

Species Action Plan

Stepping Stones Project

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Common name: Bilberry/mountain bumblebee.

Scientific name: *Bombus monticola*.

Conservation status: Localised and declining.

Habitat: Almost exclusively upland moorland, heath and grassland.

Food: Bilberry is the main nectar source in spring and early summer, but this may reflect availability. *B. monticola* will forage on a range of other species in nearby meadows, gardens and heathland, if available.

Ecology:

A very distinctive bumblebee with extensive red marking over at least the last half of the abdomen, and a very bright yellow band on the front of the thorax. It is closely associated with higher altitude habitat and especially areas which support bilberries (*Vaccinium* spp.).

Historically it was widely distributed throughout northern and western Britain but there has been a marked decline in the distribution throughout its former range in Britain. This bee was not regarded as being scarce or threatened, but has now been included on Natural England's Species Recovery Programme because of the modern evidence of serious decline.

There are clear flower-visiting preferences for this species, with bilberries (*Vaccinium* spp.) and sallow (*Salix* spp.) being much used in spring; bird's-foot trefoil (*Lotus corniculatus*), clovers (*Trifolium* spp.), raspberry (*Rubus idaeus*) and bramble (*Rubus fruticosus* agg.) in early to mid summer; bell heather (*Erica cinerea*) in mid to late summer. Locally, on the Long Mynd heather and marsh thistle may be important.



UK distribution *B. monticola*

Source: NBN Atlas; Map data © OpenStreetMap; Imagery © CartoDB



Bilberry: an important nectar source in spring and early summer



Nectaring on heather in September

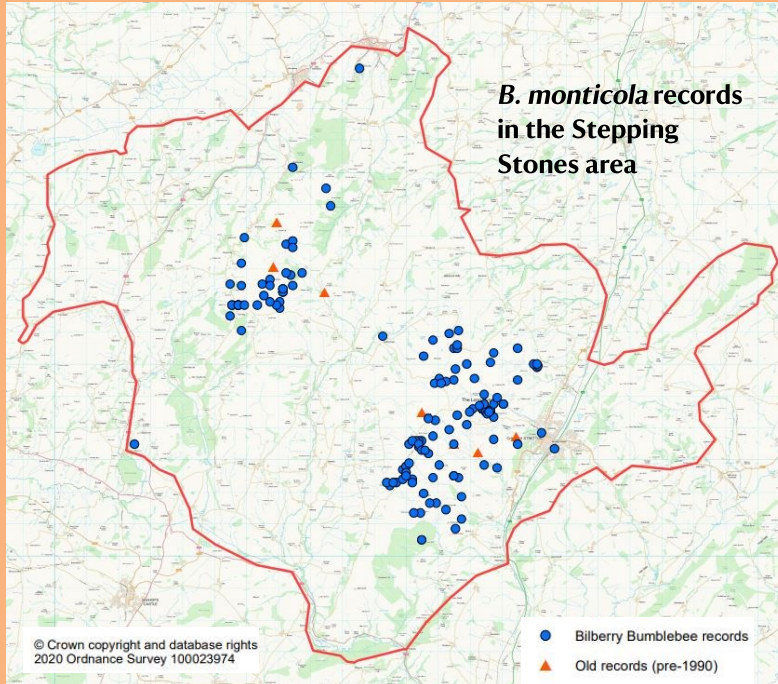
Bilberry bumblebee



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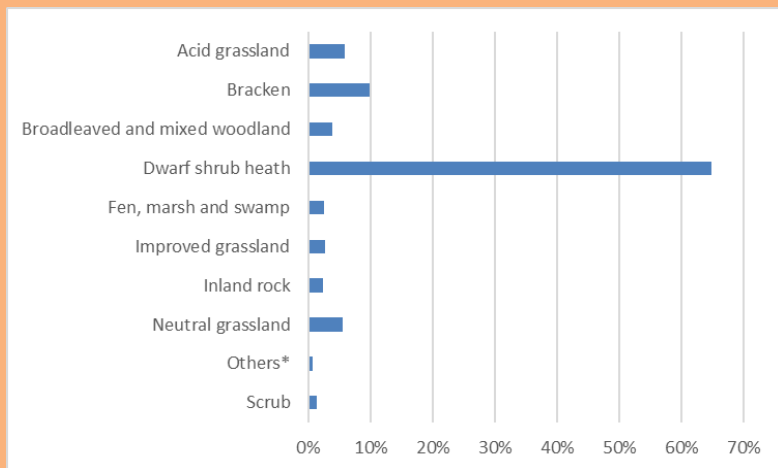
Bilberry bumblebee in the Stepping Stones Project area



Both recent and historic records are mostly concentrated on the Long Mynd and the Stiperstones (left).

Predictably, dwarf shrub heath is overwhelmingly the most common habitat used (below left). Other habitats could represent nectar/pollen sources that fill the gap between the flowering of Bilberry *Vaccinium myrtillus* (in spring) and Heathers *Calluna* sp./*Erica* spp. (in late summer).

A further breakdown of this preference for dwarf shrub heath indicates that heath, and heath with scattered bracken, were the habitat type for 50% of the total number of records, and bracken over heath was the next highest (23%). Bracken over litter (i.e. with little heath/grass left beneath it) accounted for 8% of the sample area. These figures suggest that heath with high bracken cover may still provide suitable habitat, but as the bracken litter increases (to the detriment of the other plants) the habitat becomes unsuitable. Other habitats such as wet flushes and acid grassland may provide additional feeding opportunities.



Left: breakdown of *B. monticola* records by broad habitat type

Conservation for bilberry bumblebee

The main causes of the observed rapid decline in *B. monticola* are thought to be habitat loss and degradation, possibly linked to climate change, which reduce or eliminate the flowering plants needed by the bumblebee.

Results from the Long Mynd show a very sharp decline in records away from dwarf shrub heath habitat, with 91% of records within 300m of heathland. A similar exercise was done looking the distance between bilberry bumblebee records and potentially flower-rich grassland types. Results suggest such grasslands are not an important foraging resource unless they are very close to heathland; emphasising the importance of botanical diversity within existing heathland sites. Site management should maintain bilberry cover and maximise flowering of dwarf shrubs, associated mire and grassland.

Conservation for this species should focus on creating, restoring and linking heathland and nearby upland grassland habitats to provide sources of pollen and nectar throughout the season, as well as suitable habitat for nest sites. Specifically, advice to landowners should promote the bee's required habitat e.g. sowing/planting of bilberry and leguminous plants and installation of a grazing/mowing regime that avoids removing forage flowers such as clovers, heathers and vetches until late summer/early autumn but also avoids undermanaging which would lead to scrub invasion.



B. monticola foraging in Church Stretton churchyard

Bilberry bumblebee

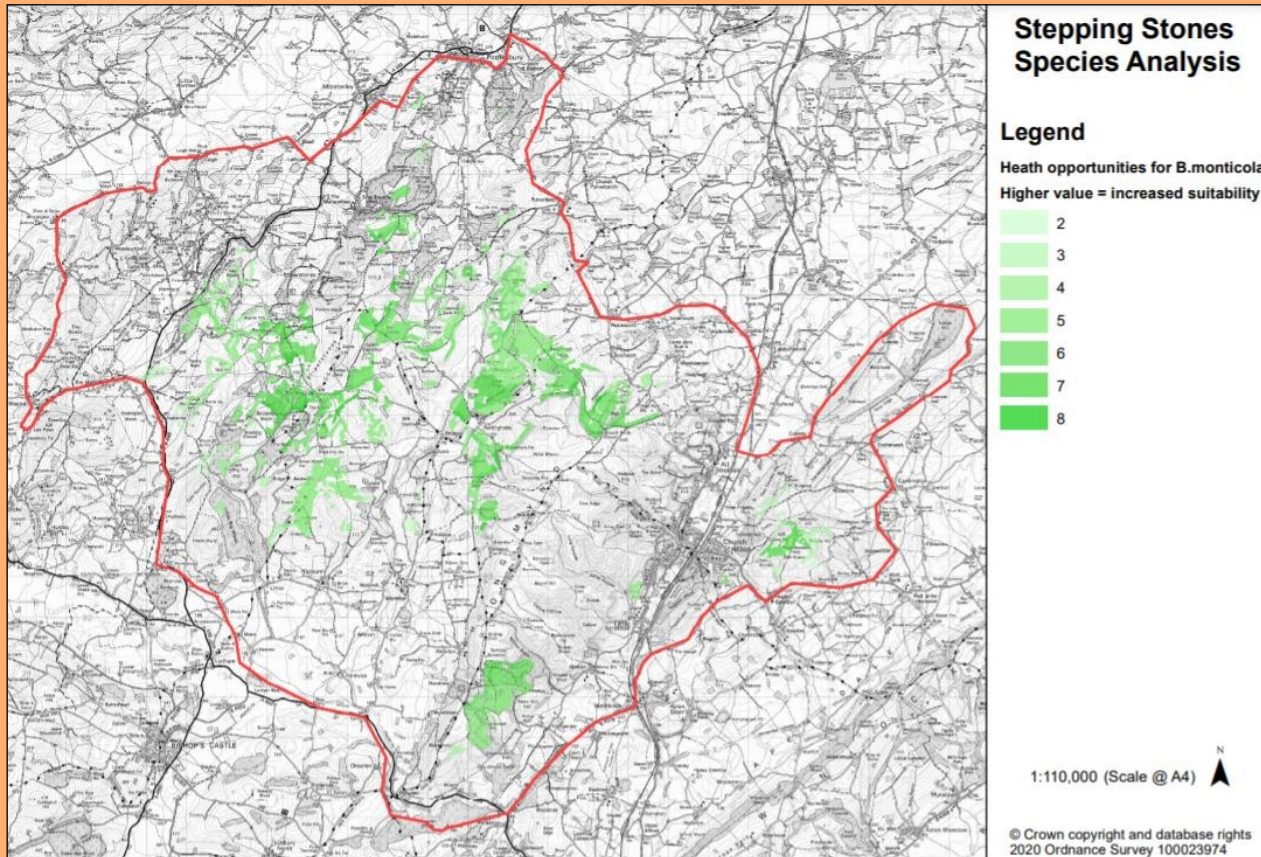


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Bilberry bumblebee heathland opportunity map

This map takes data from the heathland network opportunity mapping undertaken in the Stepping Stones project (this identified areas where soils etc. would be suitable for heath, and where creation or restoration of heath would be most beneficial to the habitat network). These areas were then given a score based on criteria relevant to *B. monticola*: altitude and proximity to known *B. monticola* populations.



The green areas on the map above show opportunities to create heathland which will directly benefit the bilberry bumblebee; darker shades being the most important.

The map will be used to guide planning of habitat creation, or restoration, by the Stepping Stones project working in partnership with farmers, landowners and the local community.

Conservation objectives for bilberry bumblebee

- Record the distribution of *B. monticola* and continue to monitor.
- Document forage species used by *B. monticola*.
- Increase the range of suitable habitat for *B. monticola* at known *B. monticola* sites with the aim of conserving and growing existing populations.
- Restore, or create, suitable habitat for *B. monticola* in proximity to existing populations to encourage colonisation and the formation of new populations.
- Enthuse local communities, farmers, and landowners about this rare bee through a structured program of engagement, management advice and practical support.



Bilberry bumblebee



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Conservation actions for bilberry bumblebee

- Expand the existing 'Bumblebees on the Mynd' citizen science project across the Stepping Stones area. These annual surveys add to our understanding of the species' distribution and habitat requirements. The Stepping Stones project will provide coordination and support these surveys.
- Recreation of heathland on part of the Middle Marches Community Land Trust's Norbury Hill landholding.
- Continued work at Belmore Farm to recreate flower-rich grassland bordering National Trust land on the Long Mynd.
- Continue management of Jinlye, Fir Tree Farm, Barns Farm and Ragleth meadows as species-rich hay meadow.
- Ensure appropriate grazing at existing sites (e.g. light to moderate grazing). Bilberry flowers on the previous years' growth, and continuous or heavy grazing will remove the buds (and next year's flowers). However, if grazing is too light it can be outgrown by heather and other vegetation which can shade it out and reduce flowering.
- Bracken control and seeding of bilberry and heather to aid heathland restoration on appropriate areas of National Trust land on the Long Mynd. E.g. Synald's Bank.
- Promotion of the heathland habitat opportunity map and actions for bilberry bumblebee when liaising with local farmers, landowners and smallholders.
- Prioritise meadow creation opportunities which are adjacent to (or within 300m of) existing bilberry bumblebee habitat.



Volunteers spreading green hay to aid hay meadow restoration at Jinlye meadow

Get further help and advice

Locally

Contact the Bumblebees on the Mynd project at bumblebeesonthemynd@gmail.com

Nationally

Contact the Bumblebee Conservation Trust bumblebeeconservation.org



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About Stepping Stones

Stepping Stones is an innovative landscape-scale conservation programme. The aim is to connect wildlife habitats by strengthening or creating 'stepping stones' and corridors of habitat between and around the Long Mynd and Stiperstones.

In practice, this means creating and linking areas of heathland, flower-rich grasslands and broadleaved woodland by a network of wildlife-rich hedgerows, road verges, hillsides and streamside wetlands.



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