



THE WILDLIFE CONSERVATION CHARITY

Focus on bees

Why care about bees?

Bees are important pollinators, transferring pollen between plants as they visit flowers to collect nectar for food. Foods as diverse as apples, Brussel sprouts and chocolate come from plants that are pollinated by bees. The value of natural pollinators in Britain is estimated at £500 million annually (Buglife, 2012). Bees are being threatened by the loss of flower-rich habitats and the use of pesticides, with half of our native bumblebee species in decline. Urbanisation and intensive agriculture has led to habitat fragmentation. Pollinators are confined to small sections of suitable habitat that are isolated from one another, and are therefore unable to travel freely across the countryside. It would be like trying to get around Britain without any roads! Pesticides sprayed on crops to target destructive insects are also dangerous for bees. Recently, Buglife have campaigned for a ban on neonicotinoids - a seed treatment that remains in the plant and travels to the nectar and pollen where they are consumed by pollinators. At low doses they may not be fatal, but they target the nervous system, affecting the bees' ability to forage or causing queens to lay fewer eggs.

Types of bees

Not all bees are the same! Their lifecycle and behaviour varies according to the type of bee. In the UK, we have several hundred types of bee. Three different families are mentioned here.

Honey bees

- The only type of bee farmed for their honey.
- The European honey bee is the only species native to the UK.
- They have a yellow and black, smooth abdomen with short hairs and a slender 'waist' between the thorax and abdomen.
- Hives contain many thousands of individual bees, all working for a single queen, who is the only one to reproduce. In the spring the queen lays fertilised eggs into individual hexagonal cells, which develop into female 'worker' bees. These worker bees help to rear the young, feeding them with honey (which is regurgitated nectar) and pollen that they have foraged and stored in cells within the hive.



- They work together, performing special 'dances' to tell each other the location of flowers and use their barbed stinger to protect the hive from any intruders. They can only sting once, as their stinger becomes lodged in the victim's skin, ripping away from the bee's abdomen and killing it in the process.
- Some larvae born later in the year are fed purely on 'royal jelly' produced by the workers. These larvae will become the new virgin queens. At this time, the queen also starts to lay unfertilised eggs which develop into male 'drones'. These drones are driven out of the hive by workers and go off in search of queens from other colonies to mate with, after which they die.
- Once developed, the virgin queens fly away from the hive to mate with drones from another colony. They then either found a new colony, or return to their hive and take over from their mother queen, who has left with a 'swarm' of worker bees to a new site.

Bumblebees

- In the UK there are 24 species of bumblebee, but only eight are commonly found.
- They have a fluffy, bulkier appearance than honey bees, with longer hairs and a less obvious 'waist'.
- Bumblebees also live in a colony of between 50-200 individuals. However, unlike honey bees, their hives survive for just one season, with only the new queens overwintering and founding a new colony each spring.
- When the queen emerges from hibernation she finds a suitable site, under bare soil, or in a bird box or tree. She makes cells and deposits a fertilised egg in each, providing them with food in the form of pollen and nectar. Once enough of these female workers have developed they take over the running of the hive and the queen can devote herself to laying eggs.
- Unlike honey bees, bumblebees can sting repeatedly in defense of their hive, as their stinger is easily retracted from their victim.
- New queens and male drones are produced later in the season and leave the hive to mate with bees from other colonies. The drones then die and the queens overwinter before founding a new colony the following spring.



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Solitary bees

- Not all bees live in colonies.
- There are more than 200 species of solitary bees in Britain, with variable yellow/orange and black colour patterns.
- They can be distinguished from other types of bee by their behaviour, living alone in a nest they have constructed in hollow reeds or twigs, or burrows on open soil. However, solitary bees will construct nests near to one another, giving the appearance of being social.
- All the females are able to reproduce and they lay their eggs in individual cells within their nest, along with provisions they have foraged for the growing larvae. There are no worker bees to help. Once this task is done they die, providing no additional care for their larvae.
- The new adults emerge the following spring, ready for mating, and the process begins again.
- Unlike other types of bee, solitary bees are often specialists, visiting and pollinating only particular plants.



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