

# Bumblebees of Norfolk



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## Bibliography

RICHMOND D.I. (2001), Bumblebees of Norfolk,  
*Transactions of Norfolk & Norwich Naturalists' Society* **vol 34** (part 1) pp 3-18

OWENS N.W. and RICHMOND D.I. (2012), Bumblebees of Norfolk,  
*Norfolk & Norwich Naturalists' Society, Occasional Publication no. 14*

For a full description of all British species see:

BENTON T. (2006)

Bumblebees

*Collins New Naturalists Series 98*

EDWARDS M. and JENNER M. (2005)

Field Guide to the Bumblebees of Gt Britain and Ireland

*Ocelli.*

### Key to maps

Latest record:



1981-2000



2000-2010



2011-2015

# The Bumblebees of Norfolk

As an aid to identification, the Norfolk bumblebees will be presented here as three sets of six:

- **six common species** which are widespread across the county and which are easily identified as queens in spring,
- **six uncommon species** with a restricted distribution in Norfolk,
- **six species of cuckoo bee**. These parasitise the nests of the social bumblebees and so do not have a worker caste of their own.

## Life history

Bumblebees overwinter as hibernating queens. These emerge in the first warm days of spring to seek nest sites in which to raise first broods. The queen herself must forage for this first brood, but subsequent foraging is undertaken by the emerging worker caste. Workers are much smaller than queens but usually have a similar colour pattern.

Males do not appear until late in the season. They mate with the new generation of queens which seek out hibernating places for the next winter. Only occasionally will this new generation of queens raise an immediate brood in the year in which they were hatched.

## Identifying bumblebees (*a quick guide*)

Differences between species are most readily observed in queens which are active early in the season as they search for nest sites after winter hibernation.

Queens which are **all black except for the red tip to the abdomen** are either *B.lapidarius* (common), *B.ruderarius* (uncommon: look for the red hairs on the pollen basket to confirm), or the much rarer *B.rupestris*, a cuckoo of *B.lapidarius*.

Queens with a **ginger thorax** are either *B.pascuorum* or the much rarer *B.muscorum* or *B.hypnorum*.

A small queen with **yellow bands on the thorax and red tip to the abdomen** is *B.pratorum*.

To distinguish the other social bumblebees look for the number of **yellow bands** on the thorax and for a white or buff tip to the abdomen (see species accounts for *B.terrestris*, *B.lucorum*, *B.hortorum* or the much rarer *B.ruderatus* and *B.jonellus*).

The cuckoo bees are much more difficult to tell apart, except for *B.vestalis* and *B.rupestris* which are large species with prominent markings.

**For more detailed identification guides refer to the texts in the bibliography.**

## The six common species

As an aid to identification, species are presented according to the colour bandings of the queen. They are presented in the following order: yellow-banded, red-tailed, and species with a ginger thorax.



**Buff-tailed Bumblebee** *B. terrestris*  
Large, dark coloured bumblebee with buff tip to tail.



**White-tailed Bumblebee** *B. lucorum*  
Large, brightly coloured bands, white tip to tail



**Garden Bumblebee** *B. hortorum*  
Look for the double yellow band across the waist



**Early Bumblebee** *B. pratorum*  
Small bumblebee, yellow bands sometimes absent, orange-red tip to tail



**Red-tailed Bumblebee** *B. lapidarius*  
Large, all black with red tip to abdomen



**Common Carder Bumblebee** *B. pascuorum*  
The most common bumblebee with ginger thorax

**Glossary:** collar – the colour band behind the head; scutellum – the colour band at the rear of the thorax



# Buff-tailed Bumblebee

## *Bombus terrestris*

**Queen:** a large bumblebee with dull yellow band on the first thoracic segment (collar), a dull yellow band on the second abdominal segment and buff tip to the abdomen.

**Worker:** a medium sized bumblebee with banding as in the queen, but less dark. The tail is whiter making it difficult to separate this species from *B.lucorum*.

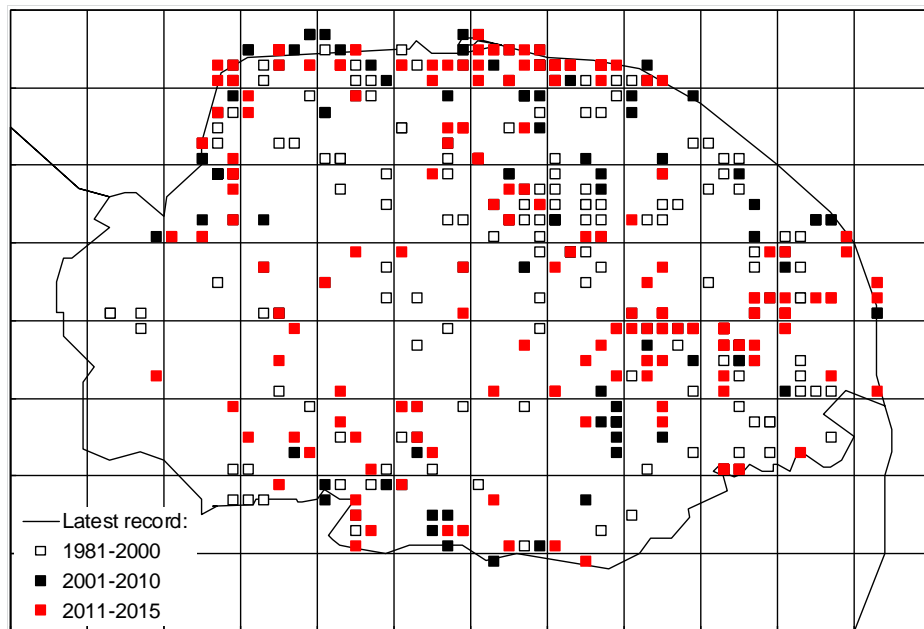
**Male:** similar to worker.

Widely distributed throughout the county. Empty 10km squares in South Norfolk and Breckland reflect a lack of spring visits and so no sightings of the distinctive queen. Workers cannot be reliably separated from *B.lucorum*.

Recorded from a wide range of habitats including seabank, chalk grassland, marshes, woodland, disused railway, roadside verge and gardens. Queens have a slow ponderous flight with characteristic heavy drone. They nest underground frequently utilising old burrows of small mammals. It is one of the most common species in southern Britain and has a range extending throughout England and Wales and into lowland Scotland.



David Richmond



# White-tailed Bumblebee

## *Bombus lucorum*

Queen: a large bumblebee with lemon yellow collar, yellow band on second abdominal segment and white tip to abdomen.

Worker: a medium sized bumblebee with banding as in queen. Difficult to distinguish from *B.terrestris*.

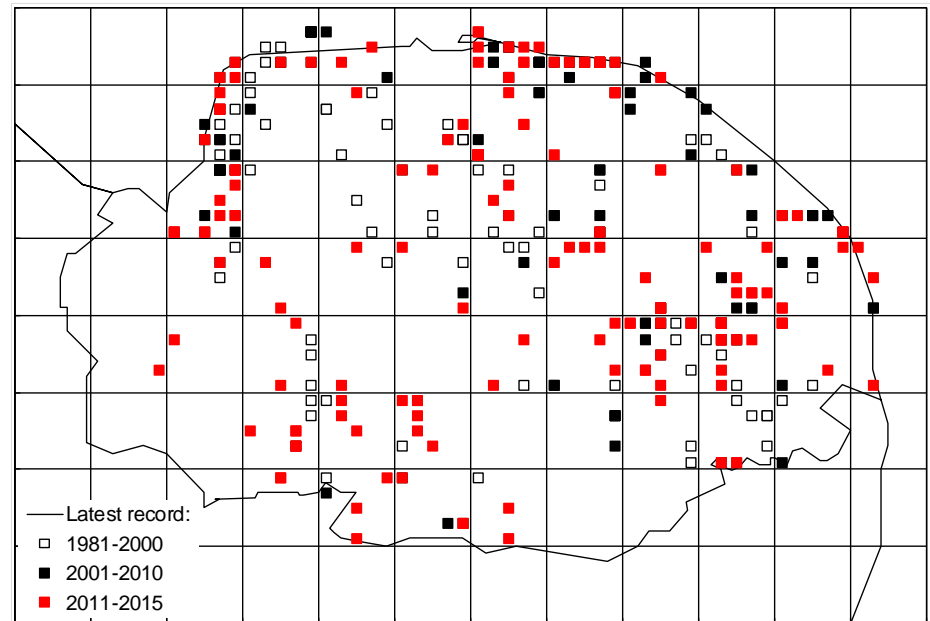
Male: similar to worker, but with yellow hairs on face.

Widely recorded throughout Norfolk with distinct recorder bias to the north of the county. A typical bumblebee of heathland locations, often seen on gorse, but recorded from a wide range of other habitats including urban locations, farmland, green lanes, woodland rides and gardens. Nest sites are underground.

This species is under recorded in the south of the county because of limited recording activity and the difficulty of separating workers of this species from those of *B.terrestris*. Only the brightest queens with clear white tips to the abdomen have been recorded by the author. The species extends throughout Gt Britain being overlapped in the north and west by the related *B.magnus* Krüger, which occurs in more exposed habitats.



Nick Owens



# Garden Bumblebee

*Bombus hortorum*

**Queen:** a large bumblebee with yellow collar and scutellum, yellow band on first abdominal segment and white tip to abdomen. The yellow bands on scutellum and abdomen give the appearance of a double yellow band across the 'waist'. Melanistic forms occur with the appearance of the much rarer *B.ruderatus*.

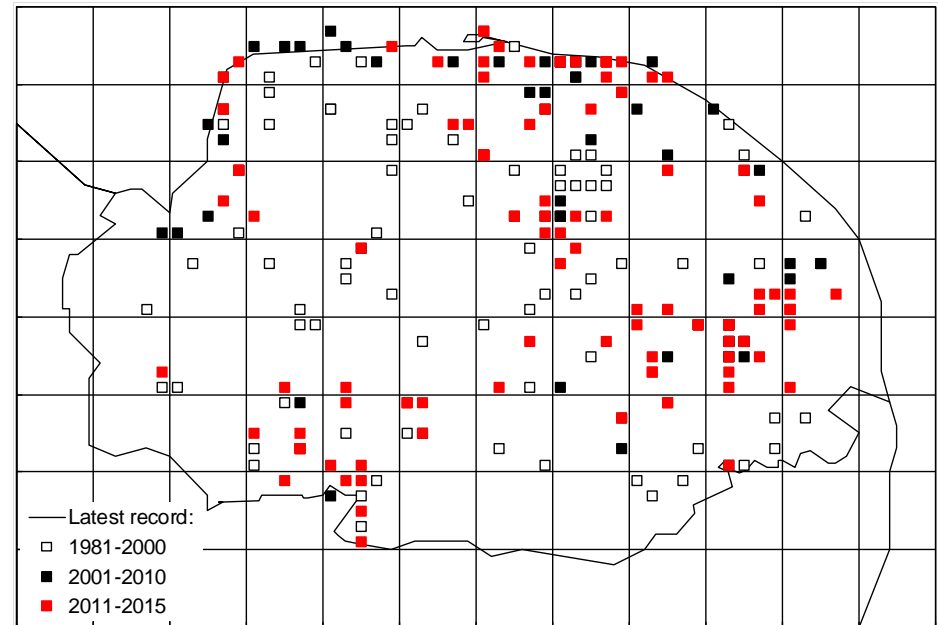
**Worker:** a medium sized bumblebee with banding as in queen.

**Male:** similar to worker:

Widely distributed throughout the county, though not demonstrating the same intensity of tetrad distribution as *B.terrestris* or *B.lapidarius*, but this may reflect its preference for private gardens rather than the open countryside. The bee is sometimes given the common English name of orchard bumblebee. It is a long-tongued species often found on foxgloves. Nests are usually placed among plant roots and litter just above or just below the soil surface. This species is quite late to emerge from hibernation and queens might not be seen until late April or May. It is found throughout the British Isles, extending to Shetland and the Outer Hebrides.



Nick Owens





# Red-tailed Bumblebee

## *Bombus lapidarius*

Queen: a large bumblebee, all black except for a red tip to the abdomen.

Worker: a medium sized bumblebee with banding as in queen. Black hairs on the pollen baskets of queens and workers distinguish this species from the much rarer *B.ruderarius* which has red hairs on the pollen baskets.

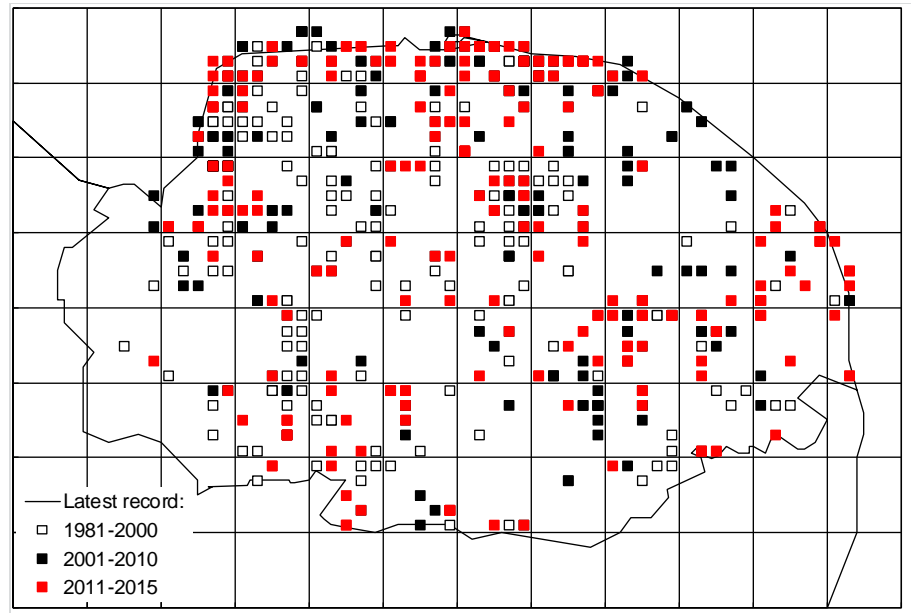
Male: a medium sized bumblebee with prominent yellow collar and red tip to abdomen. Male *B.lapidarius* has red hairs on its legs leading to possible confusion with *B.ruderarius*, but the greater amount of yellow should serve to identify *lapidarius*.

Widely distributed throughout Norfolk, except perhaps in the Broads and the Fens where wetter ground and shortage of hedgerow banks may restrict underground nesting opportunities. It has been recorded from chalk grassland, agricultural set-aside, roadside verges, woodland edges, gardens, cliff tops, sea banks and sand dunes.

It occurs throughout England and Wales and on the east coast of lowland Scotland.



David Richmond





# Early Bumblebee

## *Bombus pratorum*

Queen: a small bumblebee with yellow collar, yellow band on second abdominal segment, and red tail.

Worker: a small bumblebee with banding as in queen, though with the yellow sometimes obscured or absent.

Male: similar to worker.

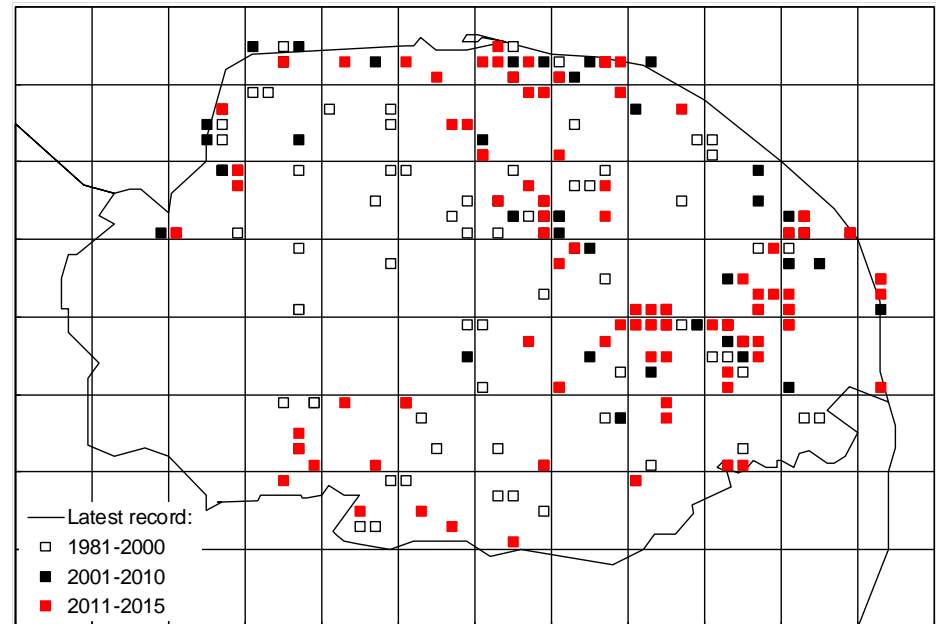
This is an early species with most records for the period May-July. Queens from the first generation will sometimes raise a brood in the summer of their emergence leading to August records, but most queens go into hibernation at this time. *B.pratorum* uses a wide variety of nest sites above, on or below ground, and it is not uncommon for disused birds' nests to be occupied, particularly those in nest boxes.

In gardens the species seems particularly fond of cotoneaster, but has also been recorded foraging on sainfoin, forget-me-not, mignonette, red campion, herb robert, wood sage, lavender, bell heather, bramble, wild raspberry, snowberry, flowering currant, tree lupin, hawthorn and horse chestnut.

The species occurs throughout mainland Britain and is widely distributed and often abundant.



Nick Owens



# Common Carder Bumblebee

*Bombus pascuorum*

**Queen:** a medium sized bumblebee with ginger thorax (with some black hairs showing through) and pale yellow abdomen (or blackish abdomen crossed by pale yellow bands).

**Worker:** a medium sized bumblebee with ginger and black hairs on thorax, but often with a 'worn' appearance. Pale yellow banding on abdomen.

**Male:** similar to worker.

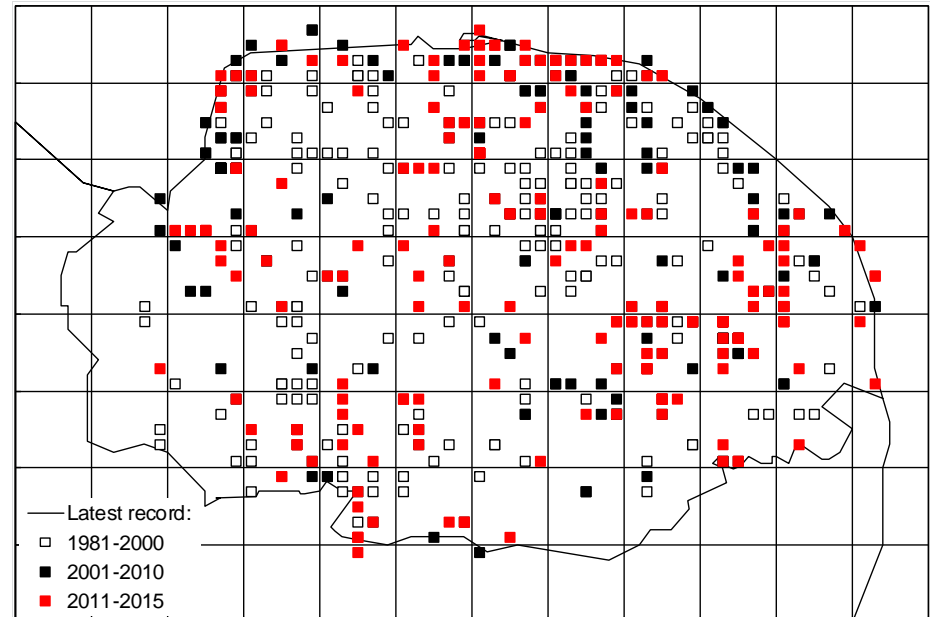
Widely distributed across Norfolk, one of a group of ginger-haired species collectively referred to as carder bees because of their habit of combing together material from around the nest to form a covering for the cells.

It is present in a wide range of habitats including clifftops, field margins, chalk grassland, heathland, scrub, marsh, disused railways, roadside verges, woodland, churchyards and gardens. Nests are built among vegetation on or just below the soil surface.

It is widely distributed throughout mainland Britain and the inner isles.



David Richmond



## The six uncommon species

As an aid to identification, species are presented according to the colour bandings of the queen. They are presented in the following order: yellow-banded, red-tailed, and species with ginger thorax.



### **Large Garden Bumblebee** *B. ruderatus*

Similar to *hortorum* and once believed to be a variant of that species.



### **Heath Bumblebee** *B. jonellus*

A small heathland species, with double yellow band across the waist.



### **Red-shanked Carder Bumblebee** *B. ruderarius*

Distinguished from *lapidarius* by red hairs on pollen baskets (*lapidarius* has black).



### **Bilberry Bumblebee** *B. monticola*

A vagrant species first recorded in 2007.



### **Moss Carder Bumblebee** *B. muscorum*

A coastal species, larger than *pascuorum* with denser hairs on thorax and abdomen.



### **Tree Bumblebee** *B. hypnorum*

A new coloniser, first recorded in Norfolk in 2008.

# Large Garden Bumblebee

## *Bombus ruderatus*

**Queen:** in general appearance resembles a large *hortorum* queen, but the yellow bands on the thorax are often duller and narrower. The band on the scutellum is usually equal in width to that on the collar. The abdominal band is confined to the first segment. The tail is usually a dull off-white. Very dark forms are quite frequent, as is also the case with *hortorum*.

**Worker:** a medium sized bumblebee with banding as in queen.

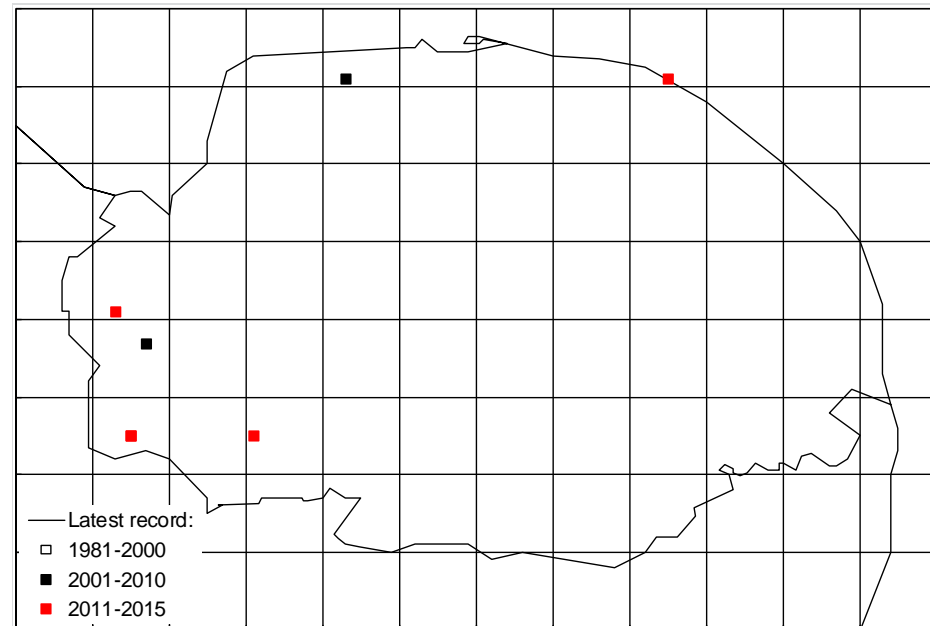
**Male:** similar to worker:

This species is closely related to *B.hortorum* and is not readily distinguishable in the field. Some workers have cast doubt upon its status suggesting that it may be no more than a colour form of *B.hortorum* but recent genetic work has confirmed its specific status.

The only recent records for Norfolk are a colony in the Fens (Owens 2007) and individuals at Burnham Market (Saunders 2007), Methwold (Benton 2011), Welney Washes (Owens 2013) Overstrand (Owens 2014) and Marshland St James (Coleman, 2015).



Nick Owens





# Heath Bumblebee

## *Bombus jonellus*

**Queen:** a medium sized bumblebee with yellow bands on first and third thoracic segments, yellow band on first abdominal segment and white tip to tail. This is the same colour combination as workers of the much commoner *B. hortorum*, but that species has a long narrow face and a long tongue, whereas *jonellus* has a much rounder face and a short tongue.

**Worker:** as queen.

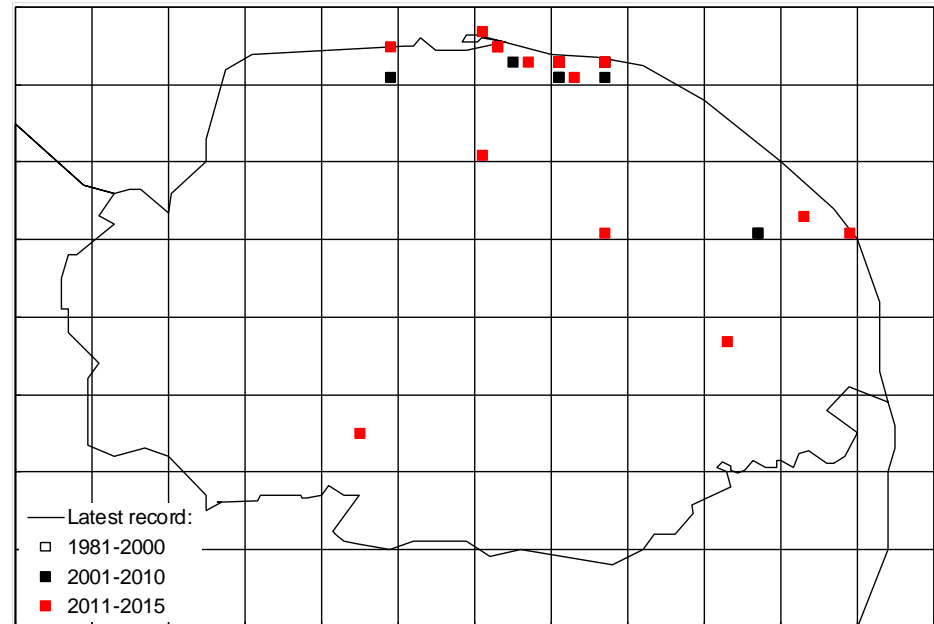
**Male:** as queen but with less distinct colour bands on the abdomen.

This is generally regarded as a northern species with a preference for heathlands and moorlands, though there are also records from the south-east and south-west of Britain.

In Norfolk there are 21<sup>st</sup> century records from Holkham, Swanton Novers, Blakeney Point, Cley, Kelling Heath, Weybourne, Beeston Common, Buxton Heath, Catfield Hall Estate, Winterton, Strumpshaw and the Stanford Training area.



Nick Owens



# Red-shanked Carder Bumblebee

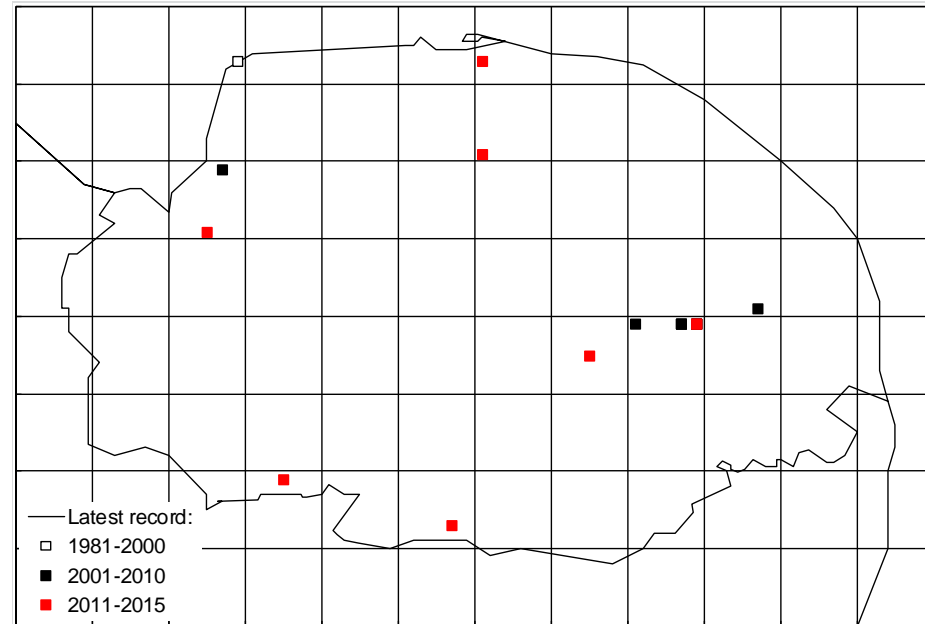
## *Bombus ruderarius*

- Queen: a medium sized bumblebee, all black except for a red tip to the abdomen. Red hairs of the pollen baskets distinguish this species from the much commoner *B.lapidarius*.
- Worker: as queen.
- Male: a medium sized bumblebee with small amount of yellow on the collar and red tip to abdomen. Red hairs on legs as in male *B.lapidarius* from which it is distinguished by the reduced amount of yellow on the thorax.

This species is probably under-recorded because of the difficulty of separating it from *B.lapidarius*. It was recorded at Thorpe St Andrews Business Park, Norwich, between 2000 and 2006, and refound there in 2014. Other 21<sup>st</sup> century records are from Wolferton (2007), North Burlingham (2007), Earlham cemetery (2009), the Brecks (2011), Morston (2012), Swanton Novers (2012) and Gaywood Valley, King's Lynn (2013). Older records show the species was widely distributed across south Norfolk in 1961-4, and present in NW Norfolk in 1968-71. The species has a patchy distribution across southern Britain.



Tony Irwin – specimen found dead in Earlham cemetery (2009)



# Bilberry Bumblebee

*Bombus monticola*

Queen: a medium sized bumblebee with a yellow collar and predominantly red abdomen.

Worker: as queen.

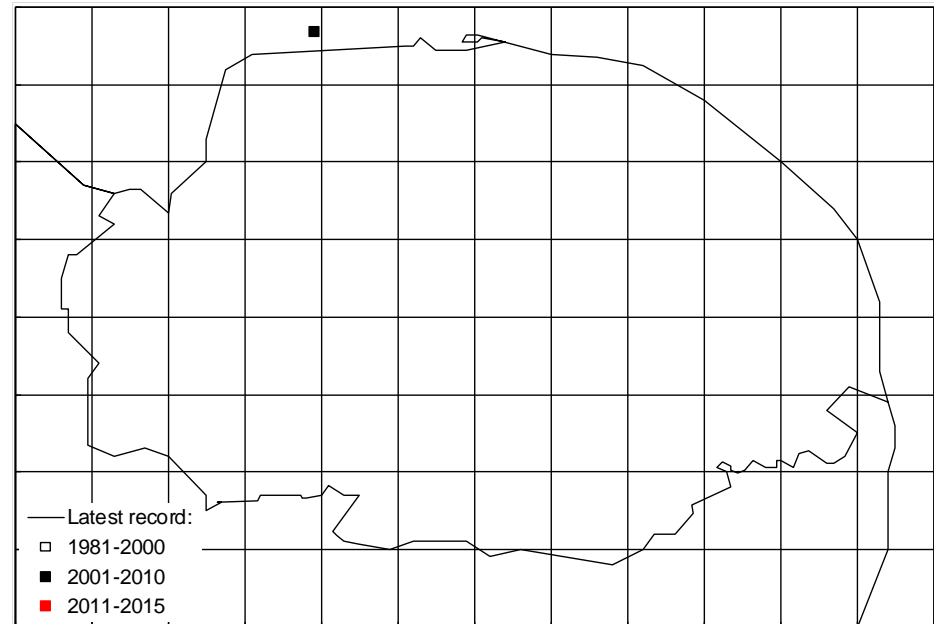
Male: similar to worker.

This is a species of upland moors in northern and western Britain, with a particular affinity for areas of bilberry.

It was added to the Norfolk list in 2007, when three males were recorded on Scolt Head NNR.



Ash Murray



# Moss Carder Bumblebee

*Bombus muscorum*

Queen: similar to *B.pascuorum*, but larger and with a denser coat on both the thorax and abdomen. The thorax is ginger, and the abdomen yellowish ginger.

Worker: as queen but smaller.

Male: similar to worker.

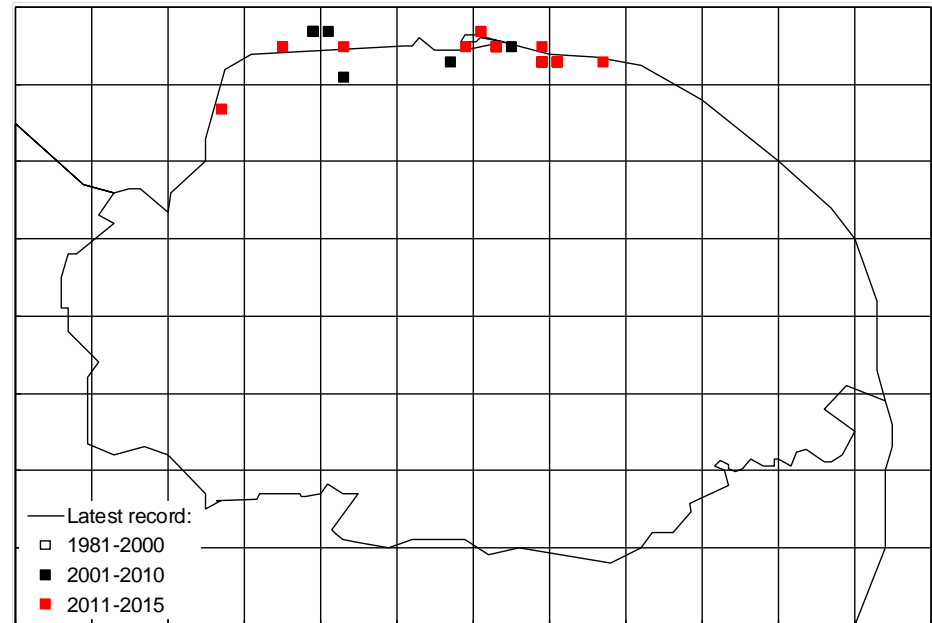
This species is widely distributed around coastal and upland areas of Gt Britain, with strong colonies in the Hebrides, Orkney and Shetland.

In Norfolk it is now restricted to coastal locations with 21<sup>st</sup> century records from Scolt Head Island, where a thriving colony was reported in 2003. It has been recorded foraging on field margins near Burnham Market (2007) and more recently, it has been recorded from Cley East Bank (2009), Weybourne (2009-12), Blakeney/Morston (2011-13), Titchwell (2011), Heacham (2012), Beeston Regis Common (2014) and Burnham Norton (2015).

There are older records from Holkham (1968) and from the north-east coast between Sea Palling and Winterton (1963-4).



Nick Owens





# Tree Bumblebee

*Bombus hypnorum*

Queen: a medium sized bumblebee with a ginger thorax and white tip to black abdomen.  
Worker: as queen.  
Male: similar to worker.

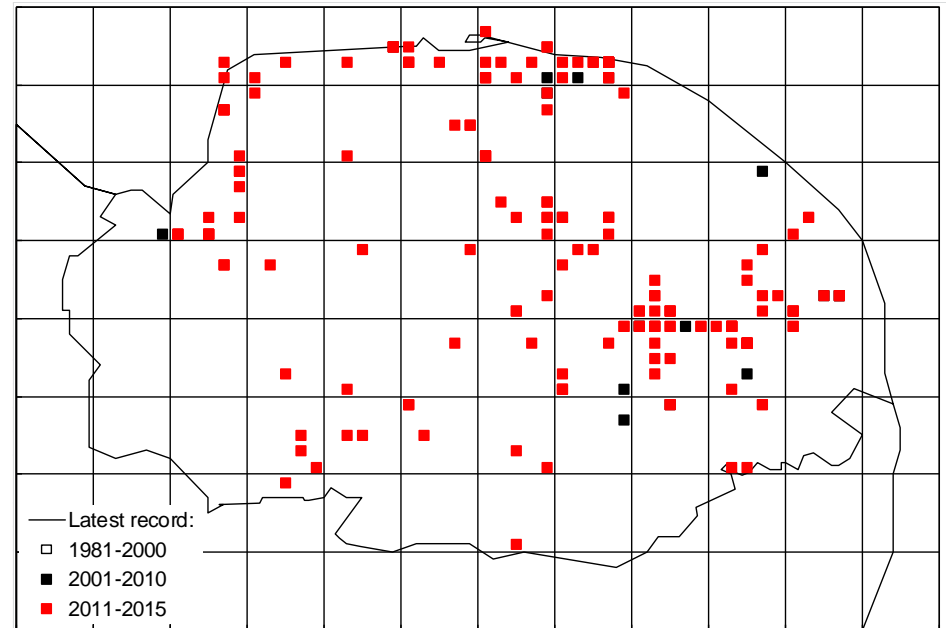
This species was first recorded in Gt Britain in 2001 subsequently spreading widely across the southern counties with a preference for urban environments such as parks and gardens.

It was first recorded in Norfolk in 2008 at Earlham cemetery, with subsequent records from a wide range of localities in the east of the county, extending into the west from 2011. It is now widespread across the county.

It nests above ground, typically in trees, earning it the vernacular name of Tree Bumblebee. It frequently takes over bird nest boxes.



David Richmond



# The six cuckoo bumblebees

Cuckoo bumblebees parasitise the nests of social bumblebees and do not have a worker caste of their own. They are presented in the same order as the host species described in section 1.



**Vestal Cuckoo Bumblebee** *B. vestalis*  
Cuckoo of *B.terrestris*



**Gypsy Cuckoo Bumblebee** *B. bohemicus*  
Cuckoo of *B.lucorum*



**Barbut's Cuckoo bumblebee** *B. barbutellus*  
Cuckoo of *B.hortorum*



**Four-coloured Cuckoo Bumblebee** *B. sylvestris*  
Cuckoo of *B.pratorum*



**Hill Cuckoo Bumblebee** *B. rupestris*  
Cuckoo of *B.lapidarius*



**Field Cuckoo Bumblebee** *B. campestris*  
Cuckoo of *B.pascuorum*

**Glossary:** collar – the colour band behind the head; scutellum – the colour band at the rear of the thorax

# Vestal Cuckoo Bumblebee

*Bombus vestalis*

Female: a large cuckoo bee with dull yellow collar, white tip to black abdomen surmounted by a broken yellow band.

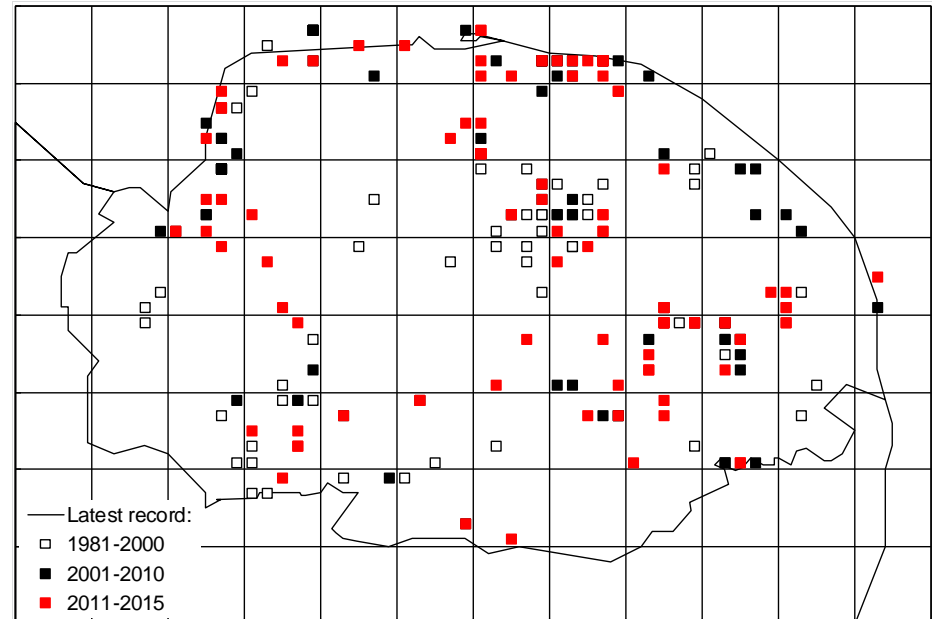
Male: smaller than the queen and with similar patterning, except that there is some yellow on the scutellum and the yellow band across the tail is more complete.

This species is widely distributed across Norfolk. It has a heavy droning flight resembling that of its host species *B. terrestris*. It is a typical species of woodland edges but has also been recorded from gardens, chalk grassland, agricultural set aside and green lanes.

Cuckoo bee females hibernate over winter and emerge in late spring after the social queens have established their nests. After feeding they seek out nests of their host species where they use the pollen/wax mixture from the cells of the host to create new cells in which they lay their own eggs. These are then reared by the workers of the host colony. *B. vestalis* is widely distributed across southern England and Wales, but is rare in the north. Its range is less extensive than that of its host species.



David Richmond



# Gypsy Cuckoo Bumblebee

*Bombus bohemicus*

Female: similar to *B. vestalis* but slightly smaller and with paler yellow on thorax and abdomen. It has a longer, shaggier coat than *vestalis* making the edges of the colour bands indistinct.

Male: similar to *B. vestalis* male but with less distinct markings. In particular the yellow band across the tip of the abdomen is very pale.

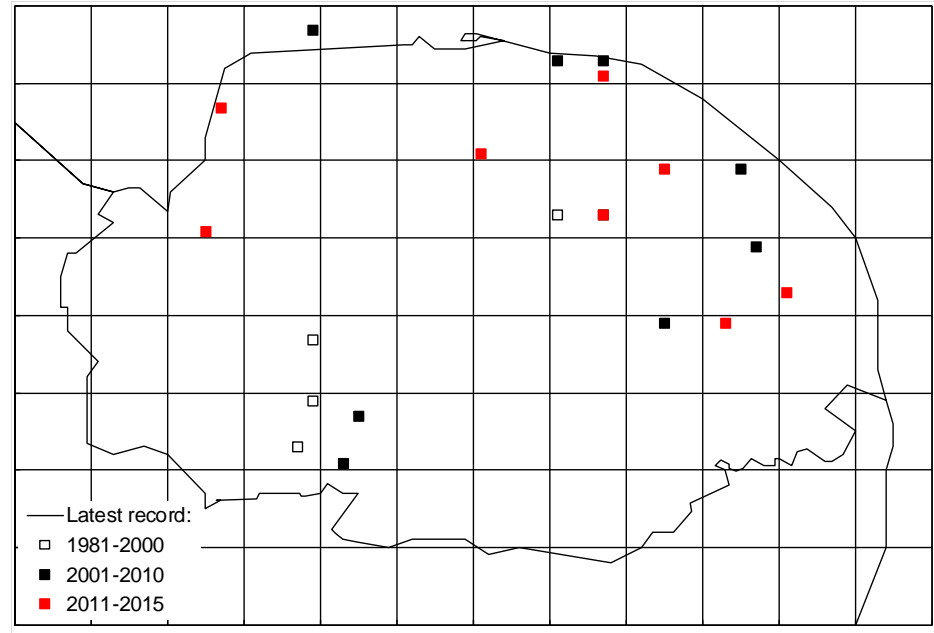
This species parasitises *B. lucorum*.

Sparsely distributed across the county with 21<sup>st</sup> century records from King's Lynn, Heacham, Scolt Head Island, Weybourne, Beeston Common, Swanton Novers, Buxton Great Wood, How Hill, East Ruston, Upton, Norwich (Rosary Cemetery), Brundall and the Stanford Training Area.

It has a mainly northern and western distribution in Gt Britain.



Nick Owens





# Barbut's Cuckoo Bumblebee

*Bombus barbutellus*

Female: a medium sized cuckoo bee with yellow collar and scutellum, and white tip to abdomen.

Male: similar.

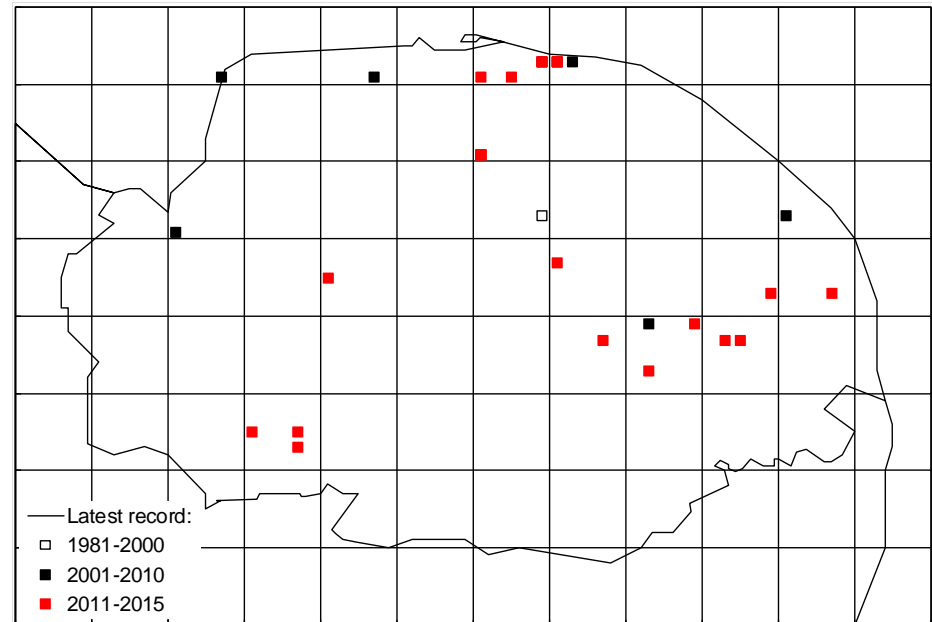
This species parasitises *B.hortorum*.

There are 21<sup>st</sup> century records from Methwold, Cranwich Heath, Castle Acre, King's Lynn, Hunstanton, Holkham, Langham, Bayfield, Weybourne, Sheringham Park, Swanton Novers, Weston Longville, Little Melton, Caistor, Thorpe St Andrew, Strumpshaw, Upton, Filby and Hickling.

It has a patchy distribution across the whole of Gt Britain.



Nick Owens



# Four-coloured Cuckoo Bumblebee

*Bombus sylvestris*

Female: a medium sized cuckoo bee with dull yellow collar and white tip to abdomen.

Male: a medium sized cuckoo bee with dull yellow collar and broad yellow band across tip of the abdomen not extending to the tail.

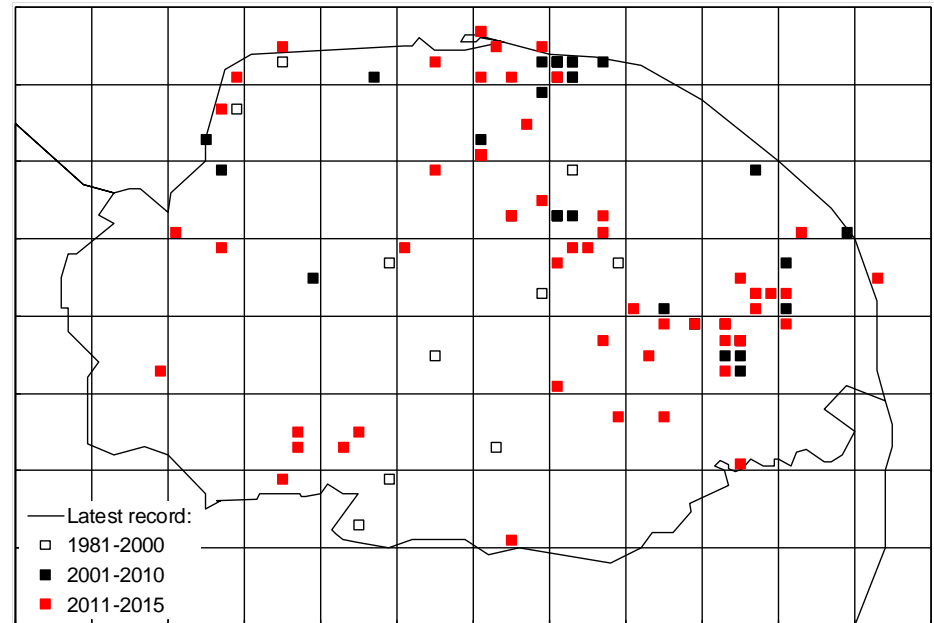
This species parasitises *B.pratorum*.

It is widely distributed across the county, being the second most frequently recorded cuckoo bee in Norfolk. It has been reported foraging on dandelion, sowthistle, ground ivy, lavender, greater knapweed, bramble and thistle.

The species occurs throughout mainland Britain, extending to the very north of Scotland.



Nick Owens



# Hill Cuckoo Bumblebee

## *Bombus rupestris*

Female: very large, similar in appearance to *B.lapidarius* but has more dusky wings, and is more sparsely haired on the thorax which can appear shiny.

Male: similar to female but much smaller.

This species parasitises *B.lapidarius*.

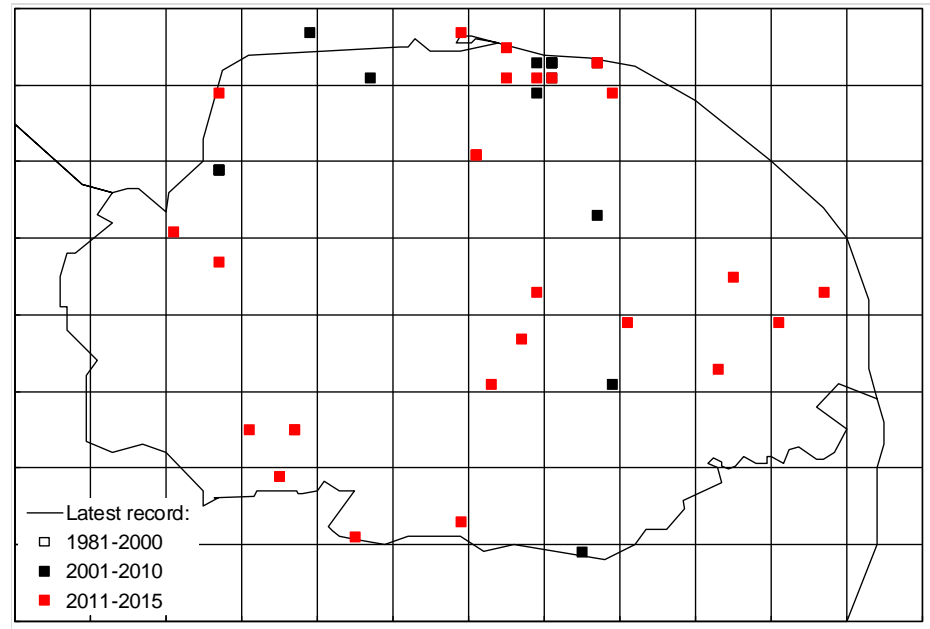
This species declined nationally in the 20<sup>th</sup> century but has shown a recovery in recent years.

In Norfolk, there have been 21<sup>st</sup> century records from Dersingham Bog, Scolt Head, Holkham, Kelling, Weybourne and Beeston Common; with a scattering of inland records including Buxton Heath, Swanton Novers, Hingham, East Tuddenham, Mulbarton, Cranwich, Weeting and Scole.

Prior to these, it had not been recorded in the county for over 40 years, the last 20<sup>th</sup> century record being at Weybourne in 1963.



Nick Owens



# Field Cuckoo Bumblebee

*Bombus campestris*

Female: a large cuckoo bee with dull yellow collar and scutellum, and brighter yellow tip to abdomen.

Male: a medium sized cuckoo bee with yellow collar and scutellum, and yellow tail covering at least half the abdomen (see *illustration*).

Also occurs in a very dark form.

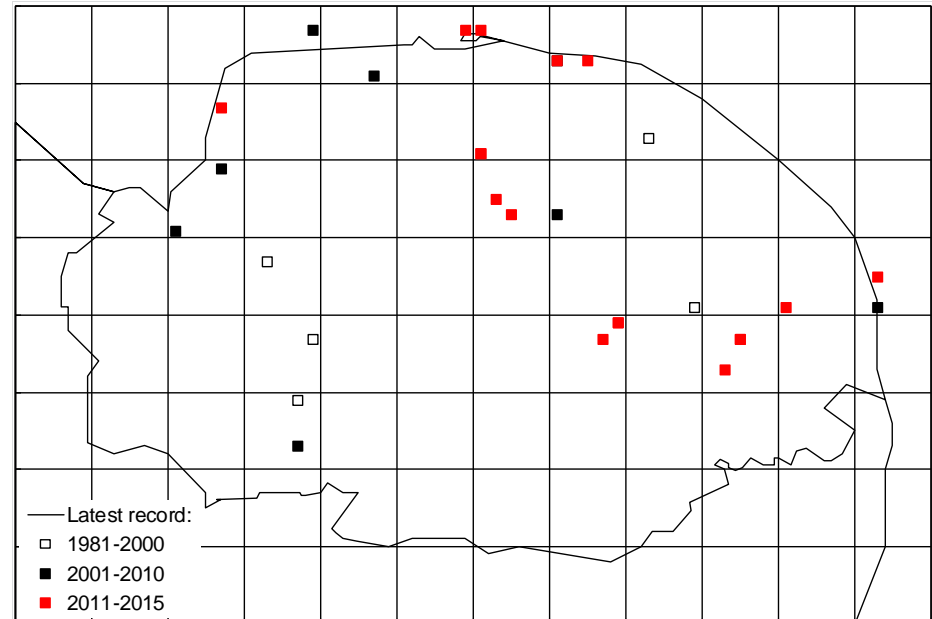


Nick Owens – yellow form of male

This species parasitises *B.pascuorum*.

There is a scattering of records across the county, but given the ubiquity of its host species it is probably under-recorded.

Nationally, it is present across the whole of Great Britain.







## Checklist of Norfolk Bumblebees.

Print out this page to record your sightings of Norfolk Bumblebees.

*Only the commonest and most easily identifiable are listed.*

<b>Bumblebees</b>	Where	When
Buff-tailed		
White-tailed		
Garden		
Early		
Red-tailed		
Common Carder		
Moss Carder		
Tree		

<b>Cuckoo bees</b>	Where	When
Vestal		
Four-coloured		
Hill		
Field		

**Confidently identified records should be sent to the county recorder  
(*contact details in the “recording” section of the N&NNS website*).**

**Please give:**

**species name, grid reference, location, comments, date, name of recorder**