How to Manage your Hedges for Bumblebees

Introduction

Hedges are more than just lines of shrubs. They usually have some sort of herbaceous growth at or near the base and many contain emergent trees. They may be set on banks and can have ditches along one or both sides. The best hedges have wide margins, often referred to as buffer strips or headlands, which are managed differently from the arable or grass crop. These five different components: mature/emergent trees, shrub layer, base/bank, ditch and margins, need to be thought about when deciding how to manage a hedge.

Bumblebees are almost wholly dependent upon flowers as a source of energy and protein. Some are generalists that will feed on a wide range of open flat flowers and have short tongues. Others have longer tongues and specialise in flowers such as red clover with nectar hidden at the end of a deep tube. It is the specialists that are most vulnerable to the loss of plant diversity in hedges. Bumblebees are representative of a much wider suite of insects that are important pollinators of wild plants as well as economically important crops.

Moss carder-bee *Bombus muscorum*
Photo: Rob Wolton

A Good Hedge for Bumblebees

A good hedge for bumblebees will be rich in nectar sources throughout the year. Hedges are especially important for the flowers that they provide in the spring when there are few flowers elsewhere in the countryside. Pussy willow attracts many queen bumblebees when they first emerge from hibernation. Hedges are often an important source of food at the end of the season too, when flower-rich grassland areas are being grazed or have been cut. A good hedge will also have well structured vegetation at the base and in the margins, to provide safe nesting sites. Tussocky grasses are especially favoured. The Queen bees will also use small holes and cavities in shaded hedge banks for nesting.

Flowering hedgebank
Photo: Rob Wolton

Uncut field margin
Photo: Rob Wolton

Hedge Components used by Bumblebees

Mature/Emergent Trees	✓
Shrub Layer	✓
Bank/Base	✓
Ditch	✓
Margin	✓

Key Management Tips

The value of hedges for bumblebees can be improved by:

Tussocky grass margin
Photo: Rob Wolton

- Increasing landscape variety by extending the network of hedges and associated field margins.

- Extending field margins and ensuring that they contain suitable nectar and pollen sources. This can be achieved by sowing wildflower or specialist seed mixes that are dominated by flowers such as white dead-nettle, red clover, bird's-foot-trefoil, woundworts, ground ivy, knapweed, foxglove and borage. Non-native *Phacelia* is sometimes used to supplement nectar sources for bumble-bees.

- Allowing structural features to develop such as tussocks and aggregations of twigs and branches that provide cover for small mammals whose nests may be used later on by bumblebees.

- Increasing diversity of hedges by including a variety of flowering shrubs when gapping up. Suitable shrubs might include willows, especially goat willow, grey willow and crack willow, dogwood and wild privet as well as traditional hawthorn and blackthorn.

- Planting suitable nectar trees such as field maple and small-leaved lime where the landscape is suitable. In some landscapes sycamore and European lime could also be considered (do not plant exotic limes such as silver lime, which has narcotic effects on bees).

- Cut ditch banks in late autumn and winter months.

Ecology of Bumblebees

Bumblebees normally form colonies with a single 'queen' produced by the previous year's colony and fertilised by a male the previous year. The new queen occupies a suitable nesting site in the spring after hibernation in the base of the hedge. Nests may be in old animal burrows, grass tussocks or amongst shelter at the base of shrubs. The colony produced by this single queen gradually grows during spring and summer months and gains strength as the number of workers increases. The queen lays single eggs into new brood cells that are provisioned by the workers. The resulting larvae go on to produce further workers as well as new queens and males. Bumblebee numbers peak in July/August when the colony produces a combination of workers, queens and males before gradually dying off in the autumn.

Queen buff-tailed bumblebee *Bombus terrestris* searching for nesting sites in a hedge bank in spring
Photo: Rob Wolton

Bumblebees are important pollinators that are essential to the maintenance of wild plant populations and to some commercial crop production. They will visit the flowers of many trees and shrubs and a wide variety of the flowers that occur in field margins and along the banks of ditches, as well as crop plants when in flower.

The bumblebee fauna of hedges mainly comprises widely distributed and unspecialised species. There are, however, five bumblebees listed as priority species under Section 41 (England) and Section 42 (Wales) of the Natural Environment and Rural Communities (NERC) Act (2006), the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment Act (Northern Ireland) 2011, that may occasionally use hedges. These are: brown-banded carder-bee *Bombus humilis*, large or moss carder-bee *B. muscorum*, red-shanked carder-bee *B. ruderarius*, large garden bumblebee *B. ruderatus* and shrill carder-bee *B. sylvarum*.

Further information

Bumblebee Conservation www.bumblebeeconservation.org
www.bumblebeeconservation.org/images/uploads/Resources/BBCT_Land_Factsheet_6_Managing_hedges_edges.pdf
www.bumblebeeconservation.org/images/uploads/Resources/BBCT_Bumblebee_Factsheet.pdf
Bees, Wasps and Ants Recording Scheme www.bwars.com
Hedgelink leaflet (2013)*The Complete Hedge Good Management Guide*. www.hedgelink.org.uk

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