G2: FIELD GUIDANCE NOTES FOR BUTTERFLY TRANSECTS

TRANSECT RECORDING

Butterfly transects are a way of measuring changes in the abundance and variety of butterflies present at a site from year to year. This requires a commitment to record weekly throughout the main six-month period in which butterflies fly in the UK, or if monitoring a single species, the flight period of that species. It is important to stick to the methodology and remain consistent if results are to be comparable from year to year. When data from a number of transects in an area or over the whole of the UK are combined this can provide information on changes in butterfly numbers over that area. The data also enables the evaluation of changes in butterfly populations on a single site, e.g. due to the effects of management, by comparison with trends from many sites.

WHEN TO MAKE TRANSECT COUNTS

Time of year: A full season's transect counts take place once a week for 26 weeks from the beginning of April to the end of September. Week 'one' runs from 1st-7th April, week 'two' 8th-14th April and so on, until week 'twenty-six' which runs from 23rd-29th September. You can record earlier than 1st April (25th-31st March is week 0, 18th-24th March is Week -1 etc.) or after September (30th Sept- 6th Oct is Week 27, and so on). If the weather conditions are suitable, you should record even if there are not likely to be any butterflies present (e.g. early/late in the season) – a negative result is still a result.

How many weeks: As many weeks should be walked as possible, as gaps reduce the quality of the data and too many can render it virtually useless. The more gaps the less species-indices can be calculated. Where it has been decided that a transect is aimed a single, usually rare, species (or sometimes for two or three species) then weeks should be walked that cover the flight period(s), with zero counts at either end.

Time of week: You can record on any day of the week, but should aim to walk the transect on the first opportunity that the weather is suitable (some weeks you may not get a second chance!). You only need to record more than once a week if the weather on your first walk did not meet the criteria.

Time of day: Transect counts should ideally be made between 10:45 and 15:45 hours, though between 10:00 and 17:00 hours is usually allowable, though butterfly activity may drop off rapidly during the late afternoon so later times should be avoided.

Weather conditions: Transect walks should only be carried out in warm and at least bright weather, with no more than moderate winds and not when it is raining. The minimum criteria are either 13-17ºC with at least 60% sunshine, or if there is no sunshine the temperature must be 17ºC or above. Windspeed (Beaufort scale) should be no more than 5 unless the transect route is sheltered from the wind. Do not record if the temperature is below 13ºC except in northern upland areas where, if butterflies are active, they may be recorded in temperatures down to 11ºc. Check that conditions are suitable before you start the transect, and that if the temperature is less than 17ºC there is likely to be sufficient sun.

WHAT TO RECORD ON

Transect counts should be made on a **UKBMS F2: Weekly Field Recording Form**. The form can be downloaded from Butterfly Conservation (BC) and UKBMS websites. Use this form in the field rather than a notebook, as experience shows that transcription errors are more likely when data is copied from a notebook.

How to record - in eight easy steps

1. Use a separate F2 form for each weekly visit.
2. Always follow exactly the same route each time you make a transect walk (be clear that you know exactly where each section starts and finishes).
3. Before you start recording complete the top of the form up to the start time.
4. Record each section once only.
5. For long sections where species are present in large numbers, it may be advisable to tally numbers on a separate sheet or notebook before entering the final total onto the standard recording form (or customise the form beforehand - see previous section above). Record actual numbers seen – an estimate will do if it is not possible to be accurate.
6. If rare species are present, resist stopping and waiting at favoured hotspots to improve your count, as this will bias results.
7. Record butterfly numbers and % sunshine in each section as you go along (see below).
8. At the end of your transect record the time, make notes of any management activity or other points of interest and check that you have filled in all the relevant boxes on the recording form.

Recording butterflies: walk at a slow, steady pace counting all butterflies seen within a fixed distance – the recommended distance is 2.5m either side of the transect line and 5m ahead. In some habitats e.g. along sea cliffs or woodland rides, it is acceptable to record at a width of 5m along one side only of the transect line. A wider area is recorded on part or all of some transects (e.g. 10m instead of 5). Always stick to the limits established when the transect was set up. Try to avoid double counting where possible e.g. when an individual butterfly repeatedly flies in and out of your recording zone. 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.

Try to identify and separate all species you encounter, including where possible 'difficult' species such as Small and Essex Skipper, whites and the fritillaries. 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 can be very useful to temporarily confine the butterfly so it can be examined more easily – hold pot in the shade), 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. Note that you will need a license to capture High Brown Fritillary and the use of nets may be prohibited in some areas - contact BC for details. If you are not sure how to identify any species of butterfly you are likely to encounter with certainty then you should take a good identification guide with you. If you see interesting species outside your recording area these should not be included in the transect count but can be recorded in the notes section at the foot of your form or on the back of the form.

Recording the weather: 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. If a distinct shadow is cast (bright cloud) then conditions may be classed as sunny. At the end of the transect, record shade temperature (e.g. with a portable thermometer placed in a shaded situation at the beginning of the transect before you start), estimate average sunshine (based on section data), and average windspeed, using the following Beaufort scale (see right).

THE BEAUFORT SCALE:

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

WHO SHOULD RECORD

Anyone who has reasonable eyesight, is reasonably able-bodied and can accurately identify butterflies in natural situations. If you are colour-blind you probably should be aware that you are likely to have more difficulty in identifying some species and maybe less difficulty in identifying others.

Ideally, a transect is recorded by a single recorder as this eliminates recorder bias. However, single recorder transects should have at least one substitute recorder who can provide cover when the main recorder is unavailable. Increasingly transects can only operate if a team of recorders is available. In this case it is vitally important that all recorders not only the know the exact route to walk (including the beginning and end of each section), but should also know the recording area limits that have been set up (e.g. is it a 5m area or larger). New recorders should always be taken on a transect walk with the main recorder two or three times before recording it on their own. Training may be available from your local Butterfly Conservation branch or from BC Regional Staff. When accompanying a recorder, walk almost alongside or just behind the person recording so as not to obstruct their line of sight or distract them and only those butterflies seen by the recorder should be recorded. It is advisable to check the forms of new recorders for any anomalies when they return from doing a transect count to ensure that the data are correct.

TRANSECT WALKER™ SOFTWARE

Transect Walker software has been specifically designed for data from butterfly transects. It is easy to use and will run on most personal computers and it can be downloaded free from the BC and UKBMS websites. Ideally, data from your F2 Recording Forms should be entered into Transect Walker each season. Transect Walker can then be used to 'package' your data ready for sending as an email attachment.

WHEN AND WHERE TO SEND YOUR DATA

Data should be sent in full, either as hard copies of the F2 Weekly Recording Forms or in Transect Walker format, to your local Butterfly Conservation transect co-ordinator (details on both BC and UKBMS websites). **If your data is to be included in the annual UKBMS analyses and reports, recording forms must be in by the end of October, and Transect Walker data by the end of November at the latest.**

FOR FURTHER INFORMATION

Visit the UK Butterfly Monitoring Scheme website (**www.ukbms.org**) or the BC website (**www.butterfly-conservation.org**). Both include details of local transect co-ordinators.

Contact:
✉ Butterfly Conservation HQ
Manor Yard, East Lulworth, Dorset, BH20 5QP
transect@butterfly-conservation.org
☎ 0870 7744309

Join the transect walking e-group - visit
http://groups.yahoo.com/group/UKTransect

UKBMS WEEK NUMBERS:

Week	Days							Month
1	1	2	3	4	5	6	7	April
2	8	9	10	11	12	13	14	
3	15	16	17	18	19	20	21	
4	22	23	24	25	26	27	28	
5	29	30						
			1	2	3	4	5	May
6	6	7	8	9	10	11	12	
7	13	14	15	16	17	18	19	
8	20	21	22	23	24	25	26	
9	27	28	29	30	31			
						1	2	June
10	3	4	5	6	7	8	9	
11	10	11	12	13	14	15	16	
12	17	18	19	20	21	22	23	
13	24	25	26	27	28	29	30	

Week	Days							Month
14	1	2	3	4	5	6	7	July
15	8	9	10	11	12	13	14	
16	15	16	17	18	19	20	21	
17	22	23	24	25	26	27	28	
18	29	30	31					
				1	2	3	4	August
19	5	6	7	8	9	10	11	
20	12	13	14	15	16	17	18	
21	19	20	21	22	23	24	25	
22	26	27	28	29	30	31		
							1	Sept
23	2	3	4	5	6	7	8	
24	9	10	11	12	13	14	15	
25	16	17	18	19	20	21	22	
26	23	24	25	26	27	28	29	