**BIRDLIFE**

NESTS

Birds are their nests to provide protection for the fragile eggs, to keep them warm and protected from bad weather, and concealed and robust to protect from predators. Most small songbirds remain in the nest until they are ready to fly. Ducks and waders leave the nest almost immediately after birth. Early in spring male birds establish a territory and advertise for a mate. Usually it is the female that builds the nest, with the male guarding the territory. The male wren is the exception. He will have started construction on several nests before deciding on one with his mate. Ground nests are built on inaccessible sites for safety, like cliff ledges. Other ground nests will be carefully camouflaged with twigs and pebbles, as in the case of the ringed plover. Other waders, ducks and gulls, gather dead vegetation into a mound and carve a depression at its center.

Ground nesting birds will stay on the nest throughout the nesting period, their coloration acting as camouflage. Floating nests, like the little grebe's rise and fall with the water flow. Coot and moorhen nests are immobile, fixed in the reeds. The nest is shaped like a cup, lined with dried mud, grass and moss, with the eggs lying at the bottom, protected and insulated. Size of a cup shaped nest varies from a few centimeters in diameter, as with the finch built up in a tree branch to one meter wide built by herons. Domed nests have a roof and a side entrance. Long tailed tits build an elaborate domed nest, with cobwebs and lichen, and the simpler dried leaf domed nest built be the wren. Owls, jackdaw and stock dove nest in natural cavities, like tree holes.

The house sparrow will nest under the eaves of houses. Tits will nest in cavities in fence posts, Woodpeckers and sand martins will excavate their in trees. The woodpecker will hammer and chisel a hole out of a solid tree trunk. Tunnel nesters like the puffin will dig a tunnel into sandy soils. The gold crest and reed warbler build a suspended nest hanging from a tree branch, constructed from reed stems.

TERRITORIES

Birds lay claim to territories when they need a safe place to nest in the spring and when claiming a feeding area in the winter. They vary in size from half an acre defended by a blackbird, to the very small territory of a breeding gannet. In spring a male will announce his territorial rights to other birds through his song. Robins are fiercely territorial, the male claiming a territory and singing vigorously, to attract a female and then both birds sing to defend their nesting site. When the chicks have fledged the pair separate into their own smaller territories which they then defend against each other. Starlings and great tits use posture while singing to warn off other birds. The starling perches on a song post with its wings held slightly away from the body, throat and crown feathers puffed up and the tail held down, the great tit opens his wings with head erect to maximise his size.

Crows nest in colonies, with the mating pair holding a small individual nesting space within the larger common area. Younger non breeding crows stay in flock outside of the larger colonial territory, entering only if one of the family plots falls vacant. Like the crows starlings and rooks flock together when rearing young, sharing feeding sites, but will be protective of the nesting site, driving off any intruder.

Shelduck establish territories in late winter well before the breeding season. From late autumn, having completed their moults, they gather together in flocks, but well before the end of winter they have established pairs and will defend a territory from other shelduck. Pied wagtails normally flock together in winter but in hard times may defend an individual territory to defend a food supply that may be stolen by other birds.

PREENING AND MOULTING

Maintaining the condition of flight feathers is vital to make for efficient flight and a birds survival. Which is why so much time is spent in preening. A bird will wipe its beak across a gland in its tail to gather oil and then apply the preening oil by passing each feather through its beak, nibbling to adjust any misaligned barbs. The control of its wing feathers makes a birds flight more versatile and efficient than any plane.

All birds have to moult their feathers, young birds as they replace their downy feathers with their adult plumage, adult birds replacing worn and damaged flight feathers. Moulting takes place in late summer, with birds replacing all their feathers. Birds replace feathers over a period of time, with primary and secondary flight feathers replaced one at a time. As one feather is partly regrown the second falls out, and the sequence repeats until all flight feathers are slowly replaced. By the time the fifth primary has dropped the first has regrown. In this way the bird will still be able to fly short distances to avoid predators. The moulting process usually take two months, but may last several months for large birds. Some birds, like the black headed gull and many waders, replace winter plumage for breeding plumage in spring. As only body feathers are replaced and the wing feathers left intact, the bird is able to fly normally.

Water birds like ducks, grebes, divers, geese and rails, can moult safely in the middle of a reservoir and so can loose all their feathers at the same time, remaining flightless for three or four weeks. Migrants have different strategies for molting. Those undertaking a short migration moult in the UK before leaving, others, such as the turtle dove, partially molt in the UK and complete it once they have arrived on their overwintering grounds, and others. like the garden and reed warblers delay their moult until they have arrived on their overwintering grounds.

FOOD CHAIN

Birds of prey sit at the top of the food chain. They are hunters and meat eaters. Over a year a sparrowhawk will take seven to eight hundred small birds. In a wood there may be twelve breeding blue tits, each pair producing ten young each year. After ten years, without any predation from kestrels and sparrowhawks, the blue tit population would have multiplied to 7500 pairs, The wood needs the predatory birds to hold the population in balance. To maintain a stable population blue tits need only to replace themselves through their lifetime. Some of the smaller birds, particularly summer migrants like the swallows, eat insects plucking them from the air, others insect eating birds snatch butterflies and their caterpillars, crickets and dragonflies from the tree leaves. The insects through their varying life stages feed from plants, and other insects. All, in time, return to the ground, feeding plant growth, maintaining the food cycle.