









Bumblebee identification

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#Noinsectinction



Three groups of actions that must be taken to halt and reverse insect declines...

Room for insects to thrive:

we need to make space for wildlife and reconnect the wild parts of our landscapes.

Safe spaces for insects:

we must free our land and freshwaters from pollutants and invasive species.

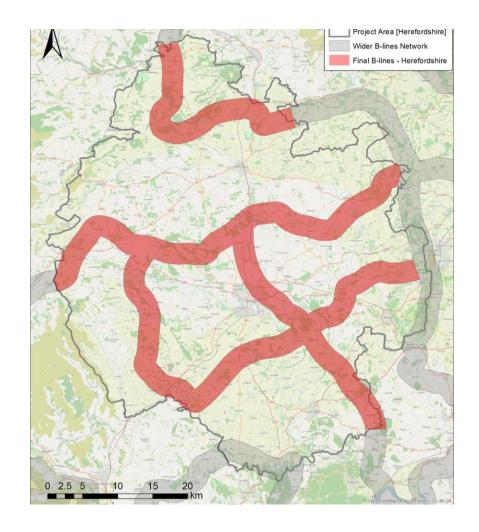
Friendlier relationship with insects:

we need to act now to stop
Insectinction. Understanding and awareness
is crucial in creating a quality response at a
good scale.



Herefordshire B-Lines

- A network of 3km corridors connecting some of the best remaining areas of wildflowerrich habitat.
- A shared map to direct and focus the national flower-rich habitat creation effort to reverse pollinator declines.
- Something anyone can contribute to- NGOs, local authorities, businesses, industry, schools, landowners....





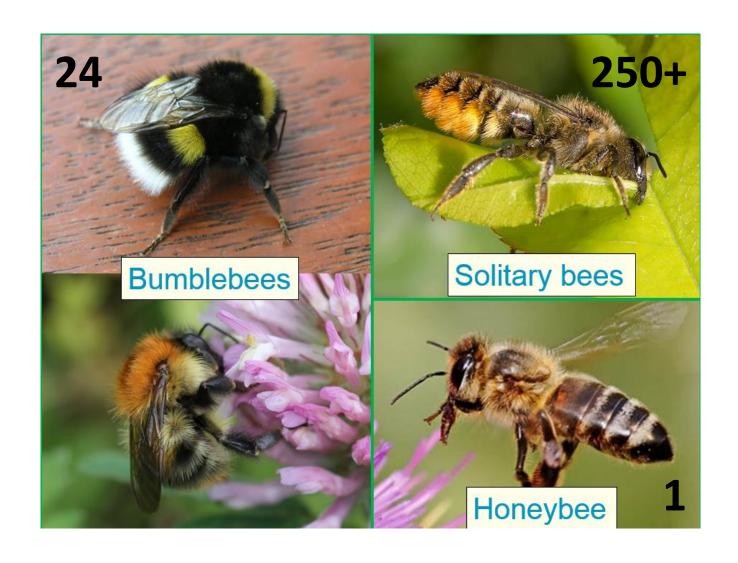
What we will cover...

- Bumblebee ecology
- Identification
- ID quiz
- Field survey tips





UK bees





Bee basics

- Hymenoptera (bees, wasps and ants)
 → Aculeates (stinging insects)
- The sting is a modified egg-laying tube → only females can sting!
- All bees get nectar (fuel) and protein-rich pollen (for growth) from flowers
- Proboscis and branched hairs for carrying pollen





What are bumblebees?

- Social insects
- Important pollinators
- Large and hairy
- Pollen baskets (corbiculate)
- 250 known species worldwide
 - → most are found in cooler regions of northern hemisphere (Himalayas)
- Adapted to cooler conditions
 - → large hairy bodies
 - → warm their own bodies



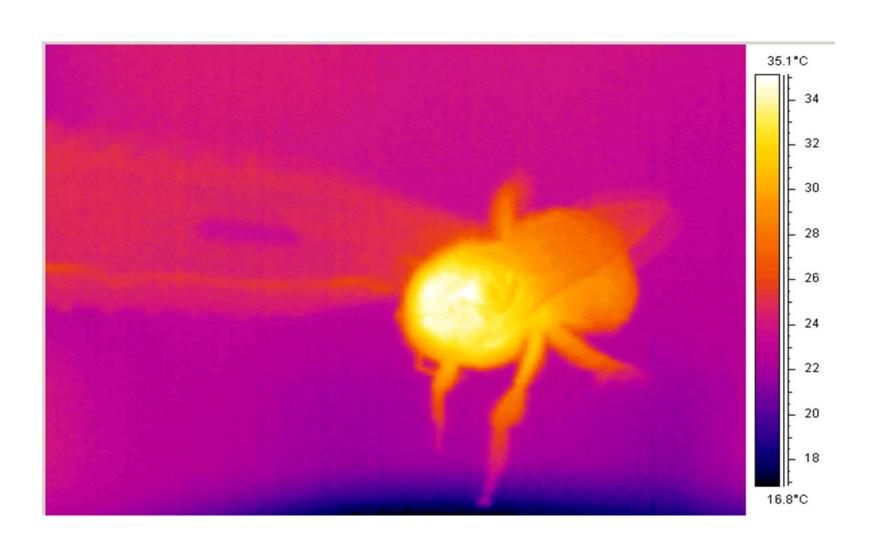








High energy requirements





Pollinator fact

Bumblebees use **buzz pollination** (creating vibration with their flight muscles) to release the pollen - blueberries, tomatoes, aubergines, potatoes and kiwis all require buzz pollination.





Bumblebee lifecycle





Bumblebee needs

- An unbroken food supply is essential from March to October
- Nest sites disused mammal holes, under rocks, tree holes, grass tussocks, open grassland
- Hibernation sites north-facing banks with soft soil, hedge and ditch banks, deadwood





Cuckoo bumblebees















Bumblebee declines

- 24 current species in UK
- 2 nationally extinct
- 2 on brink of extinction
- Several species declining in range
- Common species may not be as abundant







Rare species found in Herefordshire



Red-shanked carder bee (*Bombus* ruderarius)

Bilberry bumblebee (Bombus monticola)





Brown-banded carder bee (Bombus humilis)



Identification



- Single pair of wings
- Antenna short, with 3 obvious segments + bristle-like arista
- Eyes big, often meeting on top of the head



- Two pairs of wings
- Antenna long, elbowed, with 12-13 segments
- Eyes small and well separated
- ♀ with obvious pollen basket on hind legs



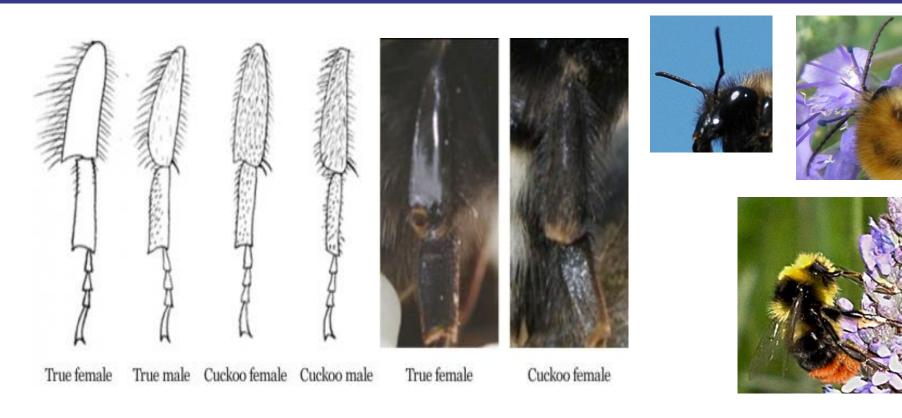
Bumblebee-mimics



© Sandy Rae



Male or female?



- Antenna is longer in males, also thicker and generally curved
 - → shorter, narrower and elbowed in females
- Males of some species have yellow hair on their head and faces
- Generally only see male bees in late summer and autumn
- Behaviour of males is different from females.



Workers

Workers are usually smaller versions of the queens
 Separating Buff-tailed and White-tailed workers is not easy so we can record workers of these as being: Buff-tailed/white-tailed



Buff-tailed worker



White-tailed worker



Males

 Males from late May/June for some species (before queens of some others have emerged!)

Often have yellow faces (red-tailed, early and white-tailed)





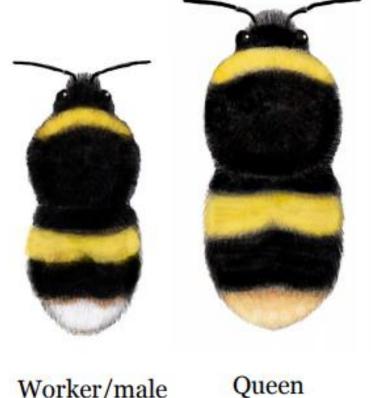


Cuckoos





Buff-tailed bumblebee Bombus terrestris



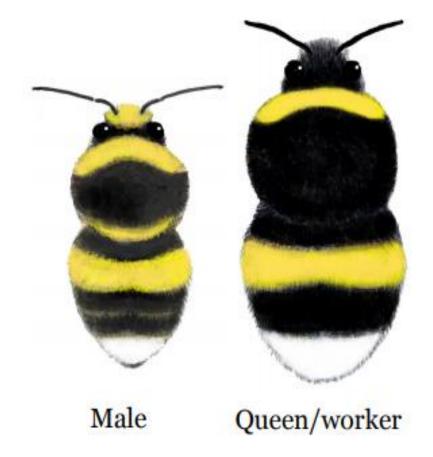
Worker/male





White-tailed bumblebee

Bombus lucorum







Early bumblebee Bombus pratorum



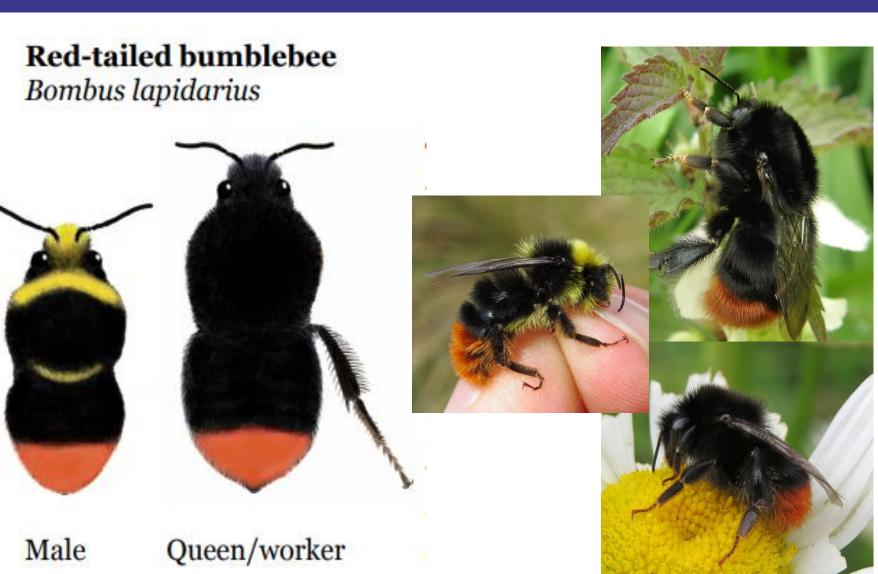
Male

Worker

Queen









Common carder bee Bombus pascuorum



Queen/worker/male





Tree bumblebee Bombus hypnorum



Queen/worker/male





Garden bumblebee Bombus hortorum



Queen/worker/male









Identification tips

- Antennae
 Banding
- Legs
- Facial hair
- Tail colour Behaviour
- Shape of tail





These are all queens of common bumblebee species



Buff-tailed bumblebee





White-tailed bumblebee





Red-tailed bumblebee





Garden bumblebee





Early bumblebee





Common carder bee





Tree bumblebee









All of these bumblebees are workers or males of the common species









































Resources

Survey Kit

- Transect route map
- Survey recording form, clipboard and pen
- Thermometer
- What's that Bumblebee Guide
- Beginners bee/butterfly net
- A queen bee marking cage
- Plastic/glass pots
- Tissue to put inside pot
- A 10 x hand lens (not essential)





Netting a bumblebee











Netting a bumblebee







Complete the recording form

F2: Monthly Recording Form

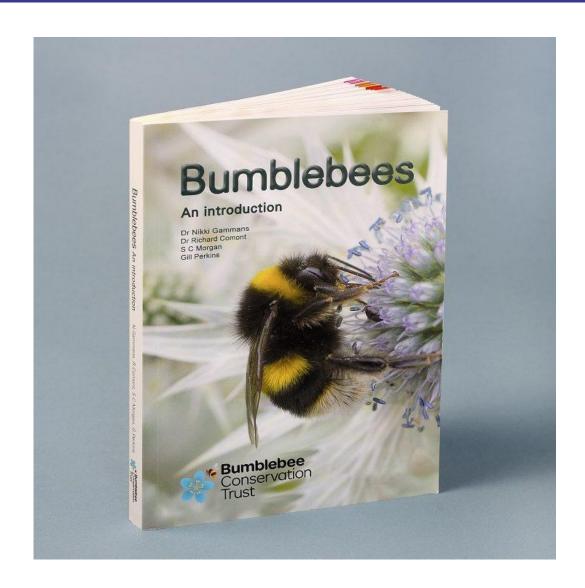
Recorder	H. Herridge			Date	01/06/2020
Site	Lugg Meadow			Start Time	11:00
Temp (°C)	24			Finish Time	12:30
Average wind speed (0-6)	3 leaves in sligh	ertically; 1 slight sm ht motion; 4 dust ra n leaf sway: 6 large			
Weather conditions		Sunny	Su	nny/Cloudy	Cloudy

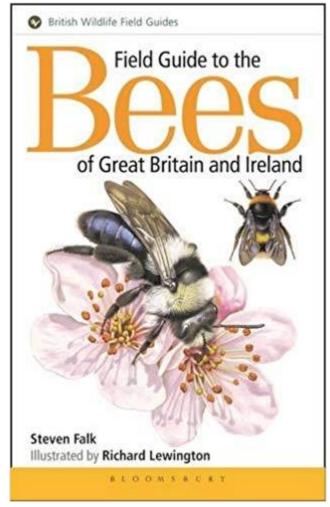


Species	Section	Caste	Number	Flower
Buff/white tailed	1	W	1	Common knapweed
Buff-tailed	2	m	2	Birds-foot-trefoil



Bumblebee resources







- Image credits:
- Steven Falk
- Hayley herridge
- The Bumblebee Conservation Trust