



DOTTED BEE-FLY

Bombylius discolor

1. INTRODUCTION

Readers may be familiar with the common dark-edged bee-fly *Bombylius major* which often comes into gardens but there is a much scarcer species with spotted wings and a darker body, the dotted bee-fly *B. discolor*, that occurs sparingly in the south of the county. It is associated with larger colonies of spring-flying mining bees, especially species like *Andrena cineraria* and *Aflavipes*, which nest in very short turf or bare ground in well drained, sunny areas (e.g. south facing slopes and along footpaths). The female bee-flies can be found hovering around such colonies flicking their eggs into the nesting holes. The larvae are parasitoids of the *Andrena* grubs in their underground nest cells, seemingly waiting until the grubs are fully-grown before devouring them. In Warwickshire the adults fly from late March to late April and feed on plants like ground-ivy, violets and coltsfoot. Local sites include old limestone quarries, disused railways in limestone areas (where these support plentiful open habitat) and gorse-clad hillsides in the Cotswold fringe (where land-slipping and grazing exposes soil).



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2. OUR OBJECTIVES AND TARGETS

	Target
A. To maintain up-to-date listings of sites	2004-2015
B. To maintain the size and range of known populations of <i>B. discolor</i> .	2004-2015
C. To increase the population size and range by doubling the number of sites in the sub-region.	2010
D. Raise awareness of the dotted bee-fly, its life cycle and habitat requirements.	2004-2015

ASSOCIATED HABITAT PLANS

- Quarries & Gravel Pits
- Lowland Calcareous Grassland
- Disused Industrial & Railway Land

ASSOCIATED SPECIES PLANS

- Chalk Carpet
- A Cuckoo Bee
- Rare Bumblebees
- Small Blue
- Dingy Skipper

3. NATIONAL BAP OBJECTIVES & TARGETS

- *Maintain populations at all known sites.*
- *Enhance population size at the more viable sites*
- *Ensure that there are 20 strong populations, representative of the historic geographic range by 2010.*

4. CURRENT STATUS

A very localised southern species (graded as Nationally Scarce by Falk, 1991) with records extending north to Worcestershire, Warwickshire and Cambridgeshire (for most recent national map see Anon, 1999). In Warwickshire, it was originally identified from Oxhouse Farm, Combrook, then Ufton Fields, but appears to have become extinct at both these sites due to scrub encroachment. However, since the mid 1990s, it has been recorded from Harbury Spoilbank and the nearby Bishops Bowl Quarry, Gredenton Hill and the nearby Avon Hill Quarry, Brailes Hill and the nearby Brailes Castle, and Ratley Grange Quarry on Edge Hill (a RIGS site). Most populations seem quite small though permanent. However, recent disturbance at Ratley Grange since 2001 has probably eradicated it here. The Brailes Hill colony is a particularly strong one, with many dozen seen on a single day in April 1997. That year seems to have represented an upsurge in its status within many parts of its range (such upsurges are well known in *B.major*) with several new sites discovered in neighbouring parts of the Cotswolds. It has also been searched for carefully at several other limestone quarries and suitable looking hillsides in recent years so far without success, though a presence beyond these 7 modern sites is felt likely, particularly in the Edge Hill-Avon Dassett-Farnborough area and the Brailes-Whichford-Long Compton area.

4.1 Legal and Policy Status

No legal protection for the fly itself, though Harbury Spoilbank is a biological SSSI (part of Harbury Railway Cutting SSSI) and most of the other sites are County Ecosites (though not formally-designated SINC). However, it should be noted that the Brailes Castle and Gredenton Hill populations are associated with floristically poor sheep-grazed hillsides with scattered gorse scrub, a habitat type that is not neatly catered for by any HAPs, and hard to designate as SINC quality (beyond its value for mining bee colonies and associated insects). As a Nationally Scarce species, it can be used as a point-scorer for SSSI and SINC designation.

4.2 Current Factors Affecting The Species

- **Scrub encroachment and other successional processes** that result in the loss of large mining bee colonies.
- **Ongoing quarrying** where this results in catastrophic losses to host nesting colonies and foraging areas (piecemeal disturbance by contrast is probably beneficial).
- **Land-filling or unsympathetic landscaping** of quarries and their associated spoil-heaps.

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- **Damage to gorse-clad hillsides** supporting strong mining bee colonies through gorse removal, fertilising and sometimes conversion to arable.
- **Removal of blossom-rich hedges and other habitats with plentiful spring flowers** near to mining bee colonies.
- **The lack of formal designation** (SSSI or SINC) for the majority of known sites, coupled with the uncertain future facing many quarries and other brown-field sites.

5. CURRENT LOCAL ACTION

- Ongoing entomological survey work by Steven Falk (Warwickshire Museum) is clarifying our understanding of the bee-flies status in the County, as well as that of its host bees. This has been augmented by several visits to the area in 2002 by David Gibbs who has been studying the fly nationally for English Nature.
- Harbury Spoilbank, within the Harbury Railway Cutting SSSI, is currently the subject of regular scrub clearance that has increased the site's suitability for the bee-fly.
- Ongoing SINC designation should soon allow assessment and formal designation of known *B. discolor* sites, and possibly the consideration of some as new SSSIs.

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

ACTION	Lead	Partners	By	Meets objective
Policy & Legislation				
PL1. Ensure that all relevant policy is included in Local Planning Documents (see ODPM Planning Policy Statement PPS9) to safeguard and promote the bee-fly and its habitat.	LBAPSG	WM WWT WDC SDC	2004-2015	B
PL2. Designate known dotted beefly sites as SINC's or SSSIs (as appropriate) at the earliest instance (most such sites have interest beyond simply the presence of the fly).	WSP	WDC SDC WWT NE	by 2006	B, D
PL3. Consider the habitat requirements of the dotted bee-fly in the management agreements of agri-environment schemes.	NE	WM	2004-2015	B

Site / Species Safeguard & Management				
SM1. Contact owners/managers of known <i>B. discolor</i> sites and explain the significance of the population on their land.	WM	NE SDC WDC WSP WWT	2010	B, D
SM2. Where possible, prepare and implement site management plans that cater for the needs of the bee-fly and its hosts, and attempt to increase the quality of such sites for the fly (bearing in mind that most known sites have a much broader ecological value).	WM	NE WWT	2004-2015	B, C
SM3. Work with quarrying companies and other key landowners to produce new sites suitable for the bee-fly (a process that can be integrated with the promotion of a much broader nature conservation agenda).	WM	NE SDC WDC WSP WWT	2004-2015	C
SM4. Identify opportunities for funding site management and creation.	WM	NE	2004-2015	C
Advisory				
A1. Provide advice to landowners, managers and local authorities with respect to best practice management for the benefit of the bee-fly (link to SM1).	WM	NE SDC WDC WSP WWT	2010	B, C, D
Research & Monitoring				
RM1. Maintain an up-to-date listing of <i>B. discolor</i> sites and monitor losses and gains.	WM		2004-2015	A
RM2. Monitor the effectiveness and success of any habitat management, enhancement and creation undertaken.	WM		2004-2015	B, C
RM3. Encourage more local naturalists to record groups such as flies, even if this just amounts to key species within their local patch.	WM	NE SDC WDC WSP WWT	2004-2015	A
Communication & Publicity				
CP1. Raise the profile of the dotted bee-fly in Warwickshire, using it as a flag-ship species for limestone habitats, brown-field issues and the complicated inter-dependence of bees, their parasites and the habitats they occupy.	WM		2004-2015	B, C

CP2. Maintain communication with the Larger Brachycera recording scheme (which covers bee-flies) and the relevant staff/representatives of English Nature.	WM	2004-2015	A, B, C
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Abbreviations: NE – Natural England, LBAPSG – Local Biodiversity Action Plan Steering Group, SDC – Stratford District Council, WDC – Warwick District Council, WM – Warwickshire Museum, WSP – Wildlife Sites Project, WWT – Warwickshire Wildlife Trust.

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

Anon (1999) *Bombylius discolor* (dotted bee-fly) Action Plan In: UK Biodiversity Group Tranche 2 Action Plans. Volume IV – invertebrates. Natural England, Peterborough.

Falk, S.J. (1991) *A Review of the scarce and threatened flies of Great Britain (part 1)*. Research and survey in nature conservation. No 39. Natural England, Peterborough.

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

UK Biodiversity Action Plan no.157

9. CONTACT

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