



# Plan BEE

With our pollinators under pressure, woods and trees now play a crucial role. Fiona Collins gets the buzz

**B**UMBLEBEES ARE THE messy toddlers of the natural world: sticky, clumsy and covered in food. But according to Bex Cartwright of the Bumblebee Conservation Trust, that's what makes them such perfect pollinators.

"If you watch foraging honeybees, they're incredibly efficient," says Bex. "They store pollen in neat little sacs on their back legs – whereas a bumblebee looks like it's been swimming in the stuff. Bumblebees are much bigger and hairier and they get completely coated, but it means they're fantastic at transferring it from one plant to the next."

Such is the pollinating prowess of bumblebees and other solitary species that one study reckoned they're almost twice as effective as their honey-loving cousins. Put both lots together and it's thought the 270 species of native British bee contribute £650 million a year to our economy in services to agriculture and horticulture. Along with other insects they are also responsible for pollinating 80% of our wildflowers. Not to mention many native trees.

Bees are sun-loving creatures, but the degradation of their traditional flower-rich stomping grounds means our woodland rides and glades are increasingly important. Tree blossom >>



and pollen provide vital food in early spring, when flowers are thin on the ground.

"We've lost 98% of our wildflower meadows since the Second World War," says Bex. "That's a disaster for pollinators. A third of our bumblebee species have declined by 70% or more, squeezed into ever smaller islands of habitat. Two native species have been wiped out altogether, and seven of the remaining 24 are on the edge."

One bee hanging on by the skin of its mandibles is the shrill carder, named for its distinctive high-pitched buzz. It is now our rarest native bumblebee, confined to seven isolated pockets along the southern coasts of England and Wales. Bex and her buzzing battalion at the BBCT are working to reverse its fortunes through a £965,000 project spanning Kent's northern seaboard. They aim to create flower-rich stepping stones between colonies, and one surprising new stronghold is Victory Wood near Whitstable, flagship site for the Woodland Trust's Trafalgar Woods planting drive in 2005, which has since morphed from arable into thriving wood and meadow.

"It's really exciting," says Bex. "We suspect they returned because of the work you've done to restore the flower-rich grasslands. We're now after volunteers to monitor the colony and help us learn more about its foraging and breeding habits."

Woodland reserves can create mini bee havens, but farmland is key to the bigger picture. Between 1984 and 1990 alone, England lost 20% of its hedges – and while the decline has now stabilised, replacing lost hedges and trees is still a priority. The Woodland Trust's agroforestry work, funded by AccorHotels, has returned more than 107,000 saplings to farms since 2013, many of them pollen-rich species like goat willow, crab apple, blackthorn and hazel. That's on top of 1.2 million trees and 135km of hedges planted through our MOREwoods and MOREhedges schemes since 2016.

We know hedges are vital bee feeding grounds, because Exeter University's Raluca Herascu has spent the last three summers tagging more than 2,000

bumblebees at woods across Devon – including the Trust's Colwell Wood, near Totnes. "Even when bees have the chance to gorge on nearby crops, hedgerows still top the menu," she reports. "And bees are choosy, too. We tend to think of them as little robots, but we've discovered that in each colony individuals have favourite foods. That highlights the need for our countryside to provide a rich variety of pollen, rather than being a monoculture. Bumblebees only store a few days' worth in their nests, so if they rely on a single source and it runs out, the whole colony can die."

Smart husbandry in our existing woods is also vital to bee success, according to Trust conservationist Alastair Hotchkiss. "The tendency was once to 'tidy' deadwood from forest floors," he explains, "but

it offers nest sites for species like leafcutters and carpenter bees, as well as rarities like pinewood mason bees, which nest in old beetle tunnels in dead pines in Scotland. And while ivy and brambles are oft maligned, they are vital nectar sources in late autumn."

Alastair says ancient woods harbour some of our most precious solitary bees. "The fringe-horned mason bee is a rare one, and feeds only on bugle and ground-ivy. One of its last strongholds is the Trust's Denge and Pennypot Wood in Kent, where we also have the two-coloured mason bee, which nests in snail shells! The oak-mining bee is another ancient woodland specialist – it feeds on oak pollen, but is now pretty much restricted to the New Forest."

It's not all bad news, however. Seven bumblebee species are still widespread across the UK, while climate change is credited with promoting ivy bees and tree bumblebees here – both arrived in 2001 and are spreading north.

"Tree bumblebees have become known for busily taking up residence in birdboxes," adds Alastair, "because naturally they would nest in holes in trees and deadwood.

"So there are winners and losers, but ultimately all the work the Trust does to restore ecosystems and enrich landscapes is vital for a brighter bee future."

## MAD FOR IT!

**Rhododendron nectar produces 'mad honey', which is poisonous to humans.**

Who are you calling fluffy? The red mason bee is fond of tree pollen, while the rare shrill carder (page 31) favours wildflowers like bird's-foot trefoil

## BLACK MAGIC

The British black bee is the honeybee holy grail. Adapted to both our summers and winters, some strains are also resistant to the deadly Varroa mite. According to apicultural legend, it was wiped out a century ago by a bee lurgy known as Isle of Wight Disease, leaving UK beekeepers to rely on European strains for their hives.

But in a corner of Northumberland, beekeeper Dorian Pritchard is on a mission. "About 40 years ago a few of us became convinced that the native black bee was still going strong in isolated pockets here," he says. "I'm a geneticist by training, so I selected colonies of dark bees and began to breed. My dream would be to reinstate British black bees across the UK."

Dorian now keeps 22 hives, which he's been able to prove are distinct from European honeybees using the vein patterns in their wings and DNA analysis – both of which are unique. "One discovery is that black bees forage on a wider range of pollens, which we think contributes to their greater resistance to disease. Varroa mites will wipe out a European hive in two to three years, but I first spotted Varroa in my hives 19 years ago and my bees are still going strong."

The challenge for Dorian and other keepers of black bees – including Richard Wilson, the Woodland Trust's site manager in Northumberland – is to prevent cross-breeding between the strains. "Luckily honeybees only have a range of about 3½ miles, so up here it's fairly easy to isolate the species," explains Richard. "I focus on managing our woods for bees by improving the floristic value of verges and grassland and planting pollinator-friendly trees like crab apple, hazel and lime. That bridges the hunger-gaps for bees early and late in the season."

FLIPP FUJIA/ALAMY; ROBIN HOSKYNS, BUCKWINKEL/ALAMY

