

Monitoring under-recorded butterfly populations in the Highlands – can you help?

Pete Moore.

Butterfly Conservation recently reviewed what standardised **monitoring** of butterflies was taking place across the UK (as opposed to casual sightings) in order to identify possible gaps in coverage at a regional level. The findings for **BC Highland branch area** were as follows:

1. More “all species” transects need to be set up under the UK Butterfly Monitoring Scheme (UKBMS).
2. More 1km squares need to be sampled as part of the Wider Countryside Butterfly Survey (WCBS).
3. The following priority species are under-monitored:

Marsh Fritillary

Chequered Skipper

Grayling

Large Heath

Mountain Ringlet

Northern Brown Argus

Small Pearl-bordered Fritillary

For these species, recommended monitoring is by single species transects or timed counts. For Marsh Fritillary, counting of larval webs is also an option.

The following information will let you know what is involved with transects, timed counts and WCBS squares. If, after reading this, you feel able to help out by setting up a transect (either all-species or targeting one of the above priority species), walking a WCBS square or walking the Inverpollly transect, then please contact:

WCBS squares only: funkyhaywood@yahoo.co.uk (Kirstie Ross)

Transects and timed counts: Scotland@butterfly-conservation.org or telephone 01786 447753.

If you are concerned that your butterfly identification skills are not up to scratch, then let me put your mind at rest! There are relatively few species to learn in Highland and for the all-species transects you start in spring when there isn't much around and gradually work your way up to the busier time in summer, learning as you go.

Monitoring methods

All species transects

In brief, a fixed-route walk (transect) is established at a site and butterflies are recorded along the route on a weekly basis under reasonable weather conditions for 26 weeks each year. Transect routes are chosen to sample evenly the habitat types and management activity on sites. Care is taken in choosing a transect route as it must then remain fixed to enable butterfly sightings to be compared from year to year. Transects are typically 1-2km long, taking between 25 minutes and one hour to walk, and are divided into sections corresponding to different habitat or management units.

Butterflies are recorded in a fixed width band (typically 5m wide) along the transect each week from the beginning of April until the end of September yielding, ideally, 26 counts per year. Transect walks are undertaken between 10.45am and 3.45pm and only when weather conditions are suitable for butterfly activity: dry conditions, wind speed less than Beaufort scale 5, and temperature 13°C or greater if there is at least 60% sunshine, or more than 17°C if overcast. Due to the vagaries of the British and Irish weather, it is rare in practice to achieve a full set of 26 weekly counts. However, a small number of missing values can be estimated using other counts from adjacent weeks.

Single species transects

These have been increasingly established in recent years. Whilst such transects must follow the standard methodology (see above) and must record populations at least once a week throughout the flight period (usually 4 – 6 weeks), the focus on a single (or small number of) species reduces both the time required to walk each transect and, more significantly, the number of weekly counts. With many demands on the time of site management staff and volunteer recorders, this reduced method has enabled population monitoring of particular threatened butterflies to be undertaken when otherwise it would not have been possible. By regularly recording a fixed route in standardised conditions, the number of butterflies seen on a transect can be compared from year to year.

Timed Counts

These can be very useful as they require minimal time commitment, as only one count is required in suitable weather conditions during the species' flight period (but see below). The method works best where the colony occupies an easily definable area. The recorder walks in a zig-zag fashion evenly covering the area counting individuals over a fixed time period, usually between 5 and 60 minutes which gives a relative density per hour e.g. 6 Large Heaths per hectare per hour.

The difficulty is that if only one count is being made then the count should coincide with the species' peak emergence and abundance and this will vary from year to year depending on the weather. The timing of peak abundance will only be known if there is an all-species transect in the local area which also covers this species.

WCBS squares

Most butterfly monitoring currently focuses on nature reserves and butterfly-rich places. This has led to a lack of monitoring in vast areas of the wider countryside. These areas include farmland, plantation woodland, uplands and urban green spaces. The UK Butterfly Monitoring Scheme, run by Butterfly Conservation and the Centre for Ecology and Hydrology, has developed a new Wider Countryside Butterfly Survey (WCBS) method to gauge the changing abundance of widespread species in the general countryside.

70% of the UK's land is in agricultural use. It is essential that butterflies in these areas are monitored to gauge the health of our countryside.

The new method involves making a minimum of two visits to a randomly selected square between May and August to count butterflies along two 1km survey lines running roughly north-south through the square. Time commitment is low compared to other monitoring methods.

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