

Wider Countryside Butterfly Survey (WCBS)

Guidance

Thank you for volunteering to take part in the Wider Countryside Butterfly Survey (WCBS) organised and funded by Butterfly Conservation (BC), the Centre for Ecology and Hydrology (CEH), British Trust for Ornithology (BTO), and the Joint Nature Conservation Committee (JNCC). The aim of the WCBS is to get a representative picture of the status of butterflies in widespread habitats such as lowland intensive farmland and upland grassland and moorland.



Why survey butterflies in the wider countryside?

Many 'common' butterfly species have undergone serious declines and are in need of greater attention. Pressures such as agricultural intensification and loss of habitat can be more extreme in widespread habitats. At the same time new government funded 'green' farming schemes aim to achieve environmental benefits over a large proportion of the farmed countryside and could improve conditions for wider countryside species. However, our current monitoring and recording programmes do not give us enough information to pick up detailed trends in the countryside as a whole. The WCBS is necessary to sample the UK countryside in a representative way to fill the gaps and address these issues.

How is the survey organised?

- **Butterfly Conservation recorders** are taking part by surveying new random 1km squares within each Butterfly Conservation Branch region. The BC survey is organised via a network of voluntary WCBS Champions who allocate the WCBS squares in conjunction with a WCBS co-ordinator: *Zoë Randle, Butterfly Conservation, Manor Yard, East Lulworth, Wareham, Dorset, BH20 5QP* survey@butterfly-conservation.org Tel: 01929 406006
- **BTO Breeding Bird Survey (BBS) recorders** are taking part by visiting their existing BBS squares and walking the same routes to record butterflies in the summer months. The BTO survey is being organised by the BBS national organiser: *Sarah Harris, BTO, The Nunnery, Thetford, Norfolk, IP24 2PU, email: bbs@bto.org, Tel: 01842 750050*

If you take part in the BTO BBS then you should take part in WCBS via the BTO on your BBS square.

If you took part in the WCBS in previous years then please survey the same route each year.

Setting up a new square: finding and marking a route

If you are surveying a new square that has been allocated to you, it will be necessary to establish a fixed survey route through the square and draw this route onto a square details form (a copy needs to be sent to Butterfly Conservation). The survey route comprises two parallel 1-km long survey lines across your square (running N-S or E-W), that are subdivided into ten continuous 200m sections numbered 1-10 (Figure 1).

- Ideally, survey lines should be around 500m apart and 250m in from the edge of the square.
- Please indicate your survey line sections and their numbers clearly on your square details form.
- Because these squares may be re-surveyed in future years, it is important to note the starting points of each section either with the help of permanent landmarks (trees, hedges, boulders, houses etc) or by using markers (coloured tape or cord etc).
- Section lengths can be determined by pacing out a workable distance beforehand (i.e. 50m) and also by using a map in the field.
- In practice, your survey lines are likely to deviate from the 'ideal' because of problems with access, or barriers such as roads, rivers, and canals. In cases where the survey lines deviate considerably from the 'ideal', at no point should the two lines be closer together than 100m.

- For each of the two survey lines, only record 1-km even if it means not reaching the edge of the square (see examples below, Figure 1).

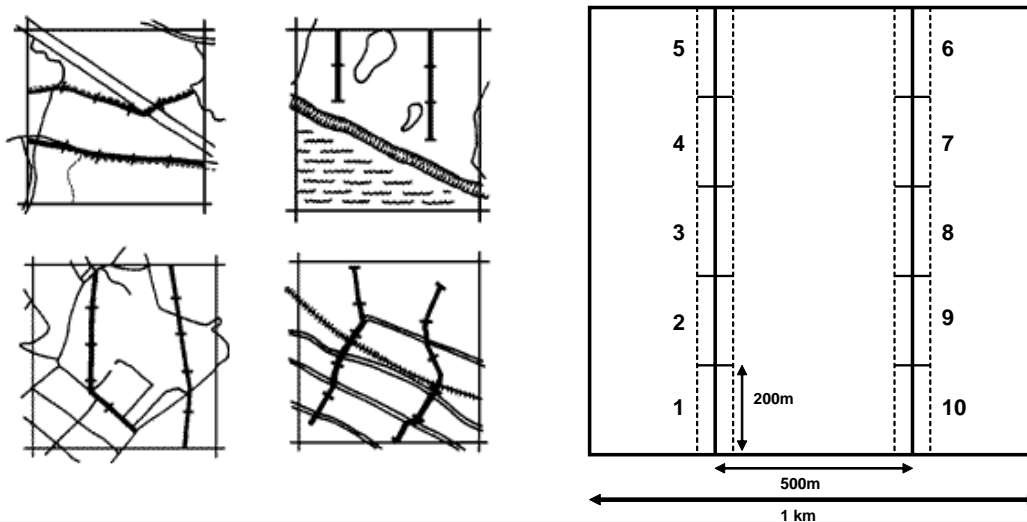


Figure 1: Example survey lines (left) where in reality obstacles, field margins and other land features cause the survey line to diverge from the ideal design (right)

- For squares containing a large area of water or impassable habitat such as dense scrub blocks, estimate how many of the 10 sections are located on passable land (or above Mean High Water). If this is less than 4 (i.e. less than 800m of the survey lines) regard the square as 'uncoverable' and return to the national survey co-ordinator for a new square.
- Minor intrusions into adjacent squares are perfectly acceptable and may provide the only practical way to carry out the survey. Indeed the route will be acceptable as long as more of the survey line falls within the square rather than outside. Please record the exact route taken in the box provided on the square details form.
- It is advisable to make an initial visit to your 1-km square to familiarise yourself with the route. Contact the national survey co-ordinator if you are unsure of the suitability of your route.
- If you feel that your square covers an area in which you might feel threatened then do not survey the square and report it to the national survey co-ordinator or champion. See health and safety guidance note.

Obtaining access to the survey route within squares

A large number of 1-km squares have paths, roads, bridleways or open access across them. This information can be gathered from an OS map and the open access website (www.countrysideaccess.gov.uk). Unless there is open access to your whole route then it is important that you contact the landowner to gain permission to carry out the survey visits. We advise contacting the nearest dwelling to your route either by arranging a visit or sending a letter. A letter template is available which outlines the reasons why the surveys are being carried out and what they entail. If you cannot obtain access permission then do not survey the square and report this to your survey champion or the national survey co-ordinator who will allocate you another square. See health and safety guidance note.

How to survey

- For each square record butterflies along the two 1-km survey lines on the same day.
- The survey lines are divided into **ten 200m sections (five per 1-km survey line), numbered 1-10** (shown in Figure 1).
- Walk each section at a slow, steady pace counting all butterflies seen within 2.5m either side of the survey line, 5m ahead and 5m from ground level up (5x5x5m box, Figure 2).
- In some habitats e.g. along sea cliffs, it may not be possible to record along both sides of the survey line. In these situations it is acceptable to record at a width of 5m along one side only of the survey line. Similarly, if walking along a narrow lane with hedges either side adjust the position of your recording strip to record in a 5m wide strip as far as possible (i.e. 1m on the left, 4m on the right).
- Try to avoid double counting where possible e.g. when an individual

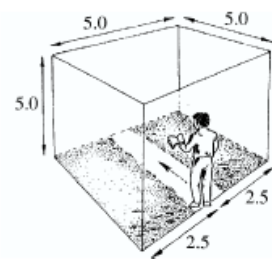


Figure 2: The 5x5x5m box

butterfly repeatedly flies in and out of your recording box. However, if you lose sight of an individual, and later regain sight of the same species do not assume this is the same individual.

- Do not count butterflies behind you.

When to survey and recording criteria

- A minimum of two visits to each square are required to take part in this survey and these should take place in July and August, with at least 10 days between the two visits.
- In addition, one or two further visits can be made to the square during May, June, July or August with at least 10 days between visits.
- If possible, return visits to squares should be made at roughly the same time of day.
- Record the time at which you start and end each survey line (1-km) on the survey recording form.
- Survey lines should generally be walked between 10.45am and 15.45pm and only when weather conditions are suitable for butterfly activity: dry conditions, wind speed less than Beaufort Scale 5 (see Table 1), and temperature 13°C or greater if there is at least 60% sunshine, or more than 17°C if overcast. See below for exceptions.
- If a distinct shadow is cast (bright cloud) then conditions may be classed as sunny.
- If possible, sunshine should be estimated for **each** section to the nearest 10% of the time it was sunny while you were walking that section (shade cast by features such as trees does not count).
- At the end of each survey visit, record shade temperature (e.g. with a portable thermometer placed in a shaded position at the beginning of the first survey line before you start), wind direction and average wind speed, using the Beaufort Scale (see Table 1).

Table 1: THE BEAUFORT SCALE

Code	MPH	KMH	Description	Specifications on land
0	0-1	0-1	Calm	Smoke rises vertically
1	1-3	1-5	Light air	Slight smoke drift
2	4-7	6-11	Light Breeze	Wind felt on face & leaves rustle
3	8-12	12-19	Gentle Breeze	Leaves & twigs in constant motion
4	13-18	20-28	Moderate Breeze	Raises dust and small branches move
5	19-24	29-38	Fresh Breeze	Small trees in leaf begin to sway
6	25-31	39-49	Strong Breeze	Large branches move & trees sway

Exceptions to general recording rules:

- It is also permissible to record from 09:30-10:45 and 15:45-16:30, if at these times the majority (>75%) of the survey area is unshaded and the standard (described above) weather criteria have been met.
- If your square is classed as upland then recording can take place in less suitable conditions down to 11°C with any level of cloud cover and calm, dry conditions. Upland squares are classified as:
 - (i) Squares where more than 50% of the land along the survey lines is above 300m (900ft) or
 - (ii) Squares at anywhere north of an imaginary line between Glasgow and Aberdeen.

Species identification

Try to identify and separate all species you encounter, including where possible similar species such as Small and Essex Skipper, and the 'cabbage' whites. If similar species such as Small White and Green-veined White are flying together at a site you may want to net a sample (a small clear plastic pot, kept in the shade, can be very useful to temporarily confine the butterfly so it can be examined more easily) or get a good look when a sample of individuals are perching or feeding, to determine the proportion of each species present - you can then divide up your overall counts accordingly. For example, if you catch and identify 8 Small Whites and 2 Green-veined Whites, a count of 30 unidentified whites can be converted to an estimated 24 Small Whites and 6 Green-veined Whites. Only wider countryside butterfly species and migrants are listed on the form but do record all additional butterfly species seen in the blank rows (see guidance below).

Day-flying moths and dragonflies: Also, if you are able, record any dragonflies, damselflies and moths to species level using the blank spaces on the recording form. When perched, Damselflies hold their wings together over their abdomen, whereas Dragonflies hold them out at right angles. If you can't identify them to species level then record them as one of 4 groups:

1. Demoiselles: large damselflies with dark wings or wing-bands (males) or wings metallic green or bronze; usually found near running water. **2. Other damselflies:** small, weak fliers with clear wings and typically with black and blue, red, green or buff colouration. **3. Hawkers** (including Golden-ringed

Dragonfly): large, long-bodied, often colourful insects that are usually seen in flight. **4. Darters, chasers and skimmers:** small or medium sized dragonflies in red, pale blue or ochre that are usually found perched on stems or the ground.

Training: Details of general ID training events run by BC and independently by the British Dragonfly Society can be found online at:

Butterflies and moths: www.butterfly-conservation.org

Dragonflies: www.british-dragonflies.org.uk

Recording butterflies seen off the survey lines

If you see any additional noteworthy butterflies off the survey lines (beyond the 5m box), these can be recorded (to 6-figure grid reference e.g. AB123456 if possible) on a separate casual recording form. The form is available for download from www.ukbms.org/wcbs.aspx. Casual records should preferably be sent to your County Butterfly Recorder (details can be found at www.butterfly-conservation.org/2390/recording-contacts.html) or send them to the national survey co-ordinator at Butterfly Conservation.

Submitting your data

Where possible, your **data should be entered online by the end of September**. For instructions and forms go to www.ukbms.org/mydata. If you are unable to enter your data online then paper data should be sent to the national survey co-ordinator at Butterfly Conservation (see address on page 1) as soon as possible after the fieldwork has been completed. **All site details forms from new squares should be returned to Butterfly Conservation by September 30th.**

Checklist:

- If surveying a square for the first time, draw your route with the sections numbered on to the site details form and return it with your name entered at the top.
- If you are resurveying your square please follow the same route as last year- copies of maps with routes from previous years are available from Butterfly Conservation upon request.
- Fill in the weather details: average temperature, wind direction (the prevailing direction over the whole survey), average wind speed (over the whole survey).
- Record the start and finish times of the two 1-km survey lines (sections 1-5 and sections 6-10 separately).
- Record the percentage sunshine for each section (dependent on cloud rather than shade cast by trees etc).
- Record the actual number of butterflies, day-flying/disturbed moths (optional) and dragonflies (optional) within the 5m box in the blank spaces provided.
- If you wish, record any noteworthy species outside the 5m box or whilst walking between the two survey lines on a casual recording form with a 6-figure grid reference.

Many thanks for helping with this project and we hope you enjoy the surveys!



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By submitting these records you confirm that they contain data that you have collected, give permission for the records to be used for research, education and public information, and to be made generally available for re-use for any other legal purpose under the terms of the Open Government Licence (<http://www.nationalarchives.gov.uk/doc/open-government-licence/>), and agree that your name will be associated with the record. The UKBMS partners collect personal data in order to administer, run and share results of the scheme. The personal data we will collect and how it will be stored, shared and deleted (as necessary) are covered in our Privacy Notice <http://www.ukbms.org/privacy-notice>.