

# Garden favourite: Great Tit



Female Great Tit collecting nesting material, by Jill Pakenham

The black belly-stripe is an important 'badge' used by males when displaying at territorial rivals. Researchers have found that males with broader stripes make better parents and that they are more attractive to prospective mates. The belly-stripe is, therefore, an honest signal of male quality.



The 'teacher-teacher' call of the Great Tit must be one of the most recognisable sounds of spring. This familiar species has been the subject of much detailed study, primarily because of its willingness to use nest boxes, so you might think that there is little that we don't already know about this bird. In fact, there is much still to learn, with the Great Tit providing opportunities to test new ideas within the fields of ecology and evolutionary biology.

## THE BASICS

One of the first things you notice about the Great Tit, compared to our other tits, is its larger size. This may be related to, or explain, the Great Tit's foraging behaviour. Less agile than the other tits, it spends more time feeding from the ground, a behaviour often seen in the autumn when Great Tits forage for fallen seeds.

The larger size also means that the Great Tit tends to be dominant over the other species, often evicting them from nesting cavities or the perch of a bird feeder.

Although male and female Great Tits appear superficially similar in their appearance, the males sport a broader black stripe that extends down the chest and belly, passing between and joining the base of the legs. In females the stripe is reduced in width and does not touch the base of the legs. Additionally, the stripe often contains some pale feathering in females, giving it a more washed-out appearance.

In males, the main plumage colours tend to be brighter, the cap glossier for example, than they are in the females. As is the case in many other species, the plumage colours tend to get stronger with age. Prior to their autumn moult, young birds can be recognised by their pale yellow, rather than white, cheeks and by the different colour of some of their wing feathers.

## SETTING UP HOME

The Great Tit's nest is constructed by the female alone. She begins the nest by building a substantial base of moss, with the addition of some grass and other plant fibre. Regardless of the floor space available within the cavity, the female will cover the entire area with the same depth of material, making it quite a job if she happens to



Great Tit, by John Harding

select a large cavity. The nest cup is then added, lined with fur, wool, hair and other soft materials (though rarely feathers), and it is into this that the eggs will be deposited.

Once egg-laying begins, the female will usually lay one egg each day, though she may occasionally miss a day – a practice that is more common in early nesting attempts than later ones. Egg-laying takes place early in the morning, after which the female covers the eggs with nesting material and spends time with her mate, before returning to the box in the evening to roost.

The close association between the pair at this time sees the male busily protecting his 'exclusive' access to his mate. This is the period when the female is most receptive, so the male needs to make sure that other males do not sneak in and secure a mating with his female. The male will often feed his mate during this time together, perhaps contributing a third of her daily food intake, and you may spot her begging like a chick for food. Given the amount that she has to invest in each egg, this additional food may be particularly important. Each egg, which weighs between 1.3 and 2.3g represents roughly 10% of the female's body weight, so the complete clutch will weigh more than she does! Incubation does not begin properly until all the eggs have been laid, so the presence of the female roosting in the box overnight does not necessarily indicate that incubation has started. Even though the female settles over the eggs, without her brood patch (an area of bare skin well-supplied with blood vessels, that develops on her belly) touching the eggs there is insufficient warmth for incubation to begin.

### BRINGING UP BABY

**Each Great Tit chick** weighs roughly 1.5g at hatching. By the time that the chick fledges it will weigh between 16 and 26g, a staggering increase given that it takes place over a three week period. The amount of food needed to fuel this growth is equally staggering, with in excess of 10,000 caterpillars delivered to the typical brood, raised in mature oak woodland. Caterpillars dominate the diet, contributing some 60–95% of the diet, depending on habitat. As you might imagine, those tits breeding in suitable broad-leaved woodland have greater access to caterpillars than those nesting in most gardens, which is why garden-breeding Great Tits are often less successful than their woodland counterparts.

Caterpillars are not equally abundant throughout the year; in fact, there is a short period over which caterpillars are

super-abundant and, as you might expect, Great Tits do better if they can match the period of peak demand from their growing chicks with this pulse of caterpillars.

BTO Nest Record Scheme data show that Great Tits are laying their eggs an average of eight days earlier than they did in the 1960s in response to warmer springs.

Caterpillars are also emerging earlier, but the date on which they do so is influenced by temperatures experienced after the birds have already produced their clutch of eggs. By this time, there is very little the Great Tits can do to advance hatching further, so chicks may be produced after the caterpillars have already pupated, resulting in reduced growth rates and starvation. This mismatch may cause problems if caterpillars continue to emerge earlier with climate change. This is another reason why continued study of this seemingly familiar bird is so important. ■



▲ Many authors have commented on the Great Tit's intelligence, the species showing a high degree of flexibility in its behaviour and an ability to learn tasks.

## FACTBOX: Great Tit *Parus major*

### Population:

Breeding: 2 million pairs

Winter: currently unknown

### Conservation status:

GREEN

**Diet:** Invertebrates (moths, beetles and spiders), seeds and fruit in winter.

### Longevity:

Typical lifespan: 3 years

Max recorded lifespan: 13 years, 11 months and 5 days

### Breeding Ecology:

Clutch size: 7–9 (range 6–15) eggs

Number of broods: 1 (2)

Incubation: 13–15 days

Young in nest: 18–21 days

Age at first breeding: 1 year



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