



## RARE BUMBLEBEES

### *Bombus humilis* and *B. ruderatus*

#### 1. INTRODUCTION

This action plan focuses on two of the sub-region's rarest surviving bumblebees, the brown banded carder bee (*Bombus humilis*) and the large garden bumblebee (*Bombus ruderatus*). Both species have shown severe national declines and are therefore national BAP species. Warwickshire, like many other parts of central Britain, once supported fifteen species of bumblebee, and most of these were widespread here if not actually common. Today only six species remain common.



*B. ruderatus* © Warwickshire Museum

*Bombus humilis* (the brown-banded carder bee) closely resembles the chestnut-coloured common carder bee (*B. pascuorum*) but queens emerge later (typically May). It nests at the base of long vegetation such as coarse grasses. *Bombus ruderatus* (the large garden bumblebee – but not a garden species!) has huge and distinctive queens, but workers are difficult to distinguish from the common small garden bumblebee (*B. hortorum*) and like *B. humilis*, it emerges relatively late. In both species, worker production seems to be timed to take advantage of the mid-summer flowering peak of plants with particularly deep corollas such as birds-foot trefoils, kidney vetch, clovers and labiates. Queens of *B. ruderatus* also favour white dead nettle and late spring shrub blossom (e.g. late willow and crab apple). Males of both species favour thistles and knapweeds. These bumblebees seem to require very large flower-rich sites or landscapes that provide much flower-rich habitat (especially in coastal districts).

Other scarce bumblebees still present in Warwickshire are *B. ruderarius* (the red-shanked carder bee) which has requirement similar to the above two, and *B. jonellus* (the heath bumblebee), which has been recorded at some acidic sites in the north. The extinct species here are *B. distinguendus*, *B. muscorum*, *B. soroensis*, *B. subterraneus* and *B. sylvarum*. *B. subterraneus* is believed to have become extinct in Britain as a whole in the late 1900's.

#### 2. OUR OBJECTIVES & TARGETS

	Target
A. To maintain up-to-date listings of sites scarcer bumblebees in the sub-region.	2002-2015
B. To maintain the size and range of known populations of Warwickshire's scarcer bumblebees.	2002-2015
C. To increase the size and range of scarce bumblebee populations by doubling the number of sites.	by 2010
D. To raise awareness of rare bumblebees, their life cycles and habitat requirements.	2002-2015

**ASSOCIATED HABITAT PLANS**

- Lowland Neutral Grassland
- Quarries & Gravel Pits
- Field Margins
- Disused Industrial & Railway Land

**ASSOCIATED SPECIES PLANS**

- Small Blue
- Dingy Skipper
- Cuckoo Bee
- Chalk Carpet
- Dotted Bee-fly

**3. NATIONAL BAP OBJECTIVES & TARGETS**

- *Maintain populations at all known sites*

**4. CURRENT STATUS**

Agricultural intensification and the associated loss of flower-rich grasslands has resulted in disappearances of *B. humilis* and *B. ruderatus* from over 95% of their known localities nationally over the past 100 years leaving them vulnerable to national extinction. However, Warwickshire's populations suggest that large, sensitively managed brown-field sites such as old limestone quarries may help arrest this decline.

Both bumblebees had long been considered extinct in Warwickshire until 1995 when a single *B. humilis* worker was discovered on flower-rich limestone grassland at Frankton Fields near Princethorpe, and 1999, when several *B. ruderatus* queens were seen near the old fish pond at Ditchford Frary, near Shipston-on-Stour. Then in May 2001, queens of both species were encountered alongside each other at Southam Quarry (an actively-worked Blue Lias quarry), and these populations have been observed throughout 2001 and 2002. They appear to be small and at the very limit of viability. They may be using nearby sites such as Stockton Cutting and associated quarries or local disused railway lines, though searches here have not yet produced records. A possible worker of *B. ruderatus* was also taken at Bishops Hill in 1993.

Nationally, both species show a widespread former range extending into northern England followed by a massive recent decline that has resulted in an almost complete disappearance from Central Britain and a mainly coastal distribution in the case of *B. humilis*. *Bombus ruderatus* is classified as Nationally Scarce (Falk, 1991) and *B. humilis* is informally categorised as Nationally Local (in the Recorder database) and Regionally Scarce by the Warwickshire Biological Records Centre, though given the extent of their declines, they are now both candidates for Red Data Book listing.

**4.1 Legal and Policy Status**

No legal protection exists for the bees themselves, but some of the sites are Sites of Special Scientific Interest (SSSIs) or Sites of Importance for Nature Conservation (SINCs) or proposed SINCs. As Nationally or Regionally Scarce species, both bees can be used as point-scorers for SSSI and SINC designation.

## 4.2 Current Factors Affecting The Species

- **The threat of development** facing many biodiverse brown-field sites.
- **Continuing loss of flower-rich, semi-improved grasslands**
- **Scrub encroachment** and other successional processes that result in the loss of extensive flower-rich habitat with legumes and labiates.
- **Land-filling or unsympathetic landscaping** of sites.
- **Excessive disturbance of sites** where this leads to catastrophic habitat loss e.g. vegetation clearance, new quarrying regimes, new grass-cutting or grazing regimes (though piecemeal disturbance can be beneficial by creating new flower-rich habitat and more diverse conditions).
- **The lack of formal designation** (SSSI or SINC) for the known sites.

## 5. CURRENT LOCAL ACTION

- Ongoing entomological survey work by Steven Falk, Warwickshire Museum is clarifying our understanding of the scarcer bumblebees in the county.
- The Habitat Biodiversity Audit provides a very detailed overview of the extent of flower-rich habitats in the county and indicates places where stewardship schemes might be used to encourage spread of the bees .
- Ongoing SINC designation should soon allow assessment and formal designation of important bumblebee sites, and possibly the consideration of some new SSSIs.

## 6. PROPOSED LOCAL ACTIONS (some dates amended - Core Steering Group - Feb 2008)

ACTION	Lead	Partners	By	Meets objective
<b>Policy &amp; Legislation</b>				
<b>PL1.</b> Ensure that all relevant policy is included in Local Planning Documents (see ODPM Planning Policy Statement PPS9) to safeguard and promote the scarcer bumblebees and their habitat.	LBAPSG	WM WWT RBC SDC	2002-2015	B
<b>PL2.</b> Designate qualifying sites as SINC's or SSSIs (as appropriate) at the earliest instance.	WSP	NE WWT	2004	B
<b>PL3.</b> Consider the habitat requirements of scarce bumblebees in the management agreements of agri-environment schemes (e.g Countryside Stewardship and Woodland Grant).	NE	WM FC	2002-2015	B

Site / Species Safeguard & Management				
<b>SM1.</b> Contact owners/managers of important bumblebee sites and explain the significance of the populations on their land.	WM	NE SDC FWAG LBAPSG RBC WSP WWT	2004	B
<b>SM2.</b> Where possible, prepare and implement site management plans that cater for the needs of the scarcer bumblebees, and attempt to increase the quality of such sites for the bee (bearing in mind that known sites have a broader ecological value).	WM	NE SDC FWAG LBAPSG RBC WSP WWT	2006	B
<b>SM3.</b> Work with quarrying companies and other key landowners to produce new sites suitable for scarcer bumblebees and to improve the quality of habitat around existing colonies (integrate with the promotion of a much broader nature conservation agenda).	WM	WWT NE	2002- 2015	C
<b>SM4.</b> Identify opportunities for funding site management and creation, including usage of the Aggregates Levy Sustainability Fund.	WM	NE WWT	2004	B, C
<b>Advisory</b>				
<b>A1.</b> Provide advice to landowners, managers and local authorities with respect to best practice management for the benefit of scarce bumblebees.	WM	NE SDC FWAG LBAPSG RBC WSP WWT	2002- 2015	B, C
<b>Research &amp; Monitoring</b>				
<b>RM1.</b> Maintain an up-to-date listing of scarce bumblebee sites and monitor losses and gains.	WM		2002- 2015	A
<b>RM2.</b> Monitor the effectiveness and success of habitat management, enhancement and creation	WM		2002- 2015	B, C
<b>RM3.</b> Encourage more local naturalists to record groups such as bumblebees, even if this just amounts to key species within their local patch.	WM		2004	A, D

Communication, Education & Publicity				
<b>CP1.</b> Raise the profile of scarce bumblebees in Warwickshire, using them as flag-ship species for promoting flower-rich habitats, brown-field issues and the importance of large sites and landscape quality.	WM	NE SDC FWAG LBAPSG RBC WSP WWT	2004	A, B, D
<b>CP2.</b> Maintain communication with the Bee, Wasp and Ant Recording Society (the national recording scheme) and the relevant staff/representatives of English Nature.	WM		2002- 2015	A, B, C

**Abbreviations:**, NE – Natural England, FWAG – Farming & Wildlife Advisory Group, LBAPSG – Local Biodiversity Action Plan Steering Group, RBC – Rugby Borough Council, SDC – Stratford District Council, WM - Warwickshire Museum, WSP – Wildlife Sites Project, WWT – Warwickshire Wildlife Trust.

## 7. REFERENCES (also see LBAP Bibliography web page)

Falk S J (1991) *A review of the scarce and threatened bees, wasp and ants of Great Britain*. Research & survey in nature conservation. No. 35. Natural England, Peterborough.

## 8. FURTHER INFORMATION (see separate Links web page for links to web sites)

UK Biodiversity Action Plan for *B. humilis* no.153  
UK Biodiversity Action Plan for *B. ruderatus* no.15  
Bumblebee Conservation Trust

Farmed Environment Company – Buzz Project  
Agricultural research for sustainable land management, Rothamsted  
National Bumblebee Nest Survey, Rothamsted Research, Harpenden, Herts. AL5 2QJ

Edwards, M. & Jenner, M. (2005) *Field Guide to the Bumblebees of Great Britain & Ireland*. Countryside & Garden Conservation Series. Ocelli Ltd.

Benton, T. (2006) *Bumblebees*. New Naturalist Series. Collins.

Feltwell, J. (2006) *Bumblebees*. Booklet about attracting bumblebees to the garden. Wildlife Matters, Henley's Down, Battle, E.Sussex

## 9. CONTACT

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