

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

(Line Drawing of Species)

Summary

Bumblebees are perhaps our best-loved and best-known group of insects. Over the last 50 or so years, Britain is estimated to have lost over 50% of its honeybee (*Apis mellifera*) and bumblebee population. The main cause of this loss is from modern agricultural practices specifically through habitat loss and pesticide use.

Action Plan Aim

To identify and maintain healthy population sizes of the Urban Bumblebee by raising awareness of its habitat in urban Lancashire.

Species Description

Bumblebees are large, hairy insects with a lazy buzz and a clumsy but strong (bumbling) flight. Many of them are black and yellow. They belong to the genus *Bombus*. Fourteen species of true bumblebee are known from the British Isles. These nest in cavities such as vacated small mammal burrows. The related cuckoo bees are parasitic dwellers in bumblebee nests. Six species are known from the British Isles. There are also five species of carder bee. These nest above ground in grass tussocks.

Bumblebees forage for pollen and nectar throughout the summer months, from March to September. The colonies last for a year, with new queens hibernating through the winter and establishing fresh colonies the following year.

Along with ladybirds and butterflies, bumblebees are perhaps our best-loved and best-known group of insects. This makes them particularly valuable as a “flagship” species for all the other invertebrates that dwell in urban allotments, parks and gardens.

Main Habitat(s)

Urban Bumblebees live in species-rich neutral grassland, calcareous grassland, urban parks, gardens, allotments and dunes.

National Status

During the 1970s, considerable effort went into mapping the distributions of British bumblebees. The Bumblebee Distribution Maps Scheme produced an atlas of these insects for Great Britain and Ireland (Alford, 1980). This project drew particular attention to the fragility of populations of these pollinators

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

(Alford, 1973). It has also provided useful material for advancing an understanding of the factors that may have brought about these changes.

Over the last 50+ years, Britain is estimated to have lost over 50% of its honeybee (*Apis mellifera*) and bumblebee population. An estimated half of this figure has resulted from modern agricultural practices, specifically through direct exposure to pesticides and loss of habitat (Pretty *et al* 2000).

Five *Bombus* species are included in the UK Biodiversity Action Plan:

Great Yellow Bumblebee (*B. distinguendus*) - now only on Scottish islands

Brown-banded Carder Bee (*B. humilis*) - still widespread but declining

Large Garden Bumblebee (*B. ruderatus*) - on the verge of extinction

Short-haired Bumblebee (*B. subterraneus*) - possibly extinct

Shrill Carder Bee (*B. sylvarum*) - on the verge of extinction

Regional Status

The distribution of bumblebee species in North West England may be broadly categorised as follows:

- **Ubiquitous Species (most likely to occur in urban gardens):** *B. hortorum*, *B. pascuorum*, *B. pratorum*, *B. lucorum*, *B. terrestris*, and *B. lapidaries*.
- **Local Species (restricted in habitat and distribution):** *B. monticola*, *B. jonellus*, *B. soroensis*, *B. muscorum*, and *B. magnus*.
- **Parasitic Species (Cuckoo Bees):** *B. campestris* and *B. sylvestris* occur quite commonly. *B. bohemicus* is mainly north-western (Cumbrian) in its distribution and now more rarely recorded. In the past it appeared to be the most common cuckoo bee species in NW England. *B. (Psithyrus) vestalis* is more southern and has become more frequent; but *B. barbutellus* and *B. rupestris* are rarely recorded (Newton, J. pers. comm. 2004).

Local Status

There is little recent, and no comprehensive distribution data for all of administrative Lancashire, Blackburn with Darwen Borough and Blackpool Borough (Clee, *pers. comm.*, 2004). The Preston and East Lancashire areas appear to be particularly poorly recorded. The bulk of the county's urban habitat is located in these very areas.

The Wildlife of Lancashire (in press), which – in this context – includes northern Greater Manchester and North Merseyside, describes distribution

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

and abundance as follows (with some additional text from Newton J., 2004, pers. comm.):

“Bumblebees which are common in Lancashire are:

Bombus lucorum with one yellow band on the thorax, another on the abdomen and a white tail.

B. terrestris, similar, but with a brown tail in the queen.

B. hortorum, similar, but the yellow abdominal band extends onto the thorax, with a white tail.

B. pratorum, two (or one) yellow bands and a red tail.

B. lapidarius, all black with a red tail. (Males have a yellow band on the thorax)

B. pascuorum, sandy coloured, also known as the Carder Bee.

Current factors affecting the Species

- Habitat Loss
- Brownfield Development
- Pesticide Use
- Climate Change
- Horticultural Fashion

Habitat Loss

Bumblebees appear to favour vegetation characterised by open flower-rich habitats with a lack of recent or drastic disturbance. These sites also support a greater abundance of the ubiquitous species than other habitats, so they appear to be more favourable to all bumblebees, irrespective of whether they belong to the regionally and locally restricted species or not (Williams, 1988).

Changes in agricultural practice, including an increase in the use of chemical fertiliser and pest and weed control, has led to a profound loss of semi-natural habitat in rural areas, particularly in the lowlands. Upland habitats have been degraded by intensification of sheep grazing and deposition of acid rain and nitrogen compounds.

Rapid urbanisation has had a profound effect on insect populations. The ubiquitous species of bumblebees would be expected to remain abundant, or even increase in abundance, in mature gardens in towns, though it is possible that shortages of food immediately after land clearance for building may have eliminated more local species.

Brownfield development

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

Brownfield development of previously developed land and now derelict land can mean the loss of important local food sources and habitats. These sites are often replaced with inappropriate landscaping schemes that are of limited value to wildlife in general and bumblebees in particular.

Pesticide Use

The introduction of cheaper and more effective non-selective insecticides may have led to declines in bumblebee populations in urban areas through increasing horticultural use.

Climate Change

Bumblebee distribution limits seem to show some relationship to differences in summer climate associated with latitude and altitude, though they are more tolerant of cold than many other pollinating insects and do not forage when temperatures are high. It is possible that several species will be adversely affected by global warming.

Horticultural Fashion

Many modern horticultural cultivars lack scent and do not produce nectar. These have tended to replace “old-fashioned” varieties and this will have reduced the available food supply for bumblebees in gardens.

The fashion for decking and paved gardens, and for plants grown for foliage rather than blooms, has reduced the number of flowers available for bumblebees.

General ‘tidying up’ may remove the undisturbed sites required for nesting and over-wintering.

Current Action / Mechanisms

- *Policy*
No policy initiatives are specific to bumblebee conservation. Agri-environment and community environment grant-aided projects may deliver incidental benefits.
- *Site Safeguard*
No sites in Lancashire are or have been designated for bumblebee species. Current Biological Heritage Site selection criteria *In3* and *In4* would allow for the identification of such sites, but systematic recording of *Bombus* spp. throughout Lancashire does not yet appear to be advanced sufficiently to allow their actual application.
- *Land Management*

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

No direct measures specific to the conservation of bumblebees are known to be in effect in Lancashire.

- *Advisory*

No direct measures to advise relevant landowners/managers in Lancashire on appropriate management are known to be underway or to have been undertaken.

- *Research and Monitoring*

Some incidental recording by a few experienced volunteers is being undertaken in northern Lancashire.

- *Public Relations*

In 2003, English Nature and the National Trust launched a public campaign throughout England, Northern Ireland & Wales to raise the profile of bumblebees and their dependence on sympathetic horticultural practice.

No direct initiative aimed at raising general awareness of bumblebees and their conservation is underway specifically in Lancashire, or known to have been underway.

Species Targets

Target	Area	Measure	Timescale
Establish distribution of Bumblebees in urban Lancashire	Urban Lancashire	Distribution established	2015
Deliver optimum management of Bumblebee habitat in urban Lancashire	Urban Lancashire	Optimum management delivered	2015
Raise awareness of Bumblebees and their conservation in urban Lancashire	Urban Lancashire	Awareness raised	Ongoing

Proposed Actions

Action (priority: H, M, L)	Area	Measure / Milestone	Partners	Timescale
<i>Research and monitoring</i>				
Carry out sample survey of	Urban Lancashire	Sample survey undertaken.	LCC (museums),	2008

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

Bumblebees in urban areas of Lancashire (H)			LA's, Liverpool Mueseums, BWARS, NHSs, TWT	
Site safeguard and management				
Increase availability of nectar through the season by promotion of sympathetic planting schemes in public and private gardens and allotments (M)		Planting schemes promoted.	LCC, LAs, TWT, public and private landowners & managers, Landlife	Ongoing
Species protection and management				
Establish a centralised database to be used to enable assessment of distribution patterns and correlations (H)		Database created.	LCC, LA's TWT, NHS, NBN	2010
Promote the retention or provision of suitable nesting and over wintering sites in public and private gardens and allotments (M)		Species information leaflet produced aimed at land managers and gardeners.	LCC, LAs, TWT, public and private landowners & managers	2010
Advisory				
Raise skills level for Bumblebee ID in Lancashire by establishing and advertising an ID course (H)		Annual Bumblebee ID course established	LCC (museums), LA's, Liverpool Museums, BWARS, NHSs, TWT	2010
Increase public knowledge of sympathetic land management for Bumblebees by providing demonstration gardens and allotments (M)		Demonstration sites identified. Programme of events established at demonstration sites.	TWT, LAs	2010
Publicity				
Promote		Website	TWT, EN,	2010

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

Bumblebees (including cuckoo bees) through leaflets, websites and other means, as a 'flagship' urban invertebrate species and highlight ways in which the public can assist Bumblebees through nest site provision and / or gardening practices (M)		updated. Species leaflet produced.	LCC, BBC, BDBC	
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Related Action Plans

Lancashire Plans

Species-rich Neutral Grassland; Calcareous Grassland; Dunes; People.

Lancashire Urban Plans

Gardens & Backyards; Allotments; Urban Parks; Amenity Grassland & Sportsfields.

References and additional reading

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LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

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Web Sites:

The Bees, Wasps & Ants Recording Society (BWARS):
<http://www.bwars.com/>

The Bumblebee Pages: <http://www.mearns.org.uk/mrssmith/bees/bees.htm>

Natural History Museum, London: <http://www.nhm.ac.uk/entomology/bombus/>

Oxford Bee Company Ltd: <http://fp.oxbeeco.f9.co.uk/>

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Abbreviations

BBC = *Blackpool Borough Council*

LANCASHIRE BAP TEMPLATE FOR SPECIES ACTION PLANS

URBAN BUMBLEBEES (*Bombidae*)

BWARS = *Bees, Wasps & Ants Recording Society*
BDBC = *Blackburn with Darwen Borough Council*
EN = *English Nature, Cheshire to Lancashire Team*
LAs = *Local Authorities*
LCC = *Lancashire County Council*
NBN = *National Biodiversity Network*
NHSs = *local Natural History Societies*