Bumblebee Conservation Trust

Nature After Minerals
Working together to restore quarries for people and wildlife

Factsheet 12

Land management series

Managing mineral site restoration... for bumblebees

Minerals sites, both active and restored, offer excellent opportunities to provide habitat and foraging (feeding) opportunities for many of the twenty four species of bumblebee in the UK. They are hard working and versatile pollinators of both agricultural crops and many wildflower species. Bumblebees have been declining due to the widespread loss of wildflower grasslands and changes in agricultural practices. Nine species are thought to have considerably declined in range and two have become extinct in the last sixty years

Key Points

Bumblebees need **consistent flower rich habitat from late February to October - throughout the life of the colony.** They only store a few days food in the nest at a time and the nest will not produce new queens if food is scarce.

Bees need **nectar to provide energy and pollen to provide protein for larval development.**

Bumblebees have different tongue lengths so need a **range of flower shapes** to feed from:

- Short tongue bees like open flowers e.g. fruit trees, bramble, knapweed
- Long tongued bumblebees favour plants from the **figwort family** (eg: red bartsia, toadflax), the **legume family** (eg: red clover, tufted vetch, bird's foot trefoil), the **teasel family** (e.g. field scabious, devil's-bit scabious), the **daisy family** (e.g. knapweed) and the **dead nettle family** (eg: white dead nettle, hedge woundwort, black horehound)
- Bumblebees **nest in rough grassland, field margins or hedge banks**. Some species nest underground in old mouse or vole holes, while other species create a nest at the base of tussocky grass.

Bumblebees will **forage between 1 – 2km from the nest** to find food. Ideally nesting habitat should be close to good pollen and nectar sources.

Managing mineral site restoration

Aim to restore and re-create the priority semi natural habitats appropriate to the quarry site based on location, climate, aspect and soil type. Restoration should link to the surrounding landscape and connect or buffer existing high quality habitats.

Include varied topography in restoration design to create warm, south facing, sheltered microclimates that will benefit a range of invertebrates including bees. Re-create terraced slopes of varying degrees. Bare cliffs and steep sides with shallow substrates will maintain areas of bare soil and provide excellent nesting sites for burrowing solitary bees and wasps.

Managing mineral site restoration…
For bumblebees

Replacement topsoil is not generally needed as new habitats can establish directly on the substrate. If topsoil from diverse grassland has been retained prior to quarrying, this can be spread thinly during restoration to help re-establishment from the seed bank. Consider habitat creation using green hay where this is an option.

Natural regeneration of bare substrates can produce valuable pioneer grassland communities appropriate to local conditions. Mineral nutrient stress allows high wildflower diversity in place of competitive grasses and scrub. Colonising plants including birds-foot trefoil, kidney vetch, horseshoe vetch and common fleabane are valuable nectar and pollen sources. Small scale rotational scrapping of the substrate can help create a mosaic of bare ground and early successional vegetation. Allow areas of natural regeneration time to develop before considering seed addition. Rabbit grazing can help control scrub and rank grass growth where populations are not too high.

Scattered trees and scrub can provide useful foraging areas. Broom, willow and gorse scrub are important sources of nectar and pollen in early spring and summer.

Where sites are being restored to **woodland**, design in woodland glades and rides to provide good ground flora including primrose, bluebell and ground ivy. Include flowering shrubs in new woodlands and hedgerows such as crab apple, wild cherry, willow, honeysuckle and dog rose.

A series of land management factsheets can be found on our website. If you would like detailed advice about bumblebee-friendly management options for your land please contact your local Bumblebee Conservation Trust Conservation Officer.

Get in touch

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