



Far left:
Grayling butterflies,
female in the centre
with rarely displayed
open wings

Above left:
Grayling butterfly
caterpillar

Bottom left:
Grayling
butterfly egg

Management recommendations

Some initial management plans have been drawn up taking advice from the results of the hydrogeological survey, and some work has started. The plans involve controlling the amount of gorse and scrub, particularly on the old spoil heaps, pushing back bracken encroachment to create an area of grassland and cutting back old heather to allow it to regenerate.

Bog Mine Lichens

In addition to providing habitat for increasingly rare inland Graylings, the Bog Mine is also host to a number of rare and special lichens which, like the Graylings, appreciate the bare stony ground of old spoil heaps. The Project is working with the Shropshire Lichen Group to make sure management for the butterfly does not damage the areas where these rare lichens are found.

Acknowledgements

We are grateful to Shropshire Council for their enthusiastic support of the project and the help of all those volunteers who have undertaken survey work and site management.



This leaflet is funded by the Stepping Stones project and West Midlands Butterfly Conservation.

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GETTING INVOLVED/ FINDING OUT MORE

Working alongside partner organisations, West Midlands Butterfly Conservation has projects throughout the region, aimed at improving habitats for nationally important butterflies. In Shropshire, we need volunteers and the support of the local community to assist with recording and monitoring tasks. Help is also needed to ensure that sites remain suitable for butterflies over time by carrying out practical habitat management.

www.westmidlandsbutterflyconservation.wordpress.com

Recording what you see is really important and helps conservation organisations and others to understand changes that occur and take action to maintain habitats and populations. For casual records West Midlands Butterfly Conservation recommends the use of iRecord, an online recording system, which is very easy to use with an app that one can download to a mobile phone.

[https://irecord.org.uk](http://www.irecord.org.uk)

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THE GRAYLING BUTTERFLY - SHROPSHIRE



Grayling butterfly nectaring on heather

The Grayling (Hipparchia semele) butterfly in Shropshire

This butterfly is now classed as Endangered in the UK. In the last 50 years it has declined in abundance by over 70% and, even more alarmingly, its distribution has declined by 92%. Its remaining populations are mainly around the coast making those populations found inland in Shropshire of national importance. It is now confined to just three main areas in the county: the Stiperstones, the Long Mynd and Earl's Hill but is continuing to decline. It has recently disappeared from Llanymynech Rocks near Oswestry, although still found in a few sites in Montgomeryshire, and is now extinct on the Malvern Hills on the borders of Herefordshire and Worcestershire where it used to flourish. Reasons for its decline are not well understood and West Midlands Butterfly Conservation established a Grayling Action Group in 2023.

The Bog Mine Grayling project, a collaborative project between Butterfly Conservation and Shropshire Council

Alongside supporting regular, long term, monitoring of the butterfly's numbers in the region, the Group is also encouraging research into the reasons for site losses and The Bog Mine Grayling Project is part of this research. The Bog Mine is the best breeding site for Grayling remaining in Shropshire and is one of only a handful in the West Midlands but, even here, numbers are thought to be declining. The Project aims to study the ecological requirements of the butterfly on the site to understand better what might cause its decline and what steps are needed to improve its outlook. This factsheet summarises the Project's progress so far.



HOW TO FIND AND IDENTIFY THE GRAYLING

The flight season is June into September. It has a wingspan of around 5.5 cm. Unlike the Meadow Brown which is similar in size and colouring, they close their wings on landing and open them only to flash warnings or when courting. They frequently land on rocks or stony ground, where they blend into invisibility, and tilt over to absorb heat, like solar panels.

The Bog Mine Grayling Project study results

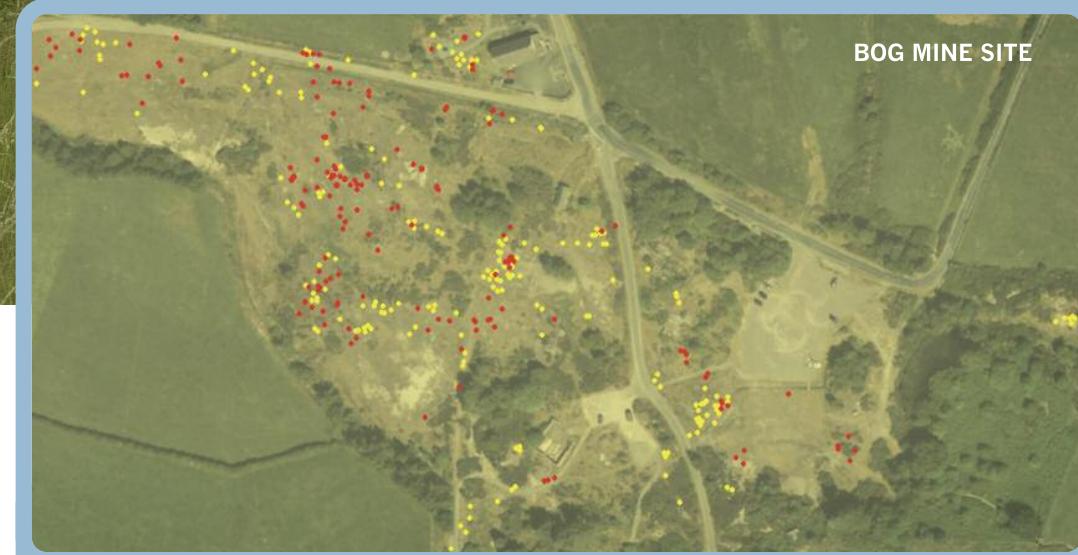
Data collection in 2023 and 2024 involved recording where eggs were laid and the habitat details such as the percentage of bare ground and the height and species of vegetation in measured areas around the egg. Recording similar data for the caterpillar was done mainly at night when they could be found feeding. Plants used for nectar, roosting and shelter were noted.

Results so far:

- Data from 154 egg locations shows 84% were laid where more than a third of the area was bare ground, usually on dead looking blades of fine grass in small, short, sparse tussocks.
- Data from 126 caterpillar locations shows only 22% were in areas with more than a third bare ground, and that the later stage caterpillars appear to prefer bigger taller grass tussocks in denser vegetation than was expected.

- Mapping the egg and caterpillar locations initially suggested that they were widespread over most of the site west of the large car park where fine grasses exist in, or near, bare ground. However the detailed data showed over 90% of eggs and 83% of caterpillars were found on slopes or the tops of slopes, banks or ditches.

- Heather is the key nectar source here. Once it started flowering almost all feeding observations were on heather. Prior to this privet, bramble and the buddleia at the visitor centre were seen being used.
- Early observations suggest heather may also provide shelter and protection on this site and that mature pine trees are important for roosting (as known for the Grayling elsewhere).



RED DOTS: eggs

YELLOW DOTS: caterpillars

- It was evident that during the winter, water can both be standing in habitats used by the Grayling for breeding and that sudden flooding or overflowing of the water channels is occurring on a regular basis. For these reasons, a hydrogeological survey was commissioned by Shropshire Council to assess whether water was responsible for some of the erosion on the site and whether that, and the standing water, could be ameliorated. The main cause of most of the water issues across

the site is the presence of clay which over time has formed an impermeable layer as part of the natural progression, frequently resulting in bare patches of ground. Management for the Grayling therefore needs to concentrate on unaffected areas and on slopes, where this work needs to avoid disturbing the existing root mat which protects against erosion. Due to presence of heavy metals from the mining, any disturbance of spoil also has to be minimised as part of our conservation efforts.

Above:
Mapped egg & caterpillar locations at the Bog Mine site.