



Brown Hairstreak

Thecla betulae

Species Action Plan

1. Introduction

The brown hairstreak butterfly was once fairly widespread in England and Wales but the number of 10km squares in which it is recorded declined by 49% in the UK between 1976 and 2014, largely due to the loss of woodlands and hedgerows and the widespread practice of annually flailing hedgerows on all sides. The species was listed as a UK BAP priority species and subsequently included in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

2. Current Status

2.1 Ecology and habitat requirements

The brown hairstreak is an elusive butterfly that lays its eggs on suckering blackthorn (*Prunus spinosa*), and sometimes other *Prunus* species, along hedgerows and woodland margins, rides and clearings. The eggs are laid at the base of the spines or at junctions between branches during August to October and remain as eggs throughout the winter months making them very susceptible to winter flailing. Sunny, sheltered positions are favoured for egg-laying. The caterpillars emerge in the following April / May and continue to feed on blackthorn until they pupate in early July. The chrysalis is formed close to the ground amongst leaves and is sometimes tended by ants. Colonies are normally centred on a wood, but egg-laying usually extends over several square miles of the surrounding countryside. A complex of woodlands, scrubby areas and hedgerows with abundant, suitably managed blackthorn is therefore required. Most colonies occur on heavy clay soils where blackthorn is dominant in the constituent hedgerows. The adults also require mature trees, so called 'master' or 'assembly' trees, where they gather at the top to mate and feed on aphid honeydew: ash (*Fraxinus excelsior*) is generally preferred either along a woodland edge or within a hedgerow.

2.2 Population and distribution

The butterfly has strongholds in three main areas of Britain: the heavily wooded clays of the West Weald in West Sussex and Surrey; the sheltered low-lying valleys of North Devon and south-west Somerset; and low-lying pastoral areas of south-west Wales. It also has a stronghold in Ireland on the limestone pavements of the Burren and lowland areas to the east including Gort and Clarinbridge. The long-term (1976-2014) national distribution trend for the species shows a change in occurrence of -49% and abundance of -15%. More recent trend data (2005-2014) shows a change in occurrence of +8% but a decline of -58% in abundance (Fox *et al.* 2015).

The thriving Worcestershire colony centred on Grafton Wood and surrounding nearby woodlands is the only colony in the West Midlands. The known area now stretches from Tibberton village in the west to the Warwickshire border in the east and from Pershore and Lower Moor in the south to Hanbury in the North (figure 1). Concerted conservation and recording effort by local volunteers over the last four decades has seen a significant increase in the size and known distribution of this population. From just **16** 1km squares in 1994 the known distribution had

grown to **54** 1km squares by 2005 and to **111** 1km squares in 2006. In 2018 the number of known positive squares stands at **235**. However, the butterfly is still threatened by inappropriate hedgerow and woodland management and conservation effort needs to be maintained if the trend in population expansion is to continue.

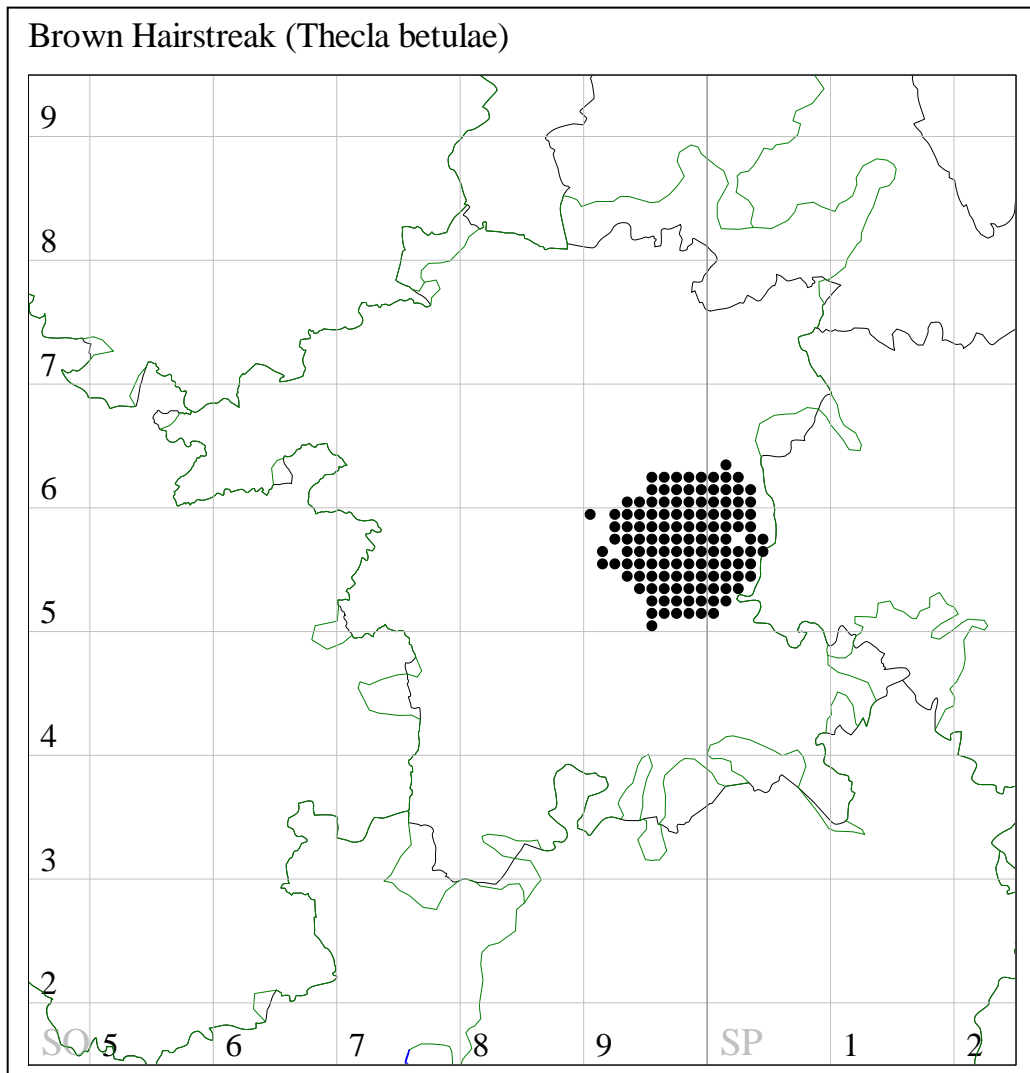


Figure 1. Brown hairstreak distribution in Worcestershire to 2018 (occupied 1 km squares). Map prepared by Butterfly Conservation.

2.3 Legislation

The brown hairstreak is listed in schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Section 41 of the NERC Act 2006.

2.4 Summary of important sites

Grafton Wood Site of Special Scientific Interest (SSSI) is owned by Worcestershire Wildlife Trust and jointly managed with Butterfly Conservation and is the largest of the remnants of the Feckenham Forest. After a period of assumed extinction in Worcestershire, brown hairstreak was rediscovered in the orchard adjacent to the woods in 1970. The wood is thought to be at the centre of the recolonisation of the surrounding countryside as increased awareness has led to better management practices in woodland and hedgerow management for the species. A regular work party at Grafton Wood undertakes management and

planting of blackthorn and ride clearance. In 2016/17 the brown hairstreak population was continuing to increase with a count of 555 eggs within the wood.

Trench Wood SSSI is also managed jointly by Worcestershire Wildlife Trust and Butterfly Conservation. Work is continuing to map the occurrence of egg laying within the wood and further blackthorn planting has taken place along with management of existing blackthorn stands. A number of other Wildlife Trust reserves have also been found to hold populations of the butterfly and the Trust plays an important role in the conservation of this species in the wider landscape.

Recorded numbers of brown hairstreak eggs in the countryside around **Feckenham** are also very high, indicating a general hotspot in this area. It includes Upper Hollowfields Farm to the west of the village, which is sympathetically managed and holds a large and important population.

3. Current factors affecting the species

- **Annual flailing of hedgerows:** flailing during the winter will destroy eggs laid the previous summer/autumn. To avoid this, hedgerows should be cut on rotation with no more than 1/3rd of the hedgerow cut in a single year.
- **Inappropriate woodland management:** neglect of woodland, particularly lack of management of the more open areas such as glades and rides where the larval foodplant is present, is likely to impact on the brown hairstreak. The same applies to woodland edge habitat where ideally any blackthorn should be coppiced on a short rotation.
- **Stock and deer browsing of blackthorn re-growth:** where important breeding habitats are adjacent to fields used regularly by grazing stock consideration should be given to the use of fencing to protect young suckering blackthorn, which is favoured for egg-laying. Within woodland habitats, it is important to assess damage by deer and take necessary steps to both protect regrowth and control deer numbers.
- **Chemical spraying of hedge-bottoms or pesticide drift:** this is a particular problem where landowners are seeking to control or prevent suckering blackthorn. Spraying will decrease availability of the suckering growth often favoured by the butterfly and destroy eggs and caterpillars.
- **Chalara ash dieback disease:** given the importance of ash trees in the ecology of the brown hairstreak, the onset of this disease is a new threat to the species which requires research and careful monitoring.

4. Current Action

4.1 Local protection

Grafton Wood, the centre of the Worcestershire brown hairstreak population, is designated a SSSI and managed jointly by Butterfly Conservation and Worcestershire Wildlife Trust. Past searches have confirmed the butterfly's presence at several other Worcestershire Wildlife Trust reserves e.g. Long Meadow, Trench Wood SSSI (also jointly managed with Butterfly Conservation), Feckenham Wyle Moor SSSI, Naunton Court Fields and Humpy Meadow (part of the Portway Meadows Local Wildlife Site (LWS) complex).

4.2 Site management and programmes of action

- Butterfly Conservation works with Natural England to ensure that landowners farming within the area central to the butterfly's Worcestershire population are aware of the species' habitat requirements. A number of local landowners have entered into agri-environment schemes with hedgerow management for brown hairstreak as a key component of their agreements.
- Grafton Wood and Trench Wood have regular work parties organised by Butterfly Conservation and Worcestershire Wildlife Trust to improve the habitat for a range of flora and fauna, including the brown hairstreak, through ride clearance, coppicing, blackthorn planting and deer fencing. Management for brown hairstreak needs to be carefully balanced with the conflicting habitat requirements of a population of the rare Bechstein's bat.
- Blackthorn planting has taken place at a number of locations over the years to provide additional egg-laying habitat.
- Butterfly Conservation volunteers lead an annual programme of activities including weekly egg-hunts during winter months and brown hairstreak larval searches in spring. A leaflet has been produced to encourage better hedgerow and woodland management and further information can be downloaded from Butterfly Conservation's website.

4.3 Survey, research and monitoring

Research on egg-laying is undertaken by volunteers through annual timed egg counts on hedgerows around Grafton Wood. The timed count survey was initiated in 1969 and is still undertaken each year under the co-ordination of West Midlands Butterfly Conservation to determine changes in the population year on year. Research has also been undertaken into the use of 'assembly trees', principally ash, for congregation, courtship and pairing.

5. Associated Plans

Woodland, Hedgerows, Scrub, Bats.

6. Conservation Aim

The core breeding area of the butterfly (including Grafton Wood, Trench Wood and field hedgerows throughout east Worcestershire) continues to be well managed and protected from damaging practices. The population and distribution of the butterfly continues to expand, monitored and studied by a supportive local community, and our knowledge of the ecology and habitat requirements of the species has improved.

7. Conservation Objectives

- Continue to work with local landowners to improve management of existing hedgerows and woodland and take opportunities to create additional habitat where possible
- Work with Natural England and other conservation partners to include specific measures to support the conservation of brown hairstreak within agri-environment or farm support payment schemes

- Continue the programme of searches for brown hairstreak eggs to monitor changes in the distribution of the species
- Maintain the timed count in the area immediately around Grafton Wood
- Monitor and instigate further research on the impact of *Chalara* ash dieback disease on the brown hairstreak

References and further information

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