



## SEA OF YELLOW

BUTTERCUPS AND RED CLOVER WAVES in the wind across a wild field, while tall electric-blue spires of viper's bugloss poke up in the field margins and road verges winding through the flat open landscape of Romney Marsh in Kent. They are buzzing with bees, and if you look closely you will see a variety of bumblebee species clambering around.

Many won't be instantly recognisable, as this corner of the English south coast is home to some of the UK's rarest bumblebees including the Brown-banded Carder bee, Moss Carder Bee and Ruderal Bumblebee.

They are here thanks to a project that has advised on restoring, maintaining and planting nearly 3,000 hectares of farmland, roadsides and nature reserves with the favourite food of long-tongued bees. As well as the viper's bugloss, they have been lured by black horehound, vetches and white dead-nettles.

The return of these scarce bumblebees - some recorded returning to areas where they had not been recorded for 25 years - should be testimony to the success of the project, but it is actually an unintended consequence of an audacious plan to reintroduce the Short-haired Bumblebee (*Bombus subterraneus*) to Britain.

TWO SPECIES OF BUMBLEBEE BECAME EXTINCT in the UK during the 20th century: Cullum's Bumblebee last seen on the Berkshire Downs in 1941, and the Short-haired Bumblebee, which was seen for the last time at Dungeness in Kent in 1988 and officially declared extinct in 2000. The precise reason isn't known but loss and fragmentation of habitat is thought to be a major factor.

"We've lost 97% of our wildflower-rich grasslands since the 1930s and there are increasing distances between bumblebee-friendly patches," explains Dr Nikki Gammans, project manager of the Short-haired Bumblebee Reintroduction Project.

In 2009, the fledgling Bumblebee Conservation Trust (BBCT) and the RSPB, with funding from Natural England, launched the first ever bumblebee reintroduction programme. Luckily, the species still existed in Europe, but before any foreign trips could be planned, Nikki had to persuade farmers and landowners around the Dungeness peninsula to create a paradise for the long-tongued bee.

Only when sufficient forage had been planted, could queens start to be imported. Between 2012 and 2016, more than 200 queens were collected from the strongest population in southern Sweden and released on the RSPB reserve at Dungeness.

It was originally planned to bring back descendants of British queens from New Zealand - where Short-haired Bumblebees had been shipped over a century earlier to pollinate clovers - but this ▷



# The Bee Brigade

For more than ten years, Dr Nikki Gammans and an army of volunteers have been running a project to reintroduce a rare bumblebee to Britain. And they found success - albeit heavily disguised as defeat. By **Alison Benjamin**

Photographs **Paul Hayes-Watkins**





Nets at the ready! Dr Nikki Gammans, centre, with, from left, Tilly, Claire, Megan and Clare





Despite a windy day, the team captures a rare Ruderal Bumblebee (*left*) and a Moss Carder Bee, (*below*) in Dungeness

◁ proved impossible because they were inbred and unlikely to survive.

Although Swedish queens were seen foraging a couple of days after their release each year, a huge surveying effort by volunteers and DNA analysis of all possible sightings failed to find any worker bees - the queens had not produced colonies.

No one knows why for sure. One theory was that keeping the queens in quarantine for two weeks may have delayed them finding a nest and reduced the amount of nesting sites available to them.

“We put them in quarantine because they could have slightly different strains of diseases, although this was not required by law,” says Nikki.

As project manager, the failure weighs heavy on her shoulders. “It’s hugely disappointing,” she admits. “I know I shouldn’t take it personally but I do.”

HOWEVER, SIX YEARS AFTER THE LAST QUEENS WERE RELEASED, the project has turned more than a 100 square miles (260km<sup>2</sup>) of the Kent and East Sussex coast - stretching from Rye along to Folkestone and inland to the High Weald and over to Ashford - into a floriferous banquet for other long-tongued bumblebees on the brink of extinction, making it almost certainly the best place in the UK to see the Ruderal Bumblebee.

“To increase species - and rare ones at that - is something that everyone involved in the project should be extremely proud of,” says Nikki.

And it is still going strong, although now focused on extending and improving habitat for all other



### LONG-TONGUED BUMBLEBEES' FAVOURITE FOOD

*Top flowers visited by these bumblebees and recorded by the project*

- Comfrey
- White dead-nettle
- Brambles
- Viper's bugloss
- Red clover
- Bird's-foot trefoil
- Black horehound



bumblebees. More than 50 farmers have received bespoke advice and plans from Nikki and her small team of conservation trainees on everything from which flower seed mixes to sow and when to scatter them, to grazing regimes for livestock for a greater diversity and abundance of flowers rich in nectar and pollen.

“Once I’d got the five most respected farmers on the Marsh signed up, others were responsive, especially arable farmers who could see the economic benefits of bees,” she says.

“Bee-pollinated raspberries have more bumps, look more attractive and can fetch a higher price and broad beans grow straighter, so go through the machines better.”

In addition, smallholders, nature reserves, councils, and golf courses are among 65 other landowners who’ve come on board. The county council has been working with Kent Wildlife Trust’s Green Lanes for Bumblebees project and the BBC T to manage 64km of its road network as ‘bee roads’ - where verges are cut only twice a year in early spring and then not until autumn, allowing wild flower seeds to spread. Bee roads are now being rolled out across the whole of Kent.

BUT IT’S NOT JUST ABOUT CREATING WILD FLOWER MEADOWS that bloom throughout the summer. “A crux of our success has been planting native primroses and cowslips white dead-nettle and yellow flag iris that all flower early, as well as late forage, like black horehound, as these are periods which are crucial for queen survival and development,” explains Nikki.

And the results speak for themselves. In addition to the return of rare species, total bumblebee numbers on nature reserves that have worked with the project have increased.

According to Nikki, it is the first long-term landscape scale project in Europe that has managed to show in a scientific way that habitat restoration and improvement can bring back endangered bees.

All bumblebee species and flower visitations, for example, have been recorded by volunteers on monthly surveys and fortnightly ‘bee-blitz’ days, providing excellent data on the different bees’ ▷





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**There are so many new things we are learning, like which bee-friendly plants cope best with rising temperatures and drought.**

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◁ favourite food.

The monthly monitoring surveys cover 74 different transects (fixed routes of around 2km), one in the shadow of a nuclear power station. Findings feed into the Bumblebee Conservation Trust's UK-wide BeeWalk scheme, a citizen science programme involving more than 500 volunteers making monthly bee counts across the country.

A recently published, decade-long, study of the BeeWalk data by researchers led by Dr Penelope Whitehorn at the Karlsruhe Institute of Technology in Germany, found that reversing the loss of semi-natural areas, like Romney Marsh, may be the single most effective way to save bumblebees.

NIKKI SAYS THE PROJECT would never have been possible without a dedicated group of volunteers, which has grown from her mum and dad - all the way from Surrey - to 65 mainly locals. Inspired by Nikki's energy, enthusiasm and expertise, they perform invaluable tasks from planting flowers; counting bumblebees and surveying forage to manning stands at village fetes to educate the public about how they can improve planting for bees.

"It's been fun, challenging and rewarding for all concerned," says David Wilson, who has volunteered for more than seven years.

“**Species don't exist in isolation. We're all interlinked. And the wider benefits the project has achieved is a great legacy.**”

## Return of the natives



### Brown-banded Carder Bee (*Bombus humilis*)

One of the UK's rarest bumblebees, only seen in flower-rich meadows in coastal areas along the south of England and Wales from May to September.

They look like a bleached-out version of a common carder bee, with the same fluffy, ginger pile on their thorax, but a much paler blonde body as if they have spent too much time in the sun. Their ground nests are home to a small colony of fewer than 100 workers and hidden with moss and grass.



### Ruderal Bumblebee (*Bombus ruderatus*)

Given its name you'd be forgiven for expecting to find this bee on wastelands feeding on weeds, but it's so rare that you'll only catch a glimpse of it now in a few isolated pockets of south east England and Lincolnshire where red clover still grows abundantly. Confusingly, this bee comes in many different forms, from jet black to yellow-banded. The striped version looks like a Garden Bumblebee but on a bigger scale, (queens are a huge 18mm). It has a very long tongue which also likes to delve deep into white dead-nettles, comfrey and vetches. It nests in old rodent holes, like many other bumblebees species, and has colonies of more than 150 workers which fly from May to October.



### Moss Carder Bee (*Bombus muscorum*)

This long-tongued bee is found on vetches and knapweeds on the Scottish Highlands and the Pennines. Further south, it's confined to flowery coastal marshland.

It too has a bleached body and a ginger-coloured pile on the top of its thorax, but this 'hat' is shorter, neater and denser than other carder bees, with a pale fringe around it. Queens appear in May down south and June further north and measure 14mm, making them the UK's largest carder bee. Workers (10mm) and males (12mm) are a similar size to other carder bees and can fly until September. They nest on the surface of the ground or just below, with small colonies.

The day I meet Nikki, she is behind the village hall in picturesque Ivychurch with a couple of volunteers and a trainee, planting up lungwort, lavenders and globe thistles alongside a clump of comfrey, all donated by the community. A sign reads, 'Romney Marsh Wildflower area in progress'. "This is going to be a sensory bed and the one over there will be wilder," says Nikki, proving that no patch of earth is too small to help bees.

SO WHAT'S THE FUTURE FOR THE SHORT-HAIRED BUMBLEBEE PROJECT? The majority of farmland habitat improvement has been funded by EU agri-environmental grants, but post-Brexit these are being phased out over the next five years. Will more habitat creation be possible under the UK government's proposed alternative?

"If the government delivers on what they have promised," replies Nikki, choosing her words carefully. "But there is lots of confusion about what will follow. One thing is clear, they need to devise the new scheme in conjunction with the farmers themselves. It comes down to money. You can't expect farmers to invest in new measures themselves that will make them worse off in the short term. It's their livelihood."

There is some debate in the conservation world over the ethics of re-introducing species. It may be sexy to try and bring back lynx and wolves (and Short-haired Bumblebees) but isn't it better to focus instead on saving what's still here rather than bringing back what isn't?

Nikki says when the project started they probably wouldn't have got funding for conserving species. "We piggy-backed on the decline of honeybees that was in the news. Beekeepers had a bigger voice than us and the government noticed. So we campaigned about how we could try to bring back a bumblebee that had gone extinct if we restored enough habitat on a large scale."

THE PROJECT WAS INITIALLY FUNDED by Natural England's species recovery programme, and over the years the restored habitat has created an ecosystem benefitting a broad range of other wildlife. "Species don't exist in isolation. We're all interlinked. And the wider benefits the project has achieved is a great legacy," says Nikki.

She expects the project to become a permanent presence, funding notwithstanding - albeit with a new name, *Bee Connected*. "There are still so many new things we are learning, like which bee-friendly plants are going to cope best with rising temperatures and drought. That's going to be so important in the future."

Yet, despite the rebranding, its project manager, for one, will never give up hope of spotting a Short-haired Bumblebee.

"I'm always looking and will train new volunteers to look for them - just in case..."

*Dr Gammans is the author of Bumblebees: An Introduction (BBCT) - an indispensable guide to all of the UK's species* ♦

### HOW YOU CAN HELP

**Join** the BBCT from just £15 and #BeeTheChange! See [www.bumblebeeconservation.org/join](http://www.bumblebeeconservation.org/join).

**Volunteer** for the Romney Marsh project: contact [nikki.gammans@bumblebeeconservation.org](mailto:nikki.gammans@bumblebeeconservation.org).

**Count** bees by going on a set monthly Bee Walk. See [www.beewalk.org.uk](http://www.beewalk.org.uk) for how to join in.