

# **Survey Techniques**

# for Bumblebees, Butterflies and Flowers

# How to carry out bumblebee and butterfly surveys



### **General Method**

- Conduct these surveys
  - o Between April and August.
  - o When it is dry, mild (≥12°C) and relatively calm (<5 on the Beaufort scale).
- Decide on a safe area where you can walk along a hedgerow or fence.
- Identify and record the number and type of butterflies and bees you observe\*.

## **Specific Method**

- 1. **Record** the date, start-time, temperature, time since last rainfall (hrs), and wind speed using the Beaufort scale.
- 2. **Walk** at a slow, steady pace along the hedgerow or fence counting all the butterflies and bumblebees seen within 1m either side of the route.
  - Bumblebees can be identified using the Bumblebee ID guides on National Biodiversity Data Centre <u>www.biodiversityireland.ie</u>
  - You can identify butterflies by using a butterfly key. Visit the Butterfly Ireland website <u>www.butterflyireland.com</u> or <u>www.irishbutterflies.com</u>
- 3. **Input your data** into the bumblebee and butterfly survey sheet below.

# Sample Butterfly Recording Form

E.g. if you observe 10 Large White butterflies, four Small White butterflies and seven Small Tortoiseshell butterflies you record these as follows:

Species	Numbers seen
Large White	## ##
Small White	IIII
Small Tortoiseshell	## II



# How to carry out a flower survey using a quadrat



### **General Method**

- The flower survey can be conducted on the same day as the bumblebee or butterfly survey. This is interesting as you will be able to identify the flowers available to the foraging insects.
- These surveys should be repeated a few times during the year, as plants that are not in flower on your first survey, may be accidentally overlooked. So by repeating surveys in the area in different seasons, you will get a better idea of what is present.
- Use a quadrat: this can be made from four metre-sticks, stuck together to form a square.

## **Specific Method**

- 1. **Place** the quadrat <u>randomly</u> on the ground beside where you did the butterfly and bumble bee survey.
- 2. **List and Record** the types of flowers that you see on the survey sheet.
  - Flowers can be identified using the <a href="www.wildflowersofireland.ie">www.wildflowersofireland.ie</a> website as a guide for details on Irish flowers.
- 3. Mark the presence/absence of each of these types of flowers within the quadrat
- 4. **Redo** the survey; placing the quadrat in nine more locations at random.
- 5. **Record** all results in the record sheet as demonstrated below.
- 6. **Compare occurrence;** this gives an idea of how common the plant is e.g. if Nettle is found in 9 out of 10 quadrats, you can say it has a 90% occurrence.

## Sample Flower Quadrat Recording Form

E.g. if you observe Nettle, Dandelion, Rye Grass and Buttercup in your first Quadrat (Q1) and then Dandelion, Rye Grass, Daisy and Thistle in the second Quadrat (Q2) you record these as follows:

Flower Quadrat Recording											
Site Name: Scho	Re	Recorder: Mr. Murphy's Class									
Date: 8 <sup>th</sup> September 2016					Start Time: 11am Finish					Time: <i>11.45am</i>	
Flower Number of Flowers per Quadrat (Q)							Occurrence				
Species			Nullib	mber of Flowers per Quadrat (Q)							(√s/10 quadrats)
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Overall
Nettle	٧	Х									
Dandelion	٧	٧									
Rye grass	٧	٧									
Buttercup	٧	Х									
Daisy	Х	٧									
Thistle	Х	٧									



Butterfly Recording Form									
Recorder Name:									
Date:	Start Time:	Start Time: Finish Time:							
Butterfly Species	Numb	er of individuals	Notes (Where were they seen? Were they feeding on flowers? etc)						





Bumblebee Recording Form								
Site Name:	Recorder Name:							
Date:	Start Time:	Finish Time:						
Bumblebee Species	Numb	er of individuals	Notes (Where were they seen? Were they feeding on flowers? e	tc)				





Flower Quadrat Recording Form											
Site Name:	Rec	Recorder:									
Date:	Star	t Time:			ne:						
Flower Species	Number of Flowers per Quadrat (Q)									Occurrence (√s/10 quadrats)	
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Overall