

## Shrill carder bee (*Bombus sylvarum*)

## Brown-banded carder bee (*Bombus humilis*)



Shrill carder bee (*Bombus sylvarum*) © Steven Falk



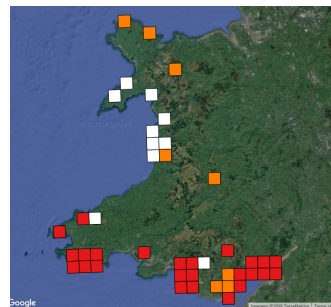
Brown-banded carder bee (*Bombus humilis*) © Steven Falk

The Shrill carder bee (*Bombus sylvarum*) has a single black band on its thorax, and two dark bands across the abdomen with a pale orange tail. The Brown-banded carder bee (*Bombus humilis*) is a tawny coloured bee with a brown band towards the base of the abdomen. Once widespread in lowland Britain, both species declined substantially during the 20th century. Due to the extent of these declines, both species are listed under Section 7 of the Environment (Wales) Act 2016 as Species of Principle Importance in Wales.

### Life cycle

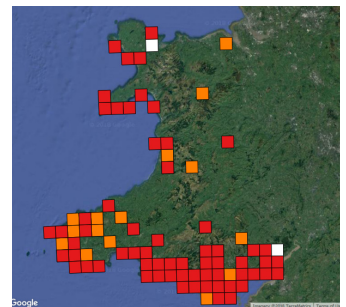
Both species have similar life cycles. In May the queens emerge from hibernation and establish new nests with workers produced shortly afterwards. Nesting typically occurs in undisturbed tall grasslands, which provide shelter, warmth and nest materials. Nesting occurs on the surface of the ground and females comb together grass and moss to cover the surface of their nest. Males can be seen between July and September. New queens leave the nest and mate soon after. Once mated, new queens feed heavily on pollen and nectar, storing the energy as fat inside their bodies. This fat is used to sustain her during hibernation from October to April.

### Distribution maps



**Shrill carder bee**  
(*Bombus sylvarum*)

*Bombus sylvarum* records:  
white = 1800 to 1949,  
orange = 1950 to 1989,  
red = 1990 to 2017.



**Brown-banded carder bee**  
(*Bombus humilis*)

*Bombus humilis* records:  
white = 1800 to 1949,  
orange = 1950 to 1989,  
red = 1990 to 2017.

(The most recent (top most) dates overlay the earlier dates (lower ones). The information used here was sourced through the NBN Atlas and Local Environmental Records Centres Wales from the following sources: Bees, Wasps and Ants Recording Society (BWARS), Biodiversity Information Service for Powys and Brecon Beacons National Park (BIS), Bumblebee Conservation Trust (BBCT), National Trust, Natural Resources Wales (NRW), North Wales Environmental Information Service (Cofnod), South East Wales Biodiversity Records Centre (SEWBRc), and West Wales Biodiversity Information Centre (WWBIC). NBN Atlas occurrence download at <http://nbnatlas.org>. Accessed 01 March 2018.)

### Habitat

Like other bumblebees, these two species require large areas of habitat to support their populations and a continuous supply of forage plants throughout the flight period. Large areas of fairly tall, open flower-rich grasslands with a variety



of plant species, particularly long-tubed flowers from the Pea (*Fabaceae*), Figwort (*Scrophulariaceae*), Broomrape (*Orobanchaceae*) and Mint (*Lamiaceae*) plant families are preferred. Both species need large areas of flowers, however the Shrill carder bee needs continuous areas, whereas the Brown-banded carder bee uses smaller patches more widely distributed across the landscape. Typical habitats include coastal dunes, coastal grassland and cliff-tops, heathland, coastal grazing marsh, vegetated shingle and flowery brownfield sites.



Shrill carder bee marsh habitat at Gwent Levels © Steven Falk



Brown-banded carder bee brownfield habitat at Coedely Colliery, Rhondda Cynon Taf © Liam Olds

## Reasons for decline

A huge reduction in the area of wildflower-rich grasslands through agricultural intensification, along with loss of field margins and set-aside has been the main cause of decline in these species. There were once large areas of wildflower-rich unimproved habitat, however these habitats are now small, isolated from each other and unfortunately are still being lost. Other issues that threaten wildflower-rich habitats for these species include scrub encroachment and excessive disturbance as a result of vegetation clearance, new grass-cutting and grazing regimes, drainage, commercial forestry and development.

The Shrill carder bee is now restricted to seven areas in Wales and southern England. Nationally important strongholds in Wales are found on the Gwent Levels, the Glamorgan coast between Bridgend and Swansea, and the Castlemartin Peninsula in Pembrokeshire. The Brown-banded carder bee suffered serious population declines in the

20th century. In Wales its strongholds are now in the south through to Pembrokeshire, where it can be found both inland and on the coast. Brownfield sites are important to preserve for these species because they represent the necessary habitat requirements.

## Habitat management

- **Remove or reduce stocking levels** on grasslands between 15th April and 1st September to encourage flowering. Stands of knapweed, burdock or thistle still flowering should be protected to provide food for queens;
- **Plan grassland cutting regimes** to ensure flowers are available throughout the flight period of these species. If cutting between April and September is necessary, cut areas on a small scale and in sections or on rotation to ensure some flowers remain, and ideally leave some areas uncut until September;
- **Nectar flower mixes** should contain at least four pollen and nectar rich plants ideally including Red clover (*Trifolium pratense*). Other useful species are bird's-foot-trefoils, Red bartsia (*Odontites vernus*), Lucerne (*Medicago sativa*) and knapweeds. It is important that these mixes are combined with other non-cropped land and field corners to provide spring foraging for queens;
- **Sow nectar mixes in strips** or blocks of 0.5ha, with at least one block every 20ha. Encourage late flowering by cutting half of the sown area at the end of May then the whole area to 10cm between 15th September and 31st October. Ensure cuttings are removed;
- **Encourage brambles** adjacent to flower-rich habitat to provide late season pollen and nectar provisions; and
- **Create grassy areas** at the edges of scrubby patches to provide potential nesting sites. Nesting areas should be created within a kilometre of flower-rich sites, ideally on south facing slopes with a sunny aspect and with a mix of habitats present. Cut these areas no more than bi-annually or graze very lightly to allow a thatch, or litter and moss layers to develop.

## Further information

This sheet can be accessed on the web at [www.buglife.org.uk](http://www.buglife.org.uk)

This bee is included in Buglife Cymru's Wales Threatened Bees report which can be downloaded from

[www.buglife.org.uk/wales-threatened-bee-report](http://www.buglife.org.uk/wales-threatened-bee-report)

The Bumblebee Conservation Trust has detailed factsheets on why and how different management options can be used to create beneficial habitats for bumblebees. These are downloadable from

[www.bumblebeeconservation.org](http://www.bumblebeeconservation.org) - just follow the links to 'Farming and land management'.

Bees, Wasps & Ants Recording Society [www.bwars.com](http://www.bwars.com) Aculeate Information Sheets.

**Hymettus 2006: Bumblebees associated with open grasslands.**

[www.buglife.org.uk](http://www.buglife.org.uk) | [wales@buglife.org.uk](mailto:wales@buglife.org.uk) | @BuglifeCymru  | Buglife 

Buglife Cymru, c/o Forest Farm Conservation Centre, Forest Farm Road, Cardiff, CF14 7JJ

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