

# CRASH COURSE IN BUMBLEBEE IDENTIFICATION



# How many species are there in Ireland?

21



15 true  
bumblebees



6 cuckoo  
bumblebees

Some bumblebee species are cleptoparasites or cuckoo species. Like the cuckoo bird, they lay their eggs in the nest of another bee species (their true bumblebee host), rather than bringing up their own offspring.

# Observing bumblebees

It is easiest to identify bumblebees when they are foraging on flowers. In this case, it can also be possible to take a photograph for later identification.

If you have a (butterfly) net it can be useful to catch bumblebees and have a closer look by briefly putting them into a clear plastic tube. This will not harm the bumblebee & is recommended for beginners.



Mountain Bumblebee  
photographed in a  
clear plastic tube

# TRUE BUMBLEBEE IDENTIFICATION IN IRELAND:



When identifying bumblebees,  
the first step is to check the  
colour of the tail

# TRUE BUMBLEBEE IDENTIFICATION IN IRELAND:



**5\*** species have a white tail



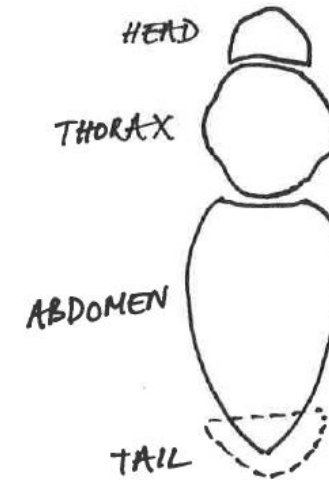
**5** species have a red tail



**1** species has a ginger tail



**2** species have a blonde tail



# BUMBLEBEE IDENTIFICATION SWATCH



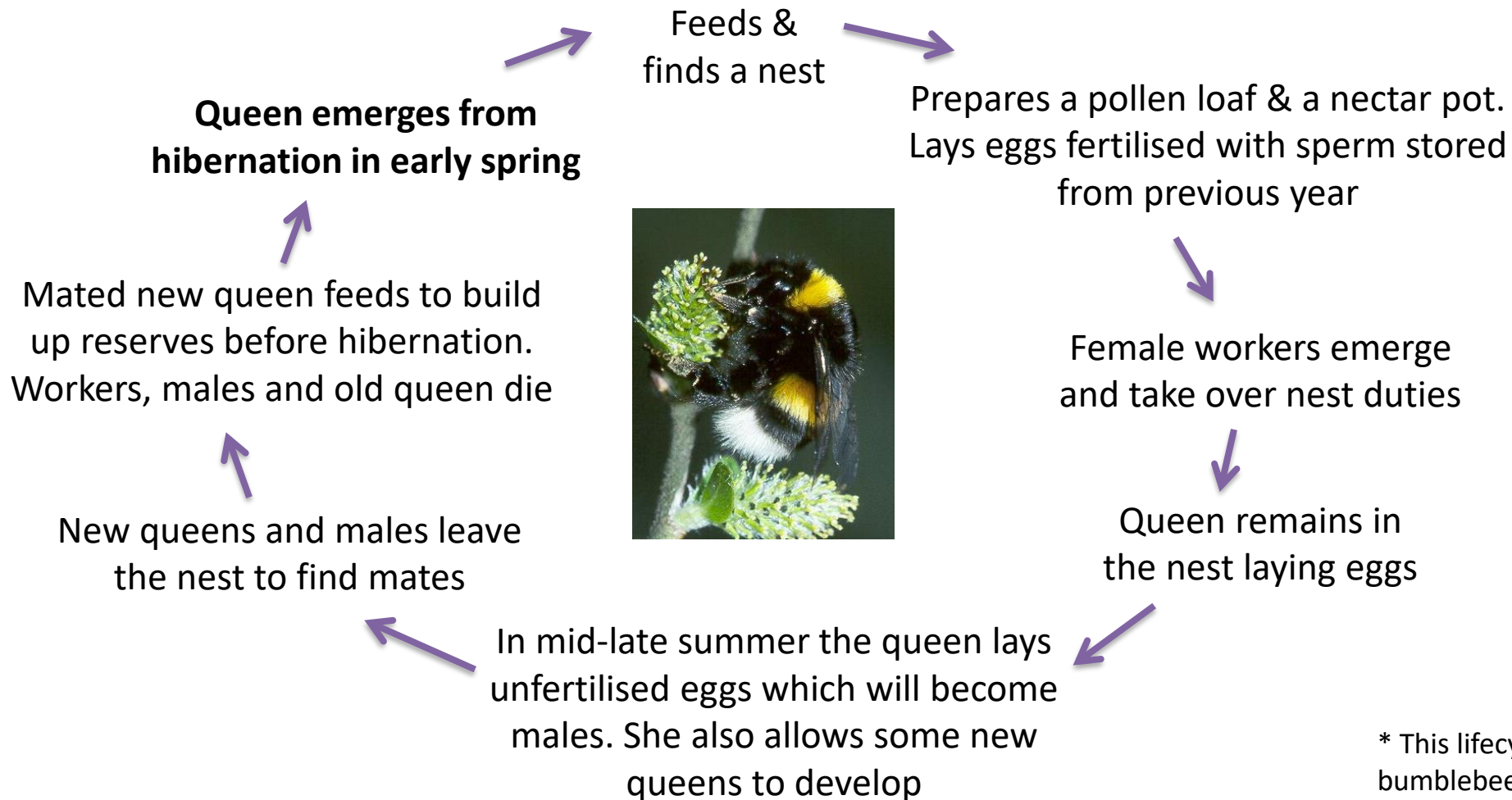
€5

In the Centre's Bumblebee guide, species are arranged by tail colour.

If you see a bumblebee with a white tail, you can fan out those five species in the swatch to assist with identification

<http://www.biodiversityireland.ie/shop/>

# TRUE BUMBLEBEE LIFECYCLE



Cuckoo bumblebee queens will emerge when the true colony is established. The cuckoo queen will enter the nest, kill the true queen and replace her. The true queens workers then bring up the cuckoo queens eggs for her. Cuckoo bumblebees don't have a worker caste.

\* This lifecycle is approximate for the average bumblebee in Ireland. Some species emerge later than others, and some common early species go through two lifecycles in one year.

# How do you tell males from females?

1. The colour pattern may differ
2. Only females will have a pollen basket on their hind leg. Males don't look after the young so don't need to carry pollen back to the nest.
3. Only females will have a sting!
4. Length of the antennae (males have 13 segments and females have 12)



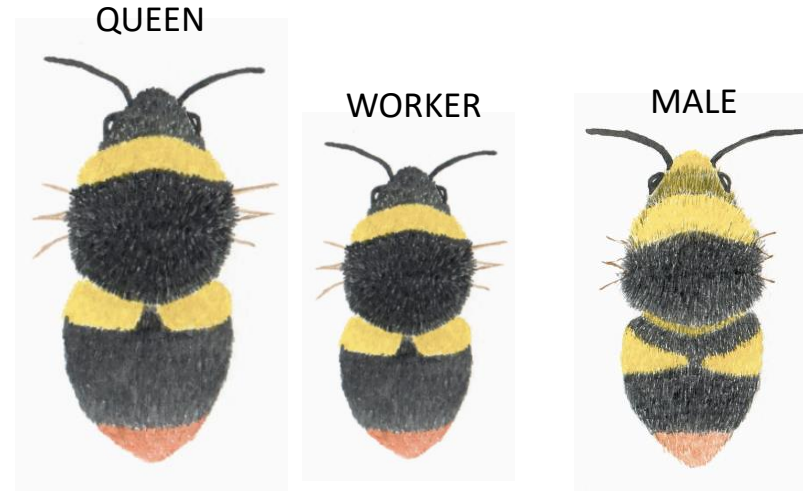
Pollen basket



# How do you tell queens and female workers apart?

## TRUE BUMBLEBEES:

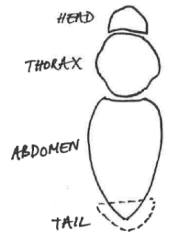
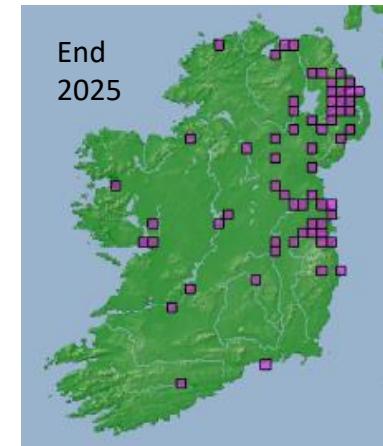
Early Bumblebee  
*Bombus pratorum*



- Queens and workers will be identical except for size. Queens are much larger (15-20mm long). Distinguishing the two comes with experience, particularly of seeing the large queens in spring.
- Males are similar in size to workers or slightly larger. They may or may not have a different banding pattern, depending on the species.

# White-tailed: 5\* species (all common)

White tail and **all ginger hairs** on the thorax =  
Tree Bumblebee (*Bombus hypnorum*)



- Arrived in Britain in 2001
- First spotted in Ireland in September 2017
- The other Irish bumblebee species nest on the surface of the ground, or just underneath. In contrast, this species nests above ground. In Britain, it is often found in garden bird boxes

# White-tailed: 5\* species (all common)



Two yellow bands on thorax



Long face



Face

**Garden Bumblebee**  
*Bombus hortorum*



Short face



Face

**Heath Bumblebee**  
*Bombus jonellus*



One yellow band on thorax



Lemon yellow bands & clean white tail

**White-tailed Bumblebee**  
*Bombus lucorum*



Orange-yellow bands & buff tail

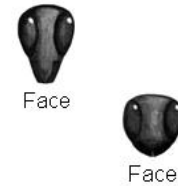
**Buff-tailed Bumblebee**  
*Bombus terrestris*

# White-tailed: 5\* species (all common)



White tail and **two** yellow bands on the thorax =  
Garden Bumblebee (*Bombus hortorum*) or  
Heath Bumblebee (*Bombus jonellus*)

**Garden Bumblebee** has a long (horse-shaped) face  
**Heath Bumblebee** has a short (heart-shaped) face



Garden Bumblebee



© Ralph Sheppard

Garden Bumblebee



© Tracy Anne Fennell

Heath Bumblebee



© Anneke Vrieling

Heath Bumblebee



© Ruth Wilson

**Garden Bumblebee (*Bombus hortorum*)** has a long (horse-shaped) face



Face



**Heath Bumblebee (*Bombus jonellus*)** has a short (heart-shaped) face



Face



Males

Note that males have yellow hairs on their face

# White-tailed: 5\* species (all common)



White tail and **one** yellow band on the thorax =  
White-tailed Bumblebee (*Bombus lucorum*) or  
Buff-tailed Bumblebee (*Bombus terrestris*)

**White-tailed Bumblebee** has lemon yellow bands **and** a clean white tail

**Buff-tailed Bumblebee** has orange-yellow bands and a buff or off-white tail

White-tailed Bumblebee



Buff-tailed Bumblebee



NOTE – THIS ONLY  
APPLIES TO QUEENS!

# *Bombus terrestris* & *Bombus lucorum* – the full picture.....

## QUEEN

Buff-tailed  
Bumblebee

*B. terrestris*



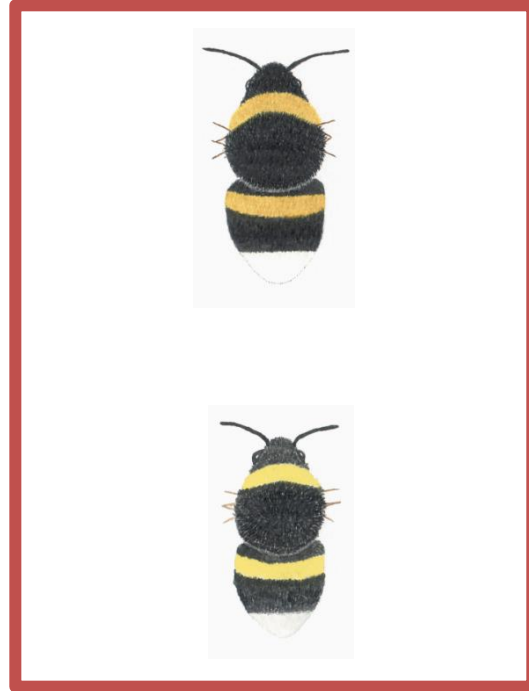
White-tailed  
Bumblebee

*B. lucorum*



If you see a queen, you  
can reliably tell these  
two species apart

## WORKER



Research has shown that  
workers of *B. lucorum* and *B.  
terrestris* cannot be reliably  
distinguished by sight. They  
should all be recorded as  
***Bombus lucorum* aggregate**

## MALE



*B. lucorum* males can be  
easily distinguished by the  
yellow hairs on their face

# White-tailed: 5\* species (all common)

## Why 5\*?

*Bombus lucorum* has two closely related sister species that also occur in Ireland: *Bombus magnus* & *Bombus cryptarum*. These three species can only be reliably distinguished from each other using DNA analysis. When we receive records of *Bombus lucorum* we are aware that it is a species complex.



Cryptic Bumblebee  
*Bombus cryptarum*



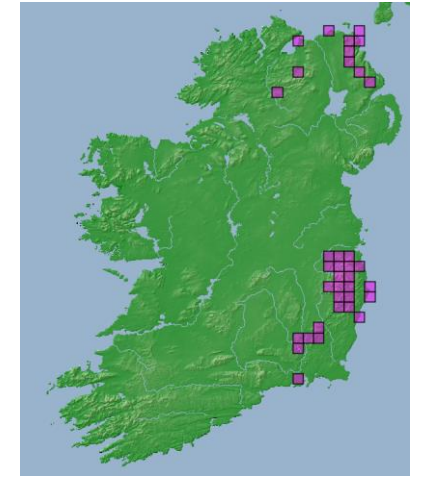
White-tailed Bumblebee  
*Bombus lucorum*



Northern White-tailed Bumblebee  
*Bombus magnus*

# Red-tailed: 5 species

Not only a red tail, but more than half of the abdomen red =  
***Mountain Bumblebee*** (*Bombus monticola*)



More than half the abdomen  
with red hairs

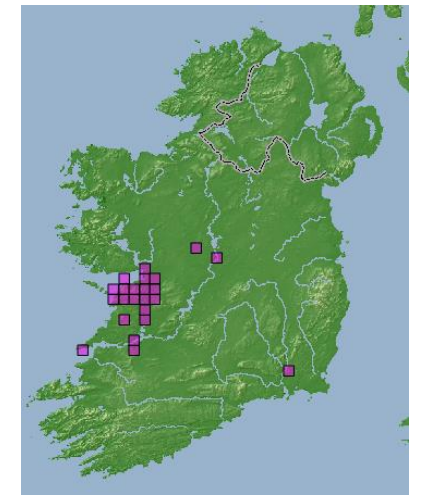


Note that males  
have yellow hairs  
on their face

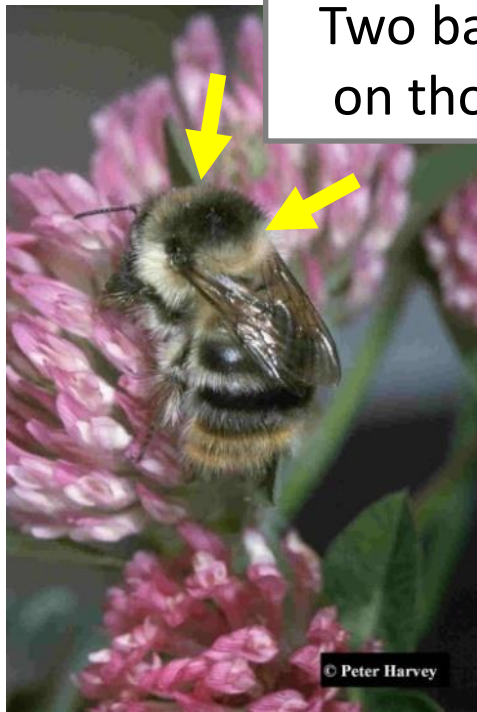
- **Restricted range**
- Arrived from Wales into the Dublin/Wicklow Mountains in the 1970s and slowly expanding its range south. Arrived from Scotland into N. Ireland.
- Associated with Blaeberry/Bilberry (*Vaccinium myrtillus*) & found in upland bogs/heaths

# Red-tailed: 5 species

Red tail, two clear bands on the thorax & grey-greenish in colour = *Shrill Carder Bee (Bombus sylvarum)*



Records since 2000



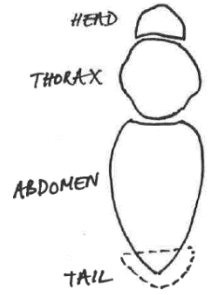
Two bands  
on thorax



- **Rare**
- Late emerging species, associated with flower-rich grasslands
- Queens, workers and males have same banding pattern

# Red-tailed: 5 species

Tail red, one yellow band on the thorax and another on the abdomen =  
*Early Bumblebee (Bombus pratorum)*



- Very common
- Often smallest bumblebee you will see



Note that the yellow band on the abdomen can sometimes be missing. In this species, the red tail can sometimes occur only at the very tip making it difficult to see

# Early Bumblebee mating



Queen

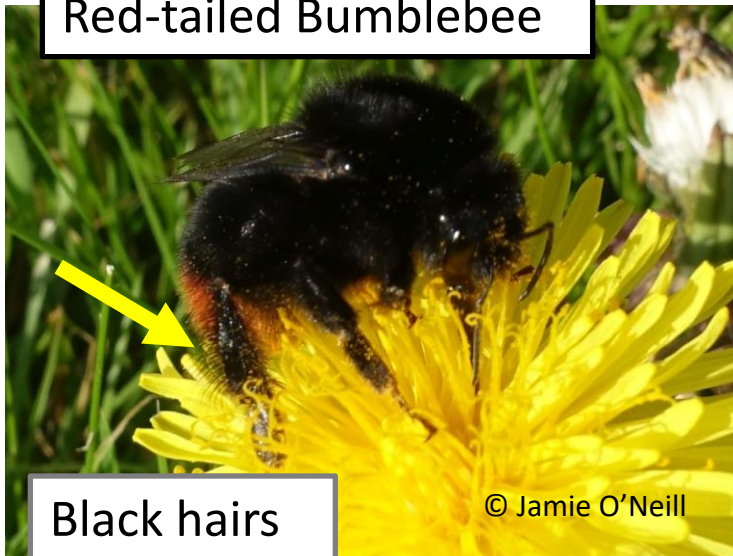
Note that *B. pratorum* males have yellow hairs on their face

# Red-tailed: 5 species

Jet black bumblebee with a red tail = Red-tailed Bumblebee (*Bombus lapidarius*)  
or Red-shanked Carder Bee (*Bombus ruderarius*)

**Red-tailed Bumblebee** has black hairs on the hind leg  
**Red-shanked Carder Bee** has red hairs on the hind leg

Red-tailed Bumblebee



Black hairs  
on hind leg

© Jamie O'Neill

Very common

Red-shanked Carder Bee



Red hairs  
on hind leg

© Elizabeth Hatchell

Rare

Late-emerging species,  
associated with flower-rich  
grasslands

## Red-tailed Bumblebee - common

Females



Females - jet black, red tail and **black** hairs on hind leg

## Red-shanked Carder Bee - rare

Females



Females - jet black, red tail and **red** hairs on hind leg

Males



Males - yellow band on thorax, yellow hairs on face and **red hairs on hind leg**

Males



Males - two greyish bands on thorax and **red** hairs on hind leg

Red-tailed Bumblebee males may be confused with Mountain Bumblebee males, but these have black hairs on the hind leg

# Ginger-tailed: 1 species (very common)

Ginger tail, all ginger thorax, and some black hairs on the abdomen =  
**Common Carder Bee (*Bombus pascuorum*)**



All ginger  
thorax



Note that *B. pascuorum* is  
prone to fading and can  
look unusual

- Probably the most common bumblebee you will see
- Queens, workers and males have the same banding pattern

# Blonde-tailed: 2 species

All hairs on the abdomen blonde = **Great Yellow Bumblebee**  
(*Bombus distinguendus*) or **Large Carder Bee** (*Bombus muscorum*)

Great Yellow Bumblebee



Two yellow  
bands on thorax



- **Very rare**
- Late emerging species, associated with flower-rich grasslands
- Queens, workers and males have the same banding pattern

Large Carder Bee



All ginger  
thorax

- Widespread but not common
- Good indicator of general pollinator diversity
- Queens, workers and males have the same banding pattern



Take care not to confuse the **Large Carder Bee** (*Bombus muscorum*) & the **Common Carder Bee** (*Bombus pascuorum*), both of which have an entirely ginger thorax

**Blonde-tailed: *B. muscorum***



All hairs on abdomen blonde  
(abdomen itself is black)

**Ginger-tailed: *B. pascuorum***



Some black hairs on abdomen

# True Bumblebees - summary

## **Very common: 6 species**

White-tailed Bumblebee  
Buff-tailed Bumblebee  
Garden Bumblebee  
Early Bumblebee  
Red-tailed Bumblebee  
Common Carder Bee

## **Restricted geographic range: 1 species**

Mountain Bumblebee

## **Rare: 3 species**

Great Yellow Bumblebee  
Shrill Carder Bee  
Red-shanked Carder Bee

## **Widespread but less common: 2 species**

Heath Bumblebee  
Large Carder Bee

## **New arrival in 2017: 1 species**

Tree Bumblebee

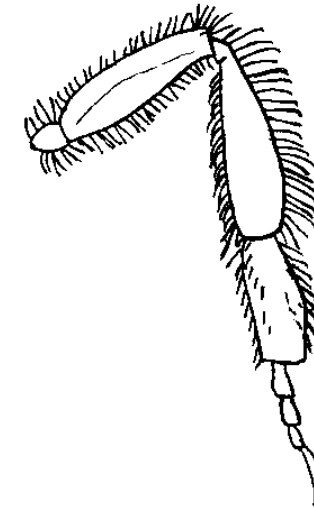


# How do you tell true bumblebees from cuckoo species?

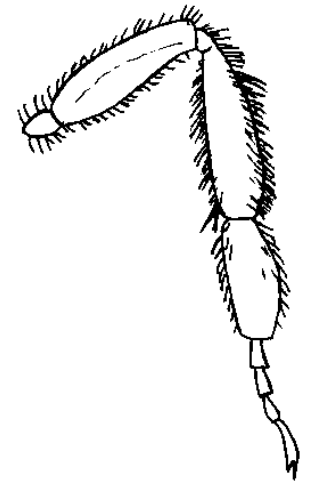
You need to look at the hind tibia (leg):



True bumblebee  
female



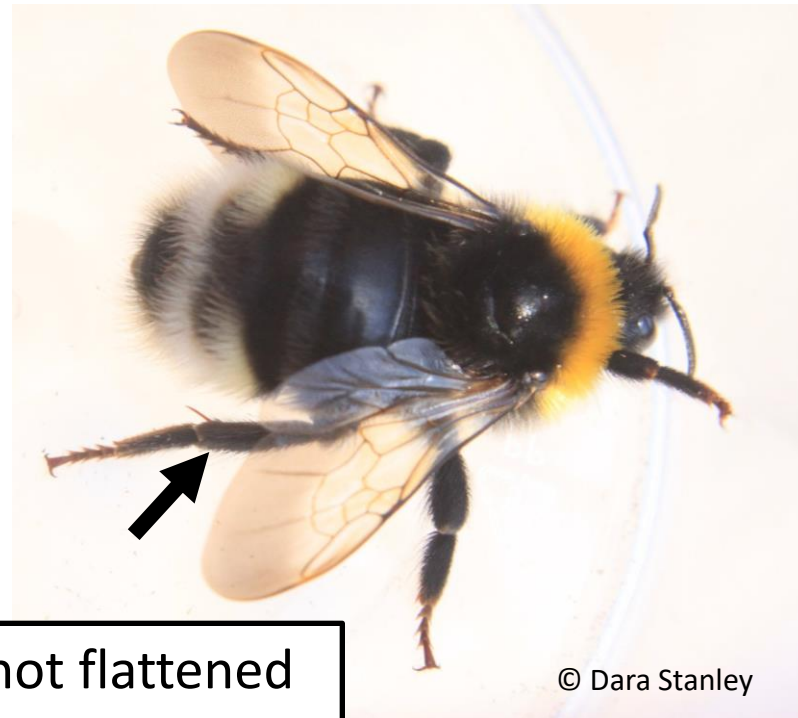
True bumblebee  
male



**True bumblebee females** (queen & workers) have a pollen basket on their hind leg where they store collected pollen to bring back to feed the larvae – their hind legs are flattened, shiny, and have a fringe of long hairs.

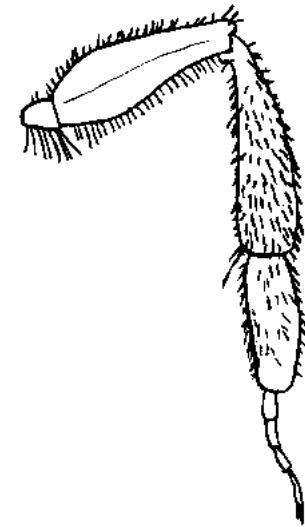
## Hind tibia (leg) in Cuckoo bumblebees:

Cuckoo bumblebees rely on the true host workers to feed their larvae. Their hind leg is not adapted to carry pollen. Cuckoo bumblebees have a hind leg that is not flattened or shiny and is covered in short hairs.



Hind leg not flattened  
and without a long  
fringe of hairs

Cuckoo  
bumblebee






# OTHER RESOURCES

## Free online course

How To Identify and Record Common Irish Bumblebees

### What's That Buzz?

#### How to Identify and Record Common Irish Bumblebees



Common carder bee    Buff-tailed bumblebee    Red-tailed bumblebee    White-tailed bumblebee    Early bumblebee    Garden bumblebee

Comhairle Cathrach & Contae Luimnigh  
Limerick City & County Council

Quality Winner 2020 - Luimneach/Limerick  
EUROPEAN GREEN LEAF

National Biodiversity Data Centre  
Documenting Ireland's Wildlife

Click NEXT to continue

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Search...

**NEXT** →

<https://biodiversityireland.ie/identifying-irish-bumblebees/lesson.html>

# Bumblebee poster

 **Bumblebees** of Ireland

**National Biodiversity Data Centre**  
Documenting Ireland's Wildlife  
www.biodiversityireland.ie

Bumblebees are vital pollinators and a key component of Ireland's biodiversity. There are 21 different species.

The National Biodiversity Data Centre is mapping their distribution and tracking how populations are changing. Help by recording your sightings at: [records.biodiversityireland.ie](https://records.biodiversityireland.ie)

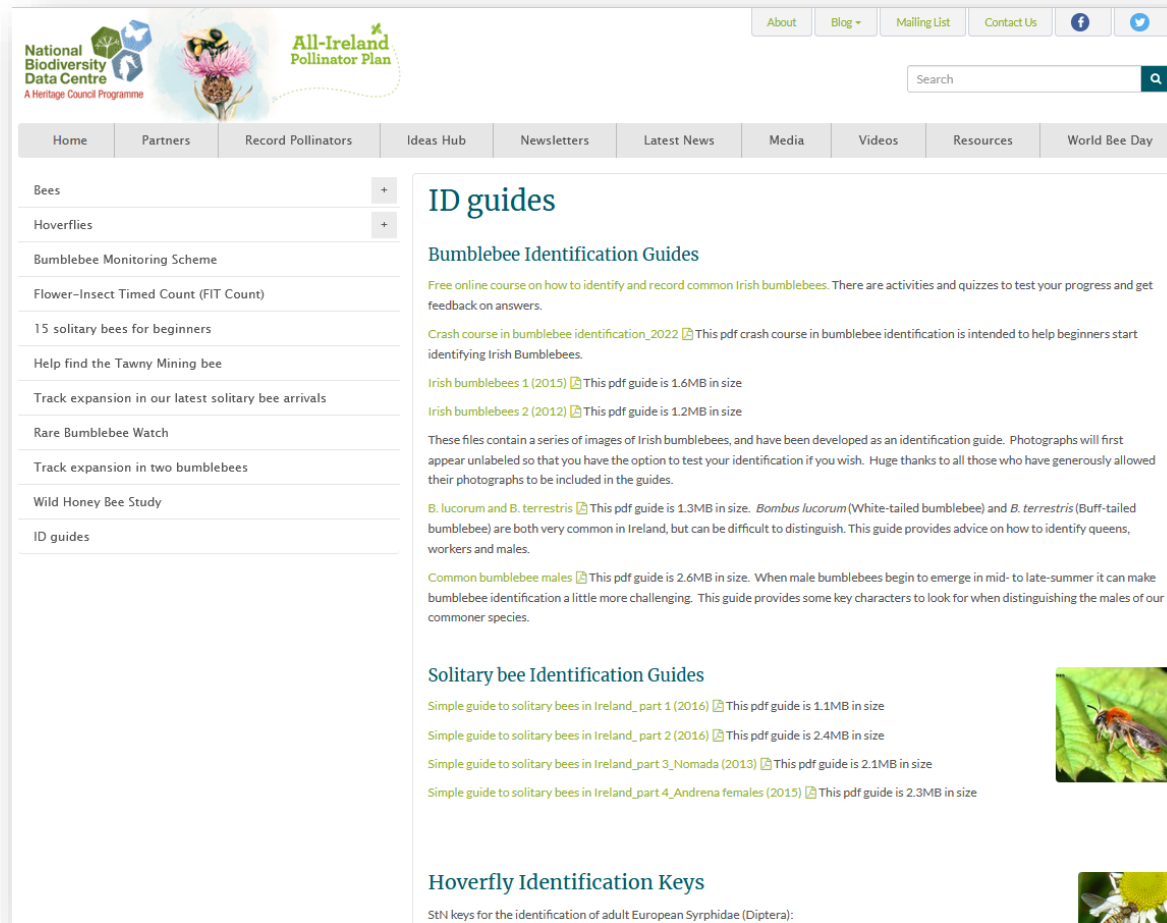
[www.pollinators.ie](http://www.pollinators.ie)

 <i>Bombus cryptarum</i> (Cryptic white-tailed bee)	 <i>Bombus distinguendus</i> (Great yellow bumblebee)	 <i>Bombus hortorum</i> (Garden bumblebee)	 <i>Bombus hypnorum</i> (Tree bumblebee)	 <i>Bombus jonellus</i> (Heath bumblebee)	 <i>Bombus lapidarius</i> (Red-tailed bumblebee)
 <i>Bombus lucorum</i> (White-tailed bumblebee)	 <i>Bombus magnus</i> (Mountain white-tailed bee)	 <i>Bombus monticola</i> (Mountain bumblebee)	 <i>Bombus muscorum</i> (Large carder bee)	 <i>Bombus pascuorum</i> (Common carder bee)	 <i>Bombus ruderarius</i> (Red shanked carder bee)
 <i>Bombus rupestris</i> (Red-tailed cuckoo bee)	 <i>Bombus sylvarum</i> (Shrill carder bee)	 <i>Bombus sylvestris</i> (Forest cuckoo bee)	 <i>Bombus terrestris</i> (Buff-tailed bumblebee)	 <i>Bombus vestalis</i> (Southern cuckoo bee)	 <i>Bombus pratorum</i> (Early bumblebee)

All images © Steven Falk

[https://pollinators.ie/wp-content/uploads/2019/06/SE-29-NBDC-Bee-Poster-2019\\_EMAIL.pdf](https://pollinators.ie/wp-content/uploads/2019/06/SE-29-NBDC-Bee-Poster-2019_EMAIL.pdf)

<https://pollinators.ie/record-pollinators/>



The screenshot shows the National Biodiversity Data Centre website. The header includes the logo, navigation links (About, Blog, Mailing List, Contact Us), and social media icons. The main navigation bar lists: Home, Partners, Record Pollinators, Ideas Hub, Newsletters, Latest News, Media, Videos, Resources, and World Bee Day. The 'Record Pollinators' section is active, displaying a sidebar with categories like Bees, Hoverflies, and Bumblebee Monitoring Scheme. The main content area is titled 'ID guides' and features 'Bumblebee Identification Guides' with several links to PDF guides, including 'Irish bumblebees 1 (2015)', 'Irish bumblebees 2 (2012)', and 'Common bumblebee males'. There is also a section for 'Solitary bee Identification Guides' with links to guides for Ireland and Nomada. A small image of a bumblebee is visible next to the solitary bee guides section.

More resources are also available through the UK Bumblebee Conservation Trust at <http://bumblebeeconservation.org/>

[www.pollinators.ie](http://www.pollinators.ie)

[ufitzpatrick@biodiversityireland.ie](mailto:ufitzpatrick@biodiversityireland.ie)

Please submit your bumblebee sightings online, regardless  
of how common the species:

<https://records.biodiversityireland.ie/record/bumblebees>

Photographs can be emailed for  
validation before submitting  
records if you're not sure



Thanks to all those who have submitted photographs and agreed that they can be used in our educational guides