

Shrill carder bee (*Bombus sylvarum*) in Ireland

2015



STATUS

World distribution

Palearctic region

Status

Bombus sylvarum is declining across Northern Europe and is a Biodiversity Action Plan species in the UK. Declines in Britain have been more severe than in Ireland. The Burren, where the species is widespread but not common, now represents by far the most important location for the species within Ireland and Britain.

Red List status in Ireland

Endangered

Threat of extinction

Loss of unimproved flower-rich grasslands, field margins and hedgerows

The widespread replacement of hay with silage in the agricultural landscape, which results in earlier and more frequent mowing and a reduction in late summer wild flowers has played a major role in its decline.

HABITAT & ECOLOGY

Habitat

Currently associated with unimproved flower rich grasslands, particularly in the Burren, but previously known from a wider range of flower rich habitat types.

Ecology

Long-tongued, late-emerging species associated with meadow floras and open grassy habitats. It feeds on a range of plants but has a long tongue and therefore forages flowers with long corollas because they can reach the nectar deep in the flower head. Requires extensive areas which support a variety of flowering plants, especially those in the Red Clover and Knapweed families.

Flight period May to October but will be observed in greatest numbers in July-August when the worker brood is active.

Nests underground at low densities

SURVEYING

How do I survey?

Ideally survey in July-August as this is when worker brood is most active. Does not require an expert.

Key Identification Features:

Bombus sylvarum is grey-olive green in colour. It has a red-orange tail and a distinctive dark band on the thorax (queens, workers and males have the same colour pattern). It has a high pitched buzz during flight although this can be hard to distinguish without some experience.

If attempting to discover new populations it is recommended to check species rich grasslands, particularly if these occur in general areas where the species has previously or currently exists.

If I find a population what should I do?

If you find a population of *B. sylvarum* please contact the Data Centre directly:

ufitzpatrick@biodiversityireland.ie If it is a healthy population (one where you see multiple workers foraging) we will attempt to incorporate it into the Bumblebee Monitoring Scheme. This will allow us to track changes over time and generate an index of abundance of the species at the site.

CONSERVATION

What does a site need to support *Bombus sylvarum*?

1. A range of forage sources throughout the flight period of the colony. Vetches, Clovers, Dead-nettles and Red Bartsia are essential sources of pollen and nectar.
2. Good potential for nesting. Nests are established underground, sometimes in the disused nests of small mammals like mice.
3. Outside the Burren, other current populations of the species are extremely fragmented. Given the restricted normal dispersal capability of bumblebees, it is unlikely to colonise new areas unless these are within close proximity to an existing site.

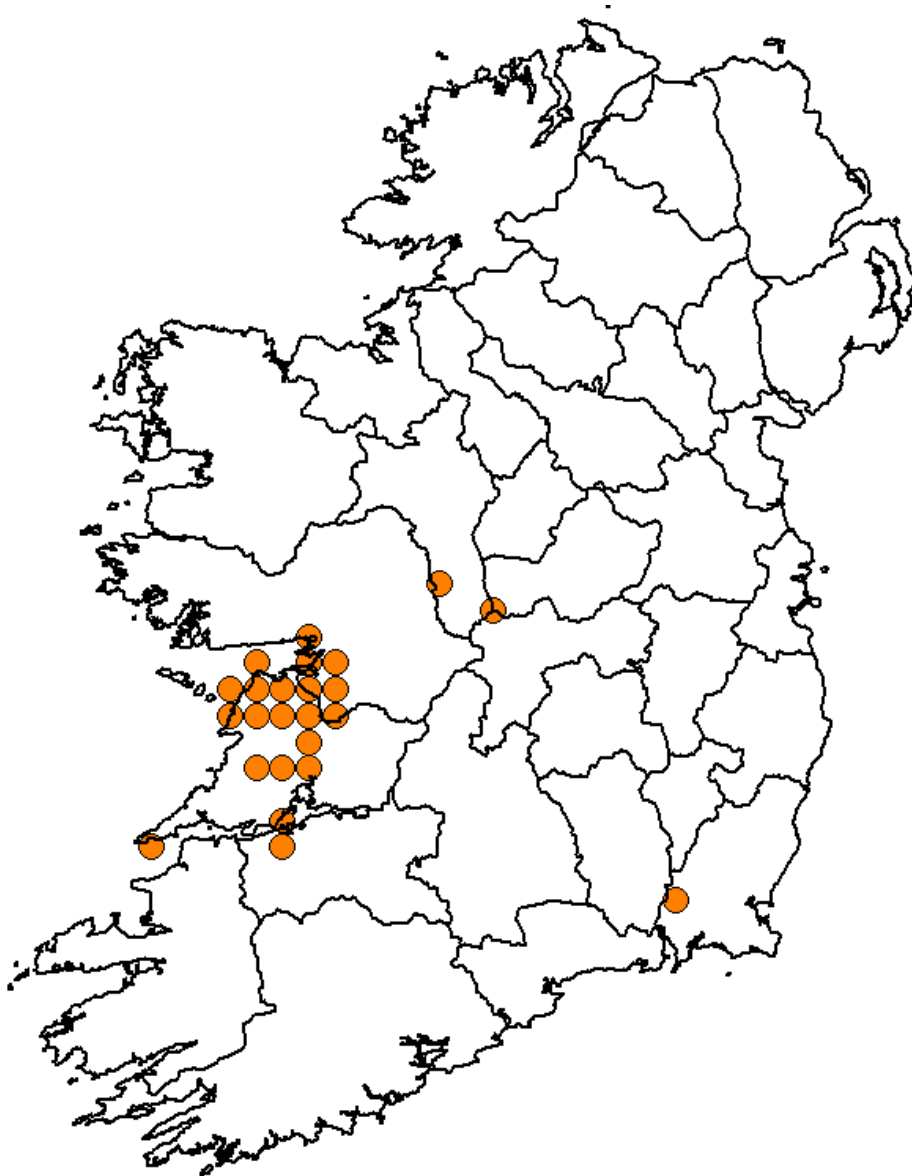
Can we learn from experiences elsewhere?

Some useful sources of information:

- https://www.buglife.org.uk/sites/default/files/Carder%20bee%20new%20sheet%208_10_12.pdf
- UK species action plan: <http://jncc.defra.gov.uk/speciespages/156.pdf>

- Bumblebee Conservation Trust (UK): <http://www.bumblebeeconservation.org/>
- Ellis, J.S., Knight, M.E., Darvill, B. and Goulson, D. (2006) Extremely low effective population sizes, genetic structuring and reduced genetic diversity in a threatened bumblebee species, *Bombus sylvarum* (Hymenoptera: Apidae). *Molecular ecology* 15: 4375–4386

KNOWN DISTRIBUTION AND LOCATION OF KEY POPULATIONS



The map above shows *Bombus sylvarum* sightings **since 2000**. The species occurs in healthy numbers across the Burren and into east Galway. It is also found at a small number of grassland sites in south Clare, North Limerick, Roscommon & Offaly. It is unclear whether there is sufficient habitat in these areas to make these populations viable in the longer term. The population in New Ross town is likely to be a remnant population that occurred in the species rich meadows that would have fringed the

river. It has not been recorded there since 2009, and given development work in the area, it is now assumed to have gone extinct from that site.

Known locations 1970-1999

The following table lists all known records of *B. sylvarum* from 1970-1999. The map above shows that it still exists in some of these locations. In other areas, suitable habitat may have disappeared, and the species is likely to have gone extinct from that site. You can help by visiting these locations in July-August on a sunny day and checking if you find the species. Please let us know both if you find the species and if you don't ufitzpatrick@biodiversityireland.ie

Location	Date	Grid reference	Recorder	County
Bagnellstown roadside	31/08/1978	S7260	John Breen	Carlow
Turloughmore	20/08/1994	R3599	B. Nelson	Clare
Turloughmore, N of Castle Lough	20/08/1994	R3599	B. Nelson	Clare
Redbarn Strand, Youghal Bay, Ireland	13/08/1973	X0974	BWARS	Cork
Youghal Bay	13/08/1973	X124730	BWARS	Cork
Red Strand, Ballyva, Ardfield	15/08/1973	W3533	John Breen	Cork
Horseleap Cross	07/09/1972	M5545	John Breen	Galway
Ballycrossane	31/08/1974	M870106	BWARS	Galway
Ballyforan	31/08/1974	M8146	BWARS	Galway
Kiltormer	31/08/1974	M820206	BWARS	Galway
Galway	20/08/1974	M4517	M.C.D. Speight	Galway
Banna Dunes	24/07/1979	Q7524	John Breen	Kerry
Croom	05/09/1972	R5141	John Breen	Limerick
Limerick	21/08/1974	R5346	M.C.D. Speight	Limerick
Clonmacnaoise	20/08/1999	N0232	BWARS	Offaly
Owenur River nr Elphin	09/09/1972	M8987	John Breen	Roscommon
Kilcoran Wood	19/08/1974	R9823	John Breen	Tipperary

Kilmore Quay	29/07/1970	S9603	BWARS	Wexford
St. Helens	29/07/1970	T1409	BWARS	Wexford