



Bumblebees

The excellent pollinators

The United Kingdom is home to 24 species of bumblebee. These round, fuzzy insects play a critical role in pollinating native wildflowers and food crops. Unfortunately, habitat loss has driven significant population declines, with two species already extinct and eight on conservation priority lists.

Bumblebee Biology and Naming

The United Kingdom Family of Bees: There are over 270 bee species in the United Kingdom, but only 24 are bumblebees.

The rest are solitary bees and a single species of honeybee.

Species Families: There are two main types in the United Kingdom: 18 “social” species that build nests, and 6 “cuckoo” species that hijack other bees’ nests to raise their young.

The Big Eight: If you spot a bumblebee in your garden, it is highly likely one of the 8 most common species: Buff-tailed, White-tailed, Garden, Early, Red-tailed, Common carder, Tree, or Brown-banded carder.

Colour Grouping: To help identify them, they are often grouped by tail colour: white/buff, red/orange, or ginger/yellow.

Varying Tongues: Bumblebees have tongues ranging from 6 to 20mm. Long-tongued species (like the Garden bumblebee) prefer tubular flowers like foxgloves; short-tongued ones prefer open flowers like bramble.

Five Eyes: They have 5 eyes: two large compound eyes for navigation and three smaller ones on top of their head to detect light levels.

UV Vision: Bumblebees see in the ultraviolet range. Flowers have evolved to emit UV light, which serves as a natural “landing strip” to guide them to nectar.

Did you know?

‘bumblebees are an endangered species’ and are a protected species by law

Bumblebees in the United Kingdom

Tree Bumblebee Arrival: The Tree bumblebee only arrived in the United Kingdom in 2001, but is now a common sight, frequently using bird boxes in gardens.

Hidden Bumblebee Nests: They often build nests in surprising, hidden locations like old mouse holes, compost heaps, or under garden decking.

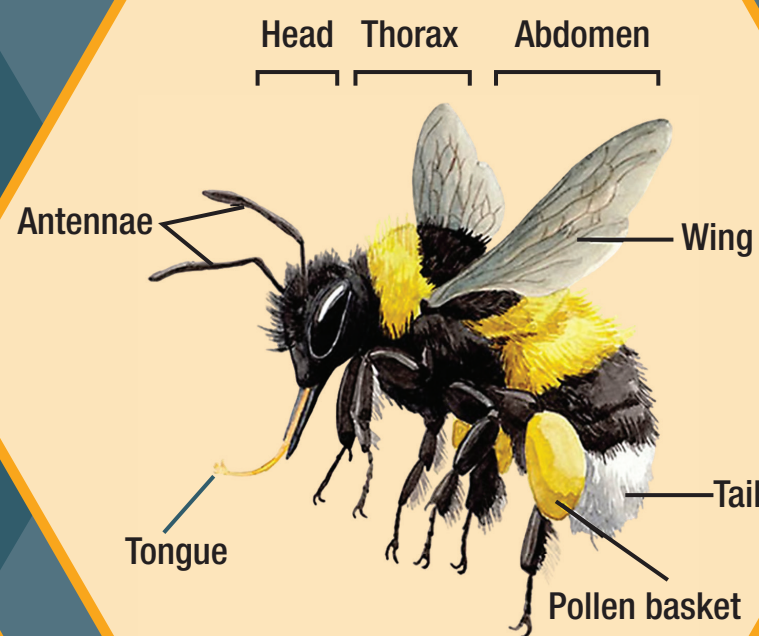
Decline of Traditional Meadows: The United Kingdom has lost 97% of its wildflower meadows since the 1930s, which is the primary driver of bee decline.

Rarest Species: The Shrill carder bee is one of the United Kingdom’s rarest, clinging to just a few coastal sites in South Wales and southern England.

Scottish Strongholds: The Great Yellow bumblebee was once widespread but is now restricted to the far north and west of Scotland.

Extinct Bumblebee Species: Two bumblebees have gone extinct in Britain: Cullum’s bumblebee (last seen in 1941) and the Short-haired bumblebee (declared extinct in 2000).

Anatomy of a Bumblebee



Ecology, Science & Human Connection

Flower Fidelity: During foraging, a bumblebee will typically visit flowers of the same species, making them highly efficient pollinators.

Diet Variety: They rely entirely on flowers for food, feeding on both pollen (protein) and nectar (carbohydrates).

Pollen Baskets: Female bumblebees carry pollen back to the nest in specialised concave areas on their hind legs called corbiculae (pollen baskets).

Global Food Security: Up to 80% of the world’s crop species rely on pollinators like bumblebees. Some agricultural businesses, such as Thanet Earth in Coastal East Kent use bumblebees in their greenhouses to pollinate.

Urban Winners: Gardens and allotments are becoming vital refuges for bumblebees as the countryside becomes more hostile to wildlife.

Famous Literary Icons: From Shakespeare to JK Rowling, the bee has featured in English literature for centuries, with early mentions even appearing in the works of Chaucer.

In his first (1859) edition of *On the Origin of Species*, Charles Darwin wrote of “humble-bees”. I have reason to believe that humble-bees are indispensable to the fertilisation of the heartsease (*Viola tricolor*), for other bees do not visit this flower. From experiments which I have tried, I have found that the visits of bees, if not indispensable, are at least highly beneficial to the fertilisation of our clovers; but humble-bees alone visit the common red clover (*Trifolium pratense*), as other bees cannot reach the nectar. Hence I have very little doubt, that if the whole genus of humble-bees became extinct or very rare in England, the heartsease and red clover would become very rare, or wholly disappear.

British Heritage

A few Bumblebees species from the British Isles were introduced to New Zealand where they have done better than back home.

Bumblebees before World War II were referred to as Humble bees, due to their docile nature.

Bumblebee Species

Scientific name	Common Name
<i>Bombus lucorum</i>	White-tailed bumblebee
<i>Bombus terrestris</i>	Buff-tailed bumblebee
<i>Bombus magnus</i>	Northern white-tailed bumblebee
<i>Bombus hortorum</i>	Garden bumblebee
<i>Bombus ruderatus</i>	Large garden bumblebee
<i>Bombus soroeensis</i>	Broken-belted bumblebee
<i>Bombus lapidarius</i>	Red-tailed bumblebee
<i>Bombus hypnorum</i>	Tree bumblebee
<i>Bombus jonellus</i>	Heath bumblebee
<i>Bombus monticola</i>	Mountain bumblebee
<i>Bombus pratorum</i>	Early bumblebee
<i>Bombus distinguendus</i>	Great yellow bumblebee
* <i>Bombus cullumanus</i>	Cullum’s bumblebee
* <i>Bombus pomorum</i>	Apple bumblebee
* <i>Bombus subterraneus</i>	Short-haired bumblebee
<i>Bombus cryptarum</i>	

*These species are extinct in Britain (have died out)

Scientific name	Common Name
Carder bees/	
<i>Bombus humilis</i>	Brown-banded carder bee
<i>Bombus muscorum</i>	Moss carder bee
<i>Bombus pascuorum</i>	Common carder bee
<i>Bombus ruderarius</i>	Red-shanked carder bee
<i>Bombus sylvarum</i>	Shrill carder bee
Cuckoo bees/	
<i>Bombus barbutellus</i>	Barbut’s cuckoo-bee
<i>Bombus bohemicus</i>	Gypsy cuckoo-bee
<i>Bombus campestris</i> -	Field cuckoo-bee
<i>Bombus rupestris</i> -	Hill cuckoo-bee
<i>Bombus sylvestris</i> -	Four-coloured cuckoo-bee
<i>Bombus vestalis</i> -	Vestai cuckoo-bee

Bumblebees - The Annual Lifecycle

Underground Queens: Only the newly mated Queen survives the winter. She hibernates underground, emerging in early spring.

Single Summer: A bumblebee nest lasts only a few months, typically coming to an end by autumn. The queen’s average lifespan is just about 28 days.

The First Workers: The Queen builds a nest and lays her first batch of eggs. These hatch into female workers who take over foraging duties.

Later Males: Towards the end of the colony’s lifecycle, the queen lays unfertilised eggs which become males. Their only purpose is to mate with new queens.

Cuckoo Hijackers: Cuckoo bumblebees don’t have workers. A cuckoo queen will kill or subjugate the host queen and force the host workers to raise her young.

Old Wings: You can often tell an older bumblebee by its often ragged, tattered and dishevelled wings after weeks of wear and tear.



Bumblebee Behaviours, Flight & Defence

Wing Beating: A bumblebee’s wings beat incredibly fast—around 130 to 200 times per second—which causes their characteristic buzz.

Pollination: Unlike other insects, bumblebees can vibrate their flight muscles to shake pollen loose from flowers. This is essential for pollinating crops like tomatoes.

Chilly Roots: Evolved near the Himalayas, bumblebees are exceptionally well-adapted to cooler British weather and can fly in temperatures that would ground other insects.

Shivering: To warm up their flight muscles on cold mornings in the United Kingdom, they shiver vigorously, raising their body temperature above the air temperature.

Long Distance Travellers: A foraging bumblebee can travel up to 3.5 miles in a single day foraging for food, which is a great distance for such a small creature.

Peaceful Nature: Bumblebees are very docile and only sting to defend their nest.

Zero Stingers: Male bumblebees do not have a stinger. Stinging is strictly a female defence mechanism.

Multiple Stings: Unlike honeybees, bumblebees have smooth stingers, meaning they do not die after stinging and can sting multiple times.

Leg Warning: Before stinging, a threatened bumblebee may raise one of its middle legs, a silent warning to “back off”



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