

Places to see bumblebees: Dungeness

By Dr Paul Williams, Natural History Museum, London

At first sight, Dungeness might seem like a desert - many square miles of shining white pebbles, with a shimmering heat haze and little vegetation. It is one of the largest shingle habitats in Europe, a large flat triangle pointing south-eastwards into the English Channel from Kent. From the top of the Old Lighthouse, you can see the vegetation following long curving ridges, thrown up by successive storms over the centuries. In some areas, these ridges are almost bare. But elsewhere they support a form of heath, with broom (*Cytisus scoparius*), wood sage (*Teucrium scorodonia*), foxglove (*Digitalis purpurea*), and viper's bugloss (*Echium vulgare*). This has been one of the richest areas for bumblebees in Britain.



The shingle of Dungeness supports a colourful mix of foxgloves and broom (1983).

Dungeness has always been changing. Centuries ago, the storms that formed the ridges shifted its outline and re-directed the mouth of the River Rother from the east to the west coast. In the first half of the twentieth century, a large area to the southwest of The Pilot pub was excavated by the Southern Railway Company. This lowered area is less arid and supports long lines of willows (*Salix*) and blackthorn (*Prunus spinosa*) that attract *B. terrestris* in early spring, as well as having lines of grassy spoil heaps (from the Ashford railway works) where many bumblebees nest. Photographs show that the vegetation was generally much more sparse in the 1950s. The old battery gun emplacements by The Pilot, where many plants and foraging bees found shelter (horizontal rain is common!), have slowly crumbled and disappeared. Over the years,



Some areas of ridges (background) have had material added (foreground) and have more viper's bugloss (left) and rosebay willowherb (right) (1982). Other large areas have been excavated (below). Food plants include viper's bugloss (left), ragwort (centre), and thistle (right) (1997). Old (right) and new (left) light houses can be seen in the background.



clumps of much-visited plants that thrive in disturbed places, like viper's bugloss, rosebay willowherb (*Chamerion angustifolium*), and teasel (*Dipsacus fullonum*), have come and gone. Others, like the everlasting pea (*Lathyrus sylvestris*), remain as more stable, slowly expanding patches, magnets for the longer-tongued bumblebees

(the rarer sea pea, *Lathyrus japonicus*, also attracts the moss carder bumblebee, *B. muscorum* on the upper beach down by the point). Recently, tall grasses have spread over some of the northern ridges.

Dungeness is well known for its rich bumblebee fauna. It has all of the 'Big Six' common species, as well as the widespread but declining red-shanked carder bee (*B. rud-erarius*). Nationally rare and declining species have remained unusually abundant over many years. Records were kept by Eric Philp between 1940-1970, by Gerald Dicker in the 1970s, and by me from 1974 onwards. All found the heath bumblebee (*B. jonellus*), the moss carder bee (*B. muscorum*), the brown-banded carder bee (*B. humilis*), the shrill carder bee (*B. sylvarum*), the ruderal bumblebee (*B. ruderatus*), and the short-haired bumblebee (*B. subterraneus*). In 1979, I also found a single queen of what appears to be the 'mountain' bumblebee (*B. magnus*). The ruderal bumblebee



A male of the ruderal bumblebee, *B. ruderatus*, visiting common toadflax (1982).

was present in all of its range of British colour forms, from brightly banded to entirely black. The short-haired bumblebee too was quite variable, from light queens looking like burly buzz-cut garden bumblebees (*B. hortorum*), to dark workers resembling the southern cuckoo bee (*B. vestalis*), but all with tell-tale narrow pale fringes on the abdominal segments. The paler males of the short-haired bumblebee are easily mistaken for the great yellow bumblebee (*B. distinguendus*, which does not occur here). Sadly, the last short-haired bumblebee I saw was a queen collected in a pitfall trap by a contracted survey in 1988 (the last record for Britain), and I have not seen any shrill carder bees of ruderal bumblebees either for some years. Of course, we can hope that some of them are still present in low numbers and might some day recover. Curiously, in view of the relatively intense recording effort at Dungeness, the first broken-belted bumblebee (*B. soroeensis*) was recorded there only in 1998 and may be a new colonist. But even if some species have now disappeared, Dungeness has always been one of the places where an unusually high diversity of bumblebees can be seen reliably. Even now, it has particularly large numbers of brown-banded carder bees, the attractive yellow-brown grassland species.

In the spring, the early common species often appear slightly later, in April, than in other more sheltered parts of Kent. The rarer species get moving later still, in late May or early June. The peak of bumblebee activity is in early August, when males of many different species can be seen patrolling low over the shingle, battling the wind. There are few roads across the shingle, but they often have fast traffic, which kills many bumblebees. Intriguingly, some of the smaller rarer species are under-represented among these casualties, perhaps because they tend to travel less far and cross roads less often.



A rare photograph of a worker of the now extinct short-haired bumblebee, *B. subterraneus*, visiting teasel (1982).

So why have there been so many species of bumblebees at Dungeness? It does not seem to be because the bumblebees there are able to visit special, uniquely-preferred food plants, or because Dungeness has a particularly diverse set of food plants. Instead, what is special about Dungeness may be very simple: that compared to much of agricultural Kent, it still has a higher density of deep, rewarding bumblebee flowers, like viper's bugloss (which all species visited), over large areas. The bigger picture may be that many of these bumblebees were once more widespread in Kent (especially in the hinterland of Romney marshes), but that progressive drainage and intensive grazing or ploughing elsewhere has left Dungeness as a temporary flower-rich refuge. Now we all need to search to see if the rarer species can still be found. This is where a digital camera may be indispensable!

Editors Note: The short-haired bumblebee is now almost certainly extinct in Britain, but bees of UK origin still survive in New Zealand. They were taken there in 1885 to pollinate red clover (along with 3 other bumblebee species, buff-tailed, garden and ruderal bumblebees). BBCT are investigating the possibility of one day reintroducing short-haired bumblebees to the UK from New Zealand. However, before we do this we have to make sure that there are one or more suitable areas in which they can survive, for there would be little point in bringing them back only to watch them go extinct again! Dungeness and Salisbury Plain are likely reintroduction sites—watch this space!