

Chiltern Railways

**Management of Habitat for the  
Brown Hairstreak Butterfly:  
The Chiltern Railways (Bicester  
to Oxford Improvements) Order,  
2012**

**Report**

June 2013

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Management of Habitat to Assist in  
Brown Hairstreak Butterfly -  
Discharge of Planning Condition  
30 of TWA ref: TWA/10/APP/01:  
*(Chiltern Railways (Bicester to Oxford  
Improvements) Order, 2012*

June 2013

For and on behalf of  
Environmental Resources Management

Approved by: Ian Gilder



Signed: 

Position: Technical Director

Date: 4<sup>th</sup> June 2013

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**MANAGEMENT OF HABITAT TO ASSIST IN BROWN HAIRSTREAK BUTTERFLY - DISCHARGE OF PLANNING CONDITION 30 OF TWA REF: TWA/10/APP/01: (CHILTERN RAILWAYS (BICESTER TO OXFORD IMPROVEMENTS) ORDER, 2012**

**1.1 INTRODUCTION**

*Background*

In October 2012, the Secretary of State made the Chiltern Railways (Bicester to Oxford Improvements) Order 2012. This Transport and Works Act Order authorises the construction and operation of an improved railway between Bicester and Oxford. The Order is accompanied by a planning direction (or 'deemed planning permission') granted by the Secretary of State, which is subject to a number of planning conditions.

The Order is being implemented by the Chiltern Railway Company Ltd ('Chiltern Railways'), assisted by Network Rail. Certain of the planning conditions require that detailed designs or other information are submitted to and approved by the relevant local planning authority, which may be either the Cherwell District Council or Oxford City Council or both.

**1.2 MANAGEMENT OF HABITAT FOR THE BROWN HAIRSTREAK BUTTERFLY**

Condition 30 of the deemed planning permission requires:

*'Before development commences for the Individual Section which includes the chord line at Bicester, a scheme for the management and planting of blackthorn scrub within the Order limits shall be submitted to and approved in writing by the local planning authority, in consultation with BBOWT and Butterfly Conservation'.*

This report presents a scheme that has been prepared to fulfil the requirements of Condition 30. Consequently, it relates to the provision and management of habitat to assist in the conservation of the brown hairstreak butterfly within Section A of the approved works.

The scheme has been produced through discussions with:

- Charlotte Watkins at Cherwell District Council;
- Neil Rowntree at the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT); and
- Stuart Hodges of Butterfly Conservation.

The *Hedgerows for Hairstreak Factsheet*, produced by Butterfly Conservation and provided at *Annex A*, has been used to produce this scheme. It notes that the basic needs of the Brown Hairstreak are young Blackthorn bushes (of 2 to 5 years).

The Factsheet promotes the planting of Blackthorn stands with indented edges on south-facing, sheltered locations. These areas should be unshaded by trees, with only half the available area planted.

In terms of creating a suitable new habitat, the Brown Hairstreak butterfly requires access to long lengths of bushy hedgerows, with colonies occurring usually at low densities over a wide area. The Factsheet further advises at least a third of these hedgerows need to remain uncut in any one year, to provide suitable habitat for laying eggs.

The *Hedgerows for Hairstreak Factsheet* has been referred to in preparing this scheme.

### 1.3 CREATION OF NEW HABITAT

It is proposed to create a number of blackthorn stands (minimum 10) in small patches (10-15 sqm) with irregular indentations formed through the planting, to provide more sheltered locations. The indicative areas of planting are illustrated in *Figure 1*. It covers c.50% of the area set aside for the creation of this habitat. The final planting scheme will be guided by the Limits of Deviation (as shown on *Figure 1*) and the design of any offline works on the ground.

This location has been chosen for a number of reasons, as outlined below:

- The boundary will need to be re-established in this area in any event, so the planting can serve more than one purpose.
- It also has a number of existing hedgerows in close proximity (generally to the south) with limited, or no, shading from existing trees. Consequently, the new planting, will be supplemented by the established hedgerow.
- The area is located directly adjacent to an existing County Wildlife Site, which is proposed to form part of a large residential application to the south of the railway line (Planning Ref: No: 13/00001/SCOP (EIA Scoping Opinion). The existing hedgerows, which should be retained as part of the proposed residential development, will be supplemented by the new planting.

The planting will be allowed to grow out to the south and sucker to produce further breeding conditions. It will provide the butterfly with a maze of dense, sheltered but un-shaded south facing scrub. The surrounding open areas (covering c.50% of the total habitat area for the butterfly) will be planted to create herb-rich grassland, using native species seeded from the local area. This approach reflects the *Hedgerows for Hairstreak Factsheet* advise that '*east-west hedges with a sunny, south-facing side are favoured by the Brown Hairstreak*'.

All proposed areas of planting will be within the permanent land take (Limits of Deviation as shown on *Figure 1*) as set out in the Order. It is noteworthy

that this area is along an operational railway line which will allow for development of the habitat away from human intrusion.

The planting shall be undertaken in the first available planting season following the completion of the construction works relating to the Bicester Chord Section (Section as referred to Planning Ref: 13/00106/DISC).

Unless otherwise agreed by the local planning authority, any plant that is removed, dies or become seriously diseased shall be replaced, in the first available planting season, with a specimen of the same species. It is expected that new planting will be with a younger specimen than that lost, so as to provide younger plant for the butterfly.

#### **1.4** *MANAGEMENT OF NEW HABITAT*

The management scheme has been prepared reflecting advice on how the Brown Hairstreak butterfly is affected by hedge removal and cutting.

Once the proposed planting has become established, it will be managed through a rotational cutting regime as part of regular maintenance works.

The planting will be left uncut every other year, with no more than 25% allowed to be cut back in each cutting year.

Irregular cutting of indentations into the Blackthorn will also occur. This will provide more sheltered conditions, ensuring a healthy hedge and producing a more diverse and attractive green area.

The hedges will be trimmed as late as possible in the winter months, ideally during January and February, to be least damaging to other wildlife such as birds and mammals.

Mindful of potential harm to the eggs and caterpillars of the butterfly and the hedgerow planting, chemical spraying within the habitat will be avoided so far as is practicable.

#### **1.5** *CONCLUSION*

The proposed scheme for Brown Hairstreak butterfly is intended to:

- improve survival and viability of the butterfly; and
- increase viability of the grassland network in the area;

The scheme has been prepared to aid in the conservation of the Brown Hairstreak butterfly but will also aid other hairstreak butterflies known to be located in the Oxfordshire area.

It will also help create a new habitat for a wider number of species through the development of hedgerows and grassland, and in time, may provide an extension to the adjacent County Wildlife Site.

## Annex 1





Butterfly  
Conservation

## Could you have Brown Hairstreak on your land?

The Brown Hairstreak was once very widespread in England and Wales but has declined severely due to the loss of woodlands and hedgerows and increasingly intensive hedgerow management. Its remaining strongholds are in the western Weald of Surrey and Sussex, mid Devon, west Somerset and south-west Wales, but elsewhere colonies are scattered and uncommon.

Colonies are normally centred on a wood, but egg laying usually extends over several square miles of the surrounding countryside. A complex of woodlands and hedgerows with abundant, suitably managed, blackthorn is therefore required. Most colonies occur on heavy clay soils where blackthorn is a dominant constituent of the hedgerows.

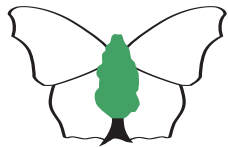
Reducing the amount of annual hedgerow trimming can save time and money. Under Defra's Environmental Stewardship Scheme, administered by the Rural Development Service, there are financial incentives to manage hedges and field margins in a way that is sympathetic to the needs of not only the Brown Hairstreak but also other hedgerow wildlife. Visit [www.defra.gov.uk](http://www.defra.gov.uk) for more details.

Butterfly Conservation would like to thank English Nature for their assistance in producing this leaflet.

# Hedgerows for Hairstreaks



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Butterfly  
Conservation

Saving butterflies, moths and their habitats



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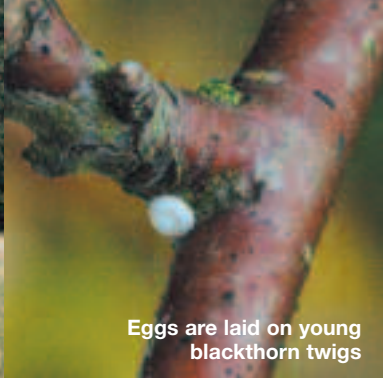
## Hedgerow and woodland management to conserve the Brown Hairstreak

**This rare butterfly depends upon hedgerows and woodland edges for its survival. It breeds on blackthorn and other members of the plum family. Colonies usually occur at low densities over a wide area. Because of its dependence on hedgerows, the butterfly is affected by hedge removal and frequency of cutting. This leaflet gives some simple information on how to help conserve this beautiful, though secretive butterfly.**





A well managed hedgerow



Eggs are laid on young blackthorn twigs



Caterpillar showing distinctive shape



Adult showing underside pattern

# The Brown Hairstreak

Adults emerge from late July and may be on the wing into October. They spend much of their lives in the treetops or along woodland edges feeding on honeydew secreted by aphids and secretions produced by ash trees. They are most often seen with their wings closed, revealing golden brown underwings crossed by two thin white lines and have distinctive orange tails. Their upper surfaces are dark brown, though the female has orange patches on the forewings.

The females are more commonly seen as they fly along hedgerows looking for suitable egg laying sites on young blackthorn stems. The eggs remain here throughout the winter and do not hatch until the leaves open during the following May.

The pale green caterpillar feeds on blackthorn leaves until it pupates in early July. The chrysalis is formed close to the ground, amongst leaves, and is sometimes tended by ants.

### Position of eggs

The butterfly's presence is most easily confirmed by searching blackthorn for eggs during winter. The white, pinhead sized eggs are conspicuous against the dark bark of the young blackthorn twigs. They are usually laid singly, at the base of thorns, on protruding shoots or suckering blackthorn at the hedge bottom. Sunny, sheltered positions are favoured for egg laying.

## Management to conserve the Brown Hairstreak

### Blackthorn hedges

As the Brown Hairstreak's eggs and caterpillars occur on young blackthorn twigs for much of the year, most hedge trimming will kill or affect them. Annual trimming is particularly harmful and can eradicate populations altogether. This can be avoided, and populations enhanced, by adopting appropriate cutting regimes.

- ◆ Trim hedgerows once every 3-5 years, cut no more than a third each year and ensure that the hedges cut in any one year are in different areas. *This can be 50% cheaper than annual cutting, as well as ensuring a healthy hedge and producing a more diverse and attractive countryside.*
- ◆ Rotations over 7 years involving hedge laying or coppicing are also highly suitable. *This produces young growth that is highly attractive to egg laying females. (It is advisable to fence early coppice against browsing by stock or deer.)*
- ◆ Cut hedgerows as late as possible in the winter months, ideally during January and February. *Late cutting will be least damaging to other wildlife such as birds and mammals.*
- ◆ As a minimum, hedges should be left uncut every other year. *This will also benefit a host of other wildlife, especially birds.*
- ◆ Avoid chemical spraying up to field edges and, ideally, leave an uncultivated margin. *Spraying can damage the eggs and caterpillars, as well as the hedgerow, so leaving wide unsprayed field margins is beneficial to wildlife.*
- ◆ Look for opportunities to restore and create hedgerows using blackthorn, especially if you can link up existing hedges and woodland edges. *Generally, east-west hedges with a sunny, south-facing side are favoured by the Brown Hairstreak.*



Ideal habitat is also found on woodland edges

### Woodland edges and rides

Broad-leaved woods are essential to most Brown Hairstreak colonies and can be managed for their benefit.

- ◆ Maintain all farm woods and broad-leaved wood edges and retain trees identified as key mating sites and congregation points. *Adults tend to congregate around specific groups of trees, particularly in mid August when seeking mates. The same trees, usually prominent ashes, are used for this purpose from year to year. Where these trees can be identified they should be retained whenever woodland management occurs.*
- ◆ Coppice or fell trees in rotation. *Spread any clearing or coppicing work over several years and leave some belts of woodland intact to act as focal points for the colony.*
- ◆ Manage woodland edges and rides in rotation as for hedges. Woodland edges and wide, sunny rides can also form important areas for egg laying. *Any blackthorn should be cut on rotations of 3-5 years, similar to that for hedgerows. Creating new east-west rides within woods can be valuable, especially where they link existing egg laying areas. When creating new woods or rides plant blackthorn along sunny, sheltered edges.*

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