon after hatching and are able to live relatively independently. The chicks are much more vulnerable to predation than the adults as they cannot fly so they too have striped, botched and spotty-patterned down to help conceal them. Migratory shorebird chicks feed themselves, but they do need the parent to keep them warm in their early days of life.

The timing of hatching hopefully coincides with [plentiful food](#). [Chicks generally feed on insects and their larvae and are not fed by their parents](#). Within hours of hatching, they have left the nest and are foraging for themselves. A focus of studies on the breeding grounds recently is the timing of hatching and the peak abundance of insects. Warming temperatures in the Arctic are putting this out of balance and it is critical to the chicks' survival.

Shorebird chicks [grow quickly](#) and are fully feathered within about 4 weeks. Generally, the males take on the role of rearing the chicks and females fly south soon after the chicks have hatched. Once they are fully independent the adults leave them on the breeding area and start their southward migration. This means that the chicks take their first southward trip with no parental guidance just an innate sense that they will find a suitable mudflat by heading south.

Breeding is not successful every year. Shorebirds have low annual breeding success, but they are relatively long-lived so, replacing themselves with new a new generation for the population should be possible.

The information above doesn't cover all species breeding strategies, some birds are monogamous and some the opposite and practice polyandry (one female having many partners and the males rearing the chicks).