

Ng1: MONITORING BUTTERFLIES BY ANNUAL TIMED COUNTS



TIMED COUNT MONITORING

Timed counts are a useful 'reduced effort' method for monitoring rare habitat specialist butterflies, especially those whose distributions change over time across large sites. Unlike transects, timed counts need only be carried out once a year at a site to provide meaningful results. However, the margins of error in timed count data tend to be greater than transects. It is also important to note that local transect data is required to generate a meaningful index from the raw timed count data. This guidance note describes how to carry out a timed count to UK Butterfly Monitoring Scheme (UKBMS) specifications. It is vital that **all** of the required information is recorded during a timed count if it is to be used in the UKBMS to analyse trends at National, Regional and Site levels.

RECORDING BASICS

When to record: Make a timed count as near as possible to the peak flight period of the species in question. Your local Transect or BNM co-ordinator may be able to advise you on this. Only one count is needed per year if this is achieved.

Time of day: Timed counts should ideally be made between 10:45 and 15:45 hours. Between 10:00 and 16:30 hours is usually allowable, though butterfly activity may drop off rapidly during the late afternoon on warm days, so later times should be avoided.

Weather conditions: Timed counts 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 13-17°C with at least 60% sunshine, or if there is no sunshine the temperature must be 17°C or above. Windspeed (Beaufort scale) should be no more than 5 unless the survey area is sheltered from the wind. Check that conditions are suitable before you start the count, and that if the temperature is less than 17°C there is likely to be sufficient sun for butterfly activity.

HOW TO DO THE COUNT

1. Briefly walk the site to identify the extent of the adult flight area. If adults are patchily spread over a large area, it is better to identify sub-populations and survey them separately.
2. Count adults by walking the site, either in a series of parallel lines or in a zigzag path, covering the flight area as thoroughly and evenly as possible. It is important the walk passes through areas of high and low adult density: If only the best patches are visited, our analysis may over-estimate abundance.
3. Recording should be made at a slow, steady pace. Count the number of butterflies seen in a fixed time period (in minutes) sampling the whole flight area. This usually takes between 5 and 60 minutes depending on the size of the colony area.
4. It is admissible to count all butterflies seen either side as you walk the site. However, it is advisable to limit your count area to the standard 5m (transect) box to avoid possible over counting, especially of highly visible and active species on small sites. Avoid counting the same butterflies twice on sharp doglegs. Elsewhere, counting the odd butterfly twice may occur, but do not worry as the analysis accounts for this.

ESTIMATING PROPORTIONS OF SIMILAR SPECIES

If similar species such as High Brown Fritillary (HBF) and Dark Green Fritillary (DGF) are flying together at a site, you can identify a sample of the individuals and the results can be used to determine the proportion of each species present. For example, if from 45 butterflies seen, 5 HBF and 8 DGF were confirmed, the remaining 32 unconfirmed individuals can be divided up proportionately to give an estimated 12 HBF and 20 DGF, thus giving totals of 17 HBF and 28 DGF. Under UKBMS criteria you need to confirm the identity of at least 10% of the individuals seen in order for the estimated counts to be accepted. In situations where individuals are too numerous to achieve this, i.e. over 100, you should confirm the identity of at least 10 and preferably 20 individuals. **Note that you will need a license to capture High Brown Fritillary and the use of nets may be prohibited in some areas - contact the BC Species Team for details.**

WHAT TO RECORD ON

Timed counts should be recorded on an **Nf1: Timed Count Recording Form** available from Butterfly Conservation (BC). Use a separate form for more than two visits in a year, and as required for each sub-site (if the site is large).

Recording the weather: Sunshine should be estimated to the nearest 10% of the time it was sunny while you were completing the count. Bright cloud casting a shadow is classed as sunny. Record shade temperature, e.g. with a portable thermometer placed in a shaded situation at the beginning of the count before you start, and record the average windspeed code using the Beaufort scale (see right).

Mapping the flight area: Draw a sketch map of the flight area (see example below), ideally on a photocopy of a large scale OS map (e.g. 1:5000-1:25 000), and use this to record the estimated extent of the colony in hectares. Remember that the flight area may well change from year to year due to habitat and management changes.

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

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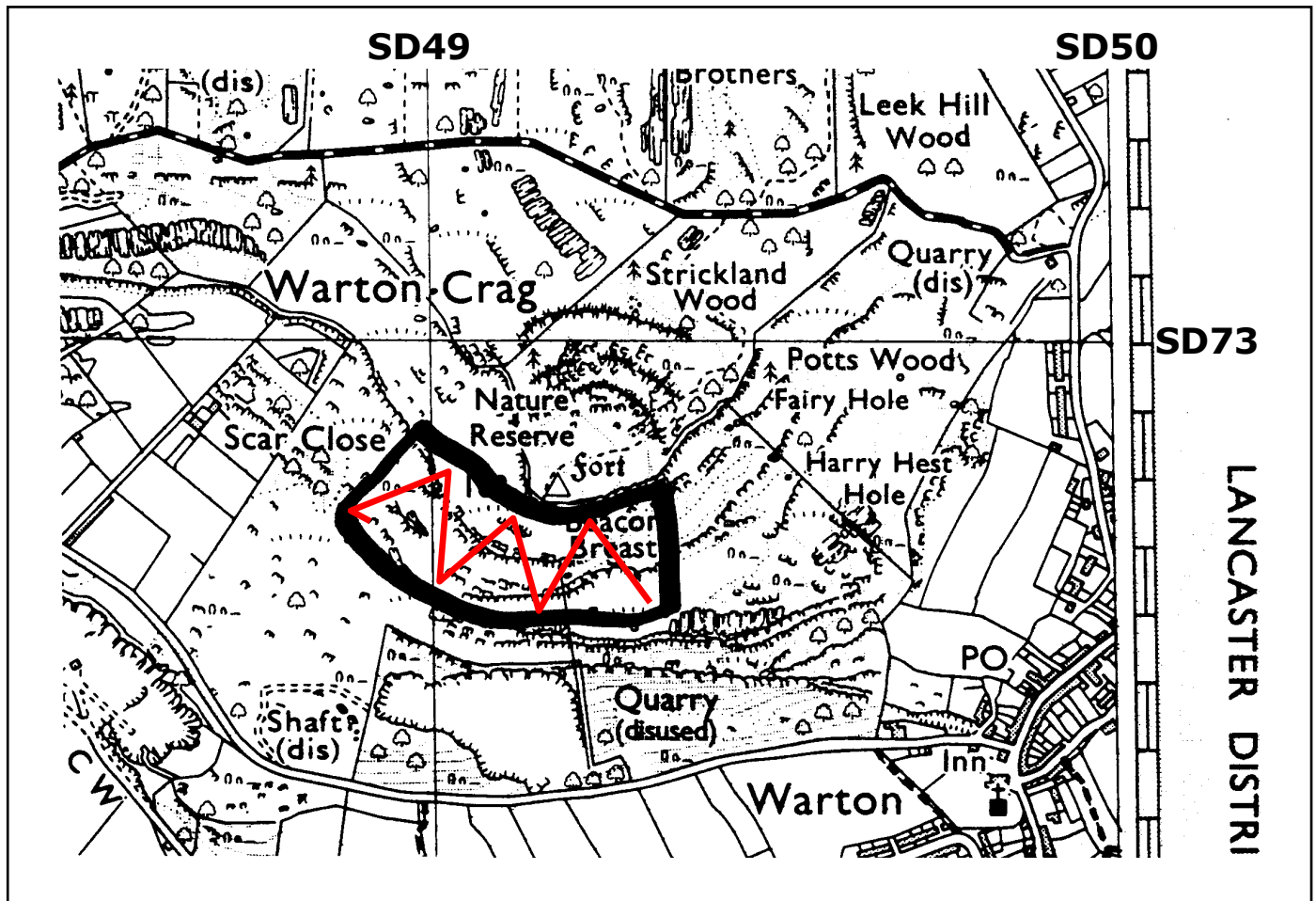


EXAMPLE MAP OF FLIGHT AREA

Note: Scale 1:10 000.

Boundary of colony shown in thick black ink.

Map has national grid annotation, and site name is clearly visible.



REMINDER OF THE MINIMUM INFORMATION TO BE RECORDED

1. Site name and 6-figure grid reference (site name should be consistent each year)
2. Date of count
3. Weather conditions
4. Number seen (confirmed and estimated)
5. Duration of count (minutes)
6. Recording width whilst walking the site and counting butterflies (5m is recommended)
7. Extent of flight area (hectares)

ELECTRONIC SUBMISSION OF DATA

The UKBMS are currently developing a system for online data entry at www.ukbms.org/mydata/, which will enable you to map out the flight area and submit your timed-count data.

WHEN AND WHERE TO SEND YOUR DATA

Send in all records of visits, importantly even if none are seen. Data should either be entered via the online system or sent in as hard copies of the Nf1 Timed Count Recording Forms to Butterfly Conservation Head Office. **If your data are to be included in the annual UKBMS analyses and reports, recording forms must be in by the end of October, and online data by the end of November at the latest.**

CONTACT FOR FURTHER INFORMATION

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