Butterfly Conservation Regional Action Plan for the West Midlands

Compiled by Jenny Joy & Mike Williams

Butterfly Conservation Report S08-19

Butterfly Conservation

Esmée Fairbairn FOUNDATION

Butterfly Conservation Warwickshire

West Midlands Branch

Front Cover Photographs
Dark Green Fritillary by Steven Cheshire
Drab Looper by Kevin McGee

Back Cover Photographs
Yellow-legged Clearwing by David Grundy
View over Whixall Moss by Steven Cheshire
Silver-studded Blue by Stephen Lewis

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With significant help from Mike Slater, Nigel Stone and John Tilt and contributions from John Bryan, Trevor Bucknall, David Brown, Jane Ellis, Dean Fenton, Dave Grundy, Michael Harper, Ian Hart, David Jackson, Stephen Lewis, Tony Simpson, Richard Southwell and Keith Warmington

July 2008

Includes information on Birmingham and Black Country, Herefordshire, Shropshire, Staffordshire, Warwickshire, and Worcestershire which are covered by Butterfly Conservation's Warwickshire and West Midlands Branches.

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Executive Summary

1. This new publication represents an update of the West Midlands Regional Action Plan (RAP) published in 1997. This plan was the first regional strategy document for Lepidoptera produced by Butterfly Conservation in the UK and was intended as a guide to conservation priorities for partner organisations involved in the local biodiversity action planning (LBAP) process. The West Midlands RAP has been very successful in this aim with most Biodiversity Action Plans for the counties making up the West Midlands region now including plans for declining and endangered butterfly and moth species found in their areas.

2. Further recording and survey work over the subsequent ten years has considerably added to our knowledge of the distribution of the region's butterflies and moths and ecological research means that we are now much better informed about the conservation needs and priorities for the region. A review of the original RAP is therefore timely. Over the past five years in particular, largely as a result of the appointment of regional staff working in partnership with branch volunteers and external organisations, Butterfly Conservation has been able to develop a number of landscape level initiatives (which are documented in this report) aimed at tackling some of the problems affecting butterflies and moths. Such initiatives are key to reversing the fortunes of our declining species

3. In 2001, Butterfly Conservation published The Millennium Atlas of Butterflies in Britain and Ireland (Asher *et al*) which highlighted worrying declines affecting many of our butterflies. These declines have continued and are further highlighted in the recent The State of Butterflies in Britain and Ireland (Fox *et al*, 2006a) which plots the fortunes of Britain's butterflies over the subsequent five years. The recording effort that underpinned these two publications is reflected in the revised West Midlands RAP which includes new distribution maps for our key species. The maps show the distribution of all key priority species pre 1995 and for the period 1995-2007.

4. These national declines documented in the aforementioned reports can also be seen at a regional level. While, as a result of considerable conservation effort on the part of Butterfly Conservation and partner organisations, the decline of some species has been slowed, there are mounting concerns about other species including some that had previously been quite widespread in the region. These changes are highlighted in the revised regional priority list (see page 8) and also the fact that new butterfly species have been added to the UK BAP list when this was revised last year. Reasons are given for these changes in this report.

5. While our knowledge of the status and conservation requirements of the region's moths is not as complete as that for butterflies there has been a huge upsurge of interest in moths both regionally and nationally over the past ten years and we have been able to give much more emphasis to moths in the revised RAP than had been possible in the original publication. This increased interest has been greatly assisted by the production of a new Field Guide to the Moths of Great Britain and Ireland (Waring and Townsend, 2003), together with the publication of a number of local county-based atlases within the region. There are now an increasing number of active moth recorders regionally, some of whom are specialising in microlepidoptera as well as the more usual macro-moths. A number of new initiatives have been developed regionally including a Garden Moth Survey (www.gms.staffs-ecology.org.uk) which will increasingly produce valuable data on the distribution and status of our moths. Nationally, Butterfly Conservation has produced a report on the status of the larger moths (Fox *et al*., 2006b) and has recently launched a major recording initiative known as Moths Count.

6. The report has been divided into two main sections covering the key butterflies and moths separately. Species accounts and/or statements are given for all high priority butterflies and moths and information is also provided on a secondary list of medium and low priority species. Each of the species accounts provide information on the distribution of the butterfly or moth regionally, particular threats affecting the species, what survey and monitoring work is taking place, any management work or conservation initiatives underway, and is followed by targets and required actions over the next five years.

7. At the end of each section, references are provided to the major publications and reports that have been used in the compilation of this report. The editors are grateful to the authors of these reports for allowing us to make use of their data and conclusions.

8. The challenges facing butterflies and moths in our rapidly changing environment are very real. Continued fragmentation, deterioration and loss of wildlife habitats is combined with the uncertainties of our changing climate. Butterflies and moths are very sensitive indicators of what is happening to our wider biodiversity. It is important for us all that they and their habitats are effectively conserved. It is hoped that the publication of this new Regional Action Plan will serve as a useful tool to the two regional Butterfly Conservation branches and our many partner organisations in shaping their future strategies and actions and ensuring a positive future for our butterflies and moths.

Jenny Joy and Mike Williams
July 2008

Silver-studded Blue by Steven Cheshire

Contents

1. Background and General Aims

The *Action for Butterflies Project* and Regional Action Plans: Their role within Butterfly Conservation and the Biodiversity planning process.

Background to the Biodiversity planning process
At the Earth Summit in Rio de Janeiro in 1992, the UK Government signed the Convention on Biological Diversity which required the development of a national strategy. In early 1994, the Government produced the UK Biodiversity Action Plan which adopted a systematic approach whereby targets are used to focus conservation action. This has since ensured that there is now considerable effort going into the production of Local Biodiversity Action Plans through the Agenda 21 process. Butterfly Conservation is attempting to maximise the benefits for butterflies and moths and their habitats through the Action for Butterflies project.

The Action for Butterflies Project
The project began in 1994 and was funded by the World Wide Fund for Nature (WWF-UK) and the Country Agencies (English Nature, Scottish Natural Heritage, Countryside Council for Wales). It aimed to place the conservation work of the Society within an overall framework, aiding the Society at national and local level to develop priorities for action. National Species Action Plans were written for the 25 most threatened butterflies by the end of 2000. Butterfly Conservation branches also helped to produce Regional Action Plans for each of 14 regions in the UK to guide action at a local level from1997-2000. These plans were intended to incorporate both national and regional priorities, and to aid the conservation of species and habitats characteristic of the local area (Bourn, Warren & Kirkland, 1996).

Regional Action Plans: The Wider Context
As well as guiding Butterfly Conservation's own actions, the Regional Action Plans were designed to provide our conservation partners with detailed and sound conservation priorities for Lepidoptera for inclusion in Local Biodiversity Action Plans. As the West Midlands Regional Action Plan was the first to be produced (Joy, 1997), it is now very out of date (and contained far less moth information than many of the later regional plans). The only updates produced on this original plan were annual reviews in 1998 (Williams, 1999), 1999-2000 (Joy, 2001a) and 2002-2003 (Joy, 2004a). For this reason, the West Midlands and Warwickshire branches of Butterfly Conservation have decided to fully revise and update the original plan in order to reflect the changed status of many of our regional butterflies and moths.

General Aims of the West Midlands Regional Action Plan
- To identify butterfly and moth species most at risk within the region
- To outline the site and management requirements of these species
- To identify the most important areas and sites for butterflies and moths within the region
- To highlight further survey, management or monitoring work required

PART I. Butterflies

2.1 Regional Priority List

The high priority species listed below reflect Butterfly Conservation's national and regional priorities.

High Priority Species
Dingy Skipper
Grizzled Skipper
Wood White
Brown Hairstreak
White-letter Hairstreak
Small Blue
Silver-studded Blue
White Admiral

High Priority Species
Small Pearl-bordered Fritillary
Pearl-bordered Fritillary
High Brown Fritillary
Dark Green Fritillary
Wall*
Grayling
Small Heath*
Large Heath

* priority for research only

Medium Priority Species
Green Hairstreak
Brown Argus
Silver-washed Fritillary

Table 1: National Priority Ratings (NPR) for Regionally Important Butterflies

Species	1997 NPR	2007 NPR	Regional Rating	UK BAP Status*
Dingy Skipper	Low	High	High	Priority Species
Grizzled Skipper	Medium	High	High	Priority Species
Wood White	Medium	High	High	Priority Species
Green Hairstreak	Low	Low	Medium	-
Brown Hairstreak	Medium	High	High	Priority Species
White-letter Hairstreak	Low	High	High	Priority Species
Small Blue	Medium	High	High	Priority Species
Silver-studded Blue	Medium	High	High	Priority Species
Brown Argus	Low	Low	Medium	-
White Admiral	Low	High	High	Priority Species
Small Pearl-bordered Fritillary	Medium	High	High	Priority Species
Pearl-bordered Fritillary	High	High	High	Priority Species
High Brown Fritillary	High	High	High	Priority Species
Dark Green Fritillary	Low	Low	High	-
Silver-washed Fritillary	Low	Low	Medium	-
Wall**	Low	High	High	Priority Species
Grayling	Low	High	High	Priority Species
Small Heath**	Low	High	High	Priority Species
Large Heath	Medium	High	High	Priority Species

* The current UK BAP status is based on a new list produced summer 2007

** Butterflies where the only UK BAP action proposed is research only. These two butterflies will join 69 moths on a widespread but rapidly declining UK BAP group plan.

2.2 Methods used for assigning regional priorities

The national ratings for species have changed significantly since the 1997 RAP (see Table 1) with most of the high priority butterflies in the region now being nationally important species as well. Table 2 shows additional species which have been upgraded on a regional level for the following reasons:

a) There are less than 30 colonies remaining.
b) The species occupies less than 10% of recording area.

Table 2: Species upgraded at a regional level

	Qualification criteria	
Species	**a)**	**b)**
Green Hairstreak	-	Yes
Brown Argus	-	Yes
Dark Green Fritillary*	Yes	Yes
Silver-washed Fritillary	-	Yes

* The **Dark Green Fritillary** has been elevated from a low priority species nationally to a high priority species regionally due to it qualifying under both a) and b) above.

The **Northern Brown Argus** (*Aricia artaxerxes*) is no longer included as a high priority species for the West Midlands region as recent genetic analysis by universities in Britain and Norway has suggested that single brooded populations in this part of the country are in fact Brown Argus (*Aricia agestis*) (Asher *et al.*, 2001).

Table 3 - UK BAP butterflies - Reasons for recent qualification.

Species	Reason for Qualification
Dingy Skipper	Declining in abundance and range
Grizzled Skipper	Severe decline in both abundance and range
Wood White	Reduction in range of monitored populations
Brown Hairstreak	Severe and rapid reduction in range and abundance in recent years
White-letter Hairstreak	Severe decline in numbers and reduction in range
Small Blue	Severe decline in abundance
Silver-studded Blue	Nationally scarce species with no evidence of recovery
White Admiral	Evidence of recent decline
Small Pearl-bordered Fritillary	Decline in both abundance and range
Pearl-bordered Fritillary	Severe declines in both abundance and range
High Brown Fritillary	Large decline in abundance and distribution in recent years
Wall	Severe reduction in range
Grayling	Severe decline in both abundance and range
Small Heath	Severe reduction in numbers at monitored sites
Large Heath	Although increasing in numbers it has shown a 50% reduction in range since 1970

2.3 Landscape Level Projects

Since Butterfly Conservation's original West Midlands Regional Action Plan was written in 1997 (Joy, 1997) Butterfly Conservation has been placing more emphasis on developing a landscape level approach to conservation work instead of focussing effort on isolated sites or nature reserves. Landscape scale projects allow butterflies to respond to changes in the climate and environment. If one area becomes unsuitable, they can safely colonise a new area without having to fly over vast areas in search of suitable habitat.

With the widespread loss of wildlife habitats it is vital that remaining areas are suitably managed for butterflies and moths. Our dedicated local volunteers and staff now work even more closely with farmers, landowners and partnership organisations in a number of key areas across the region to ensure appropriate habitat management takes place especially for our priority species.
Some examples of Butterfly Conservation's recent landscape level projects in the region are:

Countdown 2010 Project 'Conserving Butterflies and Moths at a landscape level in the Midlands' was funded by Natural England and the Esmee Fairbairn Foundation and took place from 2006-2008. This project involved two members of Butterfly Conservation staff and a large number of local volunteers. The primary aim was to conserve some of the region's most threatened butterflies and moths by co-ordinating practical action in a number of landscape areas, by developing effective local partnership, by raising public awareness of key habitats and by drawing on examples of good practice. This project took place in 14 landscape areas which included the Wyre Forest, Malvern Hills, South Shropshire and North Herefordshire Woodlands, South Shropshire Rush Pastures, Herefordshire Commons, Cannock Chase, Telford & Wrekin area and Black Country and Warwickshire Brownfields.

The **Herefordshire Woodlands Project** was part-financed by the European Union (EAGGF) and DEFRA through the Herefordshire Rivers LEADER+ Programme and ran from 2005-2007. The project involved one member of Butterfly Conservation staff and an increasing number of local volunteers. The project aims were to encourage local people to monitor butterflies and moths and carry out practical conservation, to encourage landowners, foresters and woodland managers to carry out management that helps butterflies and moths and to promote and celebrate the landscape and its unique assemblage of butterflies and moths. A SITA Trust funded project on **Herefordshire's Wood Whites** is now due to start in 2008. This will involve carrying out management work to benefit the Wood White on 10 Forestry Commission sites as well as setting up Wood White monitoring programmes and carrying out some research work.

The **Princethorpe Woodlands Project** in Warwickshire (which started in autumn 2004) took a landscape approach to wildlife conservation in this area. Under consideration were the negative effects of fragmentation, methods of increasing connectivity, creating sustainable economic woodland wood fuel products, more positive approaches to woodland management and ways of increasing local involvement.

Other active landscape level projects currently being run in Warwickshire by Butterfly Conservation's Warwickshire Branch include:

Southam Project - Landscape project based on the principle of creating a network of butterfly and moth habitats on developed and previously developed land such as quarries, landfill sites, railways, spoilbanks, and roads.

Rugby Project - Landscape project focussing on restoring and creating a series of new sites which will benefit butterflies and moths in an urban setting. These sites include a new road, cycle track, rail link and industrial developments which have been restored/created on largely decommissioned agricultural and previously developed land.

Nuneaton and North Warwickshire Coalfield Project - this involves working with other partners to enhance previously developed land such as quarries and coal mines for the benefit of butterflies and moths as well as other wildlife groups.

Long Marston Project - this involves working with a large developer and other partners to ensure a former Ministry of Defence site and adjoining discussed railway lines are redeveloped to increase the number and size of butterfly and moth colonies present and the extent of their habitat area (e.g. Grizzled Skipper butterfly).

Sutton Park - A three year training, research and survey project on Lepidoptera based on this National Nature Reserve.

The **Hedgerows for Hairstreak project** focussed on the Forest of Feckenham is run by Butterfly Conservation's West Midlands branch. It is taking a landscape level approach to the conservation of the Brown Hairstreak butterfly which is only now found in a small area of east Worcestershire. Branch members have built up a database of the distribution of the butterfly mainly through the carrying out of egg searches in the winter months. This information has been fed into DEFRA and now Natural England who have been able to encourage local landowners to enter their hedgerows into various stewardship schemes. The Brown Hairstreak is very susceptible to annual flailing of hedges and any modification of these practices can lead to considerable conservation gains for the butterfly. Local awareness of the importance of this species has been raised through a series of events and activities and local people have been recruited to act as Local Champions. Additional blackthorn has been made available for new planting of hedges and in gardens and training days have been held for local farmers. Funding has come from Awards for All, the West Midlands Biodiversity Partnership and DEFRA/Natural England.

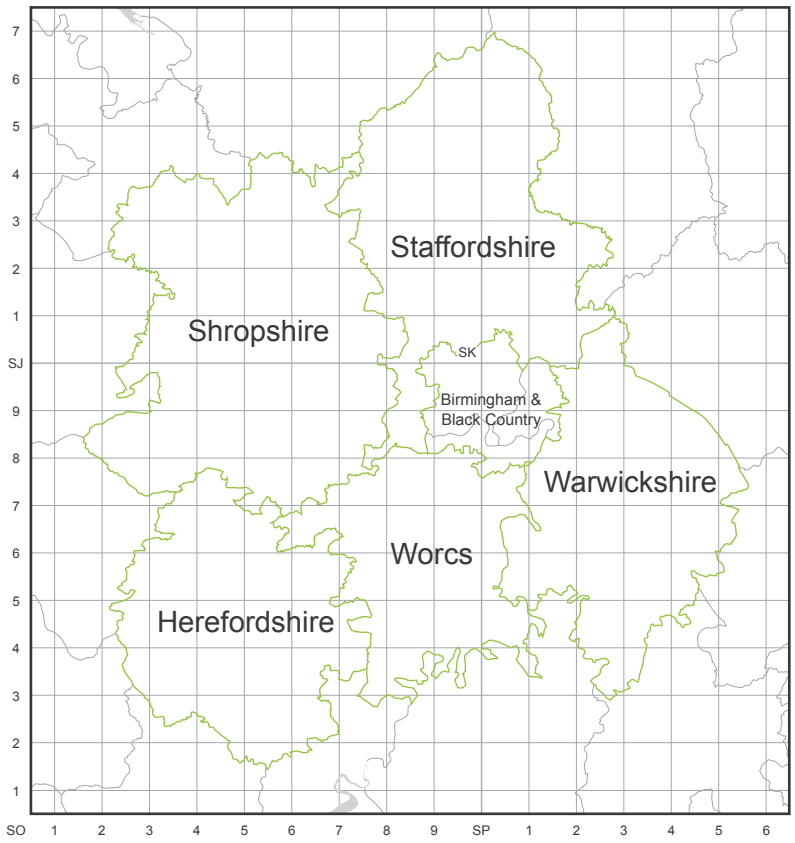
The SITA Trust funded **Back to Orange Project 'Conserving the Fritillaries of the Wyre Forest'** is being jointly managed by the Forestry Commission and Butterfly Conservation. It will enable a three year survey, monitoring and research programme to be focused on key Lepidoptera such as Pearl-bordered Fritillary, Common Fan-foot, Silver-washed Fritillary and Wood White. It will allow essential restoration work in six special areas to maintain and link fritillary strongholds for future generations. It will hopefully also result in many more local people being involved in Lepidoptera survey and monitoring work in the future as a result of training events set up through a larger Heritage Lottery funded 'Grow with Wyre' scheme. This 'Grow with Wyre' scheme being led by the Forestry Commission will deliver 22 very varied projects in the Wyre Forest area over the next four years.

Wyre Forest Pipeline, a key area within the Back to Orange Project by Jenny Joy

View towards Grafton Wood, a joint Worcestershire WT and Butterfly Conservation reserve in the Forest of Feckenham area by Steven Cheshire

2.4 – Key to distribution maps, species accounts and tables

- Records 1995 to 2007
- Records pre-1995



Abbreviations used in tables are as follows:	
BC	Butterfly Conservation
CCW	Countryside Council for Wales
EN	English Nature (preceded Natural England)
FC	Forestry Commission
FWAG	Farming & Wildlife Advisory Group
LAs	Local Authority
MHC	Malvern Hills Conservators
NE	Natural England
NT	National Trust
WT	Wildlife Trust
WMBP	West Midlands Biodiversity Partnership

In each monitoring section summary, the transects are given by branch area as the West Midlands and Warwickshire branches of Butterfly Conservation have separate transect coordinators (John Tilt and Keith Warmington respectively).

3. Species accounts

The species accounts for High and Medium priority butterflies are each divided into sections: Distribution and Status, Threats, Survey, Monitoring, Management, Policy, Publicity, and Actions and Targets.

3.1 High priority species

3.1.1 Dingy Skipper - *Erynnis tages*

This species occurs on old industrial sites such as quarries, colliery spoil heaps and abandoned railway sidings, on heathland and downland as well as on the coast. It is a butterfly of successional habitats which favours incomplete vegetation cover on sites with large areas of bare ground or rock (Gutiérrez, Thomas & León-Cortés, 1999). Although the Dingy Skipper usually utilises bird's-foot trefoil *Lotus corniculatus*, horseshoe vetch *Hippocrepis comosa* can be preferred on warm downland sites.

Dingy Skipper by Steven Cheshire

Distribution and Status in the West Midlands - this species has a localised but relatively widespread distribution in the region with many colonies existing on post- industrial habitats, old railway lines, reclaimed amenity sites or woodland meadows. However, the Dingy Skipper is currently considered to be undergoing a major and accelerating decline in all counties, in particular, Herefordshire, Shropshire and Staffordshire.

Birmingham and Black Country

A number of important regional sites fall within this area including Hawne Colliery and the Dreadnought Road, Pensnett Trading Estate in Dudley (Richard Southwell, *pers. comm.*).

Herefordshire

Only recently recorded on a small number of sites around the edge of the county.

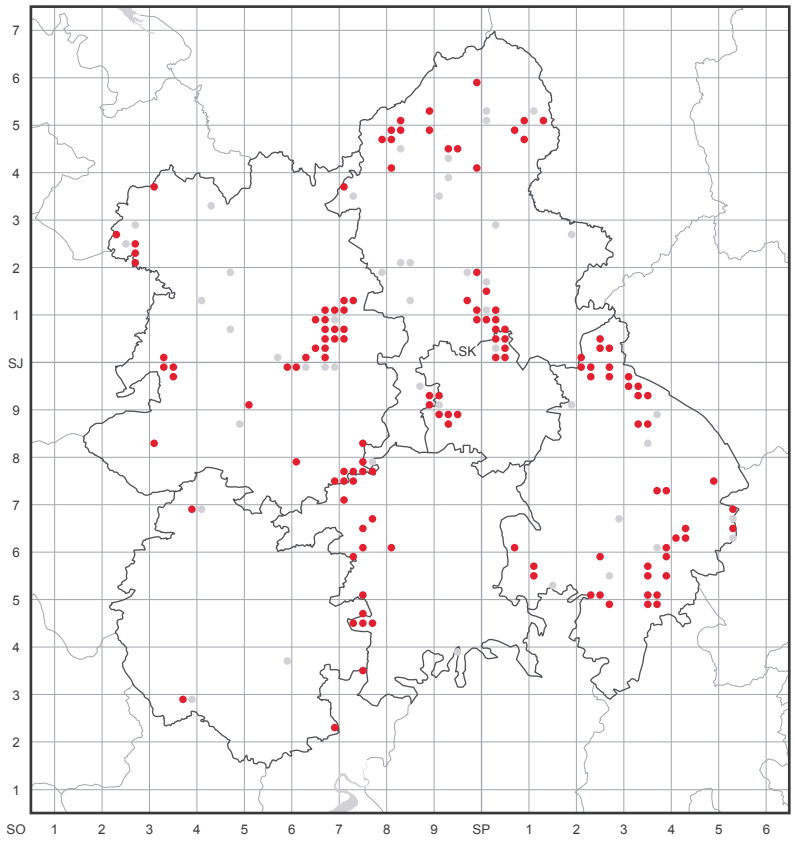
Shropshire

A local and declining species with many colonies currently under threat from development. Two key areas are the Oswestry Uplands (where it exists in abandoned quarries) and the Telford & Wrekin area (where it is mainly found on brownfield sites).

Staffordshire
Still a fairly widespread species. It was recorded on at least nine previously unknown sites for this species in 2004, all of which were brownfield sites previously used for quarrying or mining activities (Bryan, 2004). There are also more potential Dingy Skipper sites in Staffordshire yet to be surveyed.

Warwickshire
The recent fortunes of the Dingy Skipper are very dynamic; a large number of extinctions have occurred especially on Brownfield sites in the north-west and east of the county, while new colonies have become established in the north and especially the central area around Kineton.

Worcestershire
The only recent records are from Knapp and Papermill and at Penny Hill Bank near Martley (Trevor Bucknell, *pers. comm.*).



Threats
- Absence of appropriate woodland management.
- Development or improvement schemes such as house building and tree planting.
- Decline in habitat quality on unmanaged grassland sites due to natural succession to woodland.

Survey - Sites in Telford have been surveyed for this species in 1997, 2002 (Joy, 2002a) and 2006 (Lewis, 2006). In 2006, the number of Dingy Skipper seen in the Telford & Wrekin area was estimated to have declined by 32% during the period 1997-2006. If this rate of decline were to continue Lewis estimated that Dingy Skipper would be approaching extinction in Telford & Wrekin within the next 20 years.

Survey of at least nine Staffordshire sites occurred in 2004 (Bryan, 2004). One of the Staffordshire sites found to support Dingy Skipper in 2004 (Chatterley Whitfield) may hold the largest colony of this species in the whole region (Bryan, 2004). During a volunteer survey for Dingy Skipper in the Cannock area in 2006-7 new sites were discovered all close to historic railway corridors.

In Warwickshire the aim was to resurvey all known and potential sites for the Dingy Skipper between 2006 and 2010. So far an impressive 82 sites out of 88 have been resurveyed (Slater, 2008b).

Monitoring - In the West Midlands branch area there are 6 transects with Dingy Skipper records Haugh Wood - Knapp and Papermill - Lords Wood - Monkwood - Wigmore Rolls and Wyre Forest East. The records are erratic, varying considerably from year to year. The most constant site is Knapp and Papermill which shows records every year since 1988. Monkwood had good numbers in the 1990s but none since. It would be worthwhile to start a transect on one of the urban brownfield sites to monitor numbers (John Tilt, *pers. comm.*).

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), the aim was to increase the number of Dingy Skipper sites monitored to 10 by 2009. This aim has already been achieved with 11 sites monitored during 2007 (Slater, 2008b).

Management - This species is still continuing to benefit from management work being carried out in many parts of the region. For example, the Shropshire Wildlife Trust regularly carries out scrub clearance on at least three reserves supporting the Dingy Skipper (Granville Country Park, Llanymynech Rocks and Llynclys Common). In Staffordshire, there is potential for habitat improvement at Apedale Country Park and habitat maintenance and recreation at Chatterley Whitfield. There are also a number of sites where recent survey for Dingy Skipper has located new colonies (e.g. in the Cannock Chase and Stoke-on-Trent areas). Elsewhere in the region some Dingy Skipper colonies are being retained by varying mowing regimes e.g. on the Wyre Forest pipeline, at Wigmore Rolls and at Saltwells (Preston, 2003). Habitat for the Dingy Skipper is also being created at Ryton Wood Meadows and Bubbenhall Meadows in Warwickshire (Mike Slater, *pers. comm.*) Experimental scrapes have been undertaken at the former Huntington Colliery site in Cannock.

Anchor Meadow became a very well known site for Dingy Skipper in the Walsall area when it was threatened by development. Communication between Butterfly Conservation, the developer and Walsall Council, resulted in at least half of the site being saved with the offer of additional land being made available from both Walsall Council and the adjacent health centre (Southwell & Jackson, 2000).

The maintenance of corridors and links between known sites is thought to be particularly important in urban areas which still support Dingy Skipper as they reduce the degree of isolation (e.g. Jackson, 2004). For example, the maintenance of the linear open space corridor between Baggeridge Brick through Saltwells to the Stour Valley and along towards Hawne Colliery is likely to be crucial in maintaining Dingy Skipper in this area in the long term.

Policy - There is now an Action Plan for Dingy Skipper within the Birmingham and the Black Country Biodiversity Action Plan, the Shropshire Biodiversity Action Plan, and the Warwickshire Biodiversity Action Plan.

A "Brownfield Sites" dossier was recently compiled by West Midlands Butterfly Conservation (Ellis, 2006) to help to draw up an 'alert list' of the most important and threatened brownfield sites in the region. This dossier is currently being used to try to improve the level of protection of the most threatened sites as well as improving their management through Butterfly Conservation's Countdown 2010 Project.

Publicity - A National Action Plan for this species was completed in 2000 (Bourn, Jeffcoate & Warren, 2000). Other relevant publications include: a Brownfields for Butterflies leaflet (Ellis, Fox & Ellis, 2004), a regional leaflet on the Dingy Skipper (Ellis, Hearle & Wainwright, 2005), a Dingy Skipper factsheet (Wainwright & Ellis, 2007), an article on finding Dingy Skipper eggs (Slater, 2008a) and a Warwickshire conservation update (Slater, 2008b).

Actions and Targets

Action	BC Targets	Possible Partner
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Dingy Skipper.	Ongoing	LAs, LBAP officers, FC, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Continue to encourage a landscape approach for the conservation of this species in key areas where it is still strong (e.g. in parts of Birmingham and the Black Country, Warwickshire, Shropshire and Staffordshire).	Ongoing	WMBP, NE, FC, Wildlife Trusts, County Councils, NT
3. Aim to improve existing breeding habitats in key areas by more appropriate management (e.g. by grazing and scrub management).	Ongoing	NE, County Councils, Local councils etc
4. Work closely with NE to take advantage of possible benefits for this species under the new ELS and HLS schemes.	Ongoing	NE, local volunteers, Wildlife Trusts, etc
5. Encourage survey work in counties where the current status of this species is still unclear (e.g. Staffordshire and Herefordshire).	By 2011	NE, LAs, Wildlife Trusts, local volunteers, FC etc
Research & Monitoring		
6. Continue to monitor colonies by transects and timed counts. Provide feedback to land managers.	Ongoing	NE, local volunteers
7. Increase level of monitoring to ensure that all sites receive at least one visit every 3 years.	By 2011	NE, local volunteers
8. Develop a better understanding of the ecological requirements of this species and the best management practices.	Ongoing	NE, other grant awarding bodies
Communication, Education and Publicity		
9. Increase awareness of the importance of this species in the region, how to record it and appropriate management by events, articles and press releases. Aim for at least one every three years.	By 2011	Local volunteers, NE, Warwickshire Museum, Wildlife Trusts
10. Continue to distribute copies of the "Brownfields for Butterflies"leaflet.	Ongoing	NE,, LAs, local volunteers, Wildlife Trusts
11. Continue to circulate the regional version of the 'Dingy Skipper' leaflet and the new Dingy Skipper factsheet and encourage their inclusion on regional web sites.	Ongoing	NE, LBAPs etc.

3.1.2 Grizzled Skipper - *Pyrgus malvae*

A species which can occur in a variety of habitats including woodland edges and sheltered hillsides where the larvae feed on a range of food plants such as wild strawberry (*Fragaria vesca*) and creeping cinquefoil (*Potentilla reptans*). For detailed information on the status, ecology and habitats of this species in Britain see national Species Action Plan (Brereton, Bourn & Warren, 1998).

Grizzled Skipper by Steven Cheshire

Distribution and Status in the West Midlands – Commonly associated with warm sheltered areas of grassland, disused railway lines, old quarries and south facing banks, the Grizzled Skipper is one of the most localised species within the region.

Birmingham & Black Country
Only recently recorded on one site.

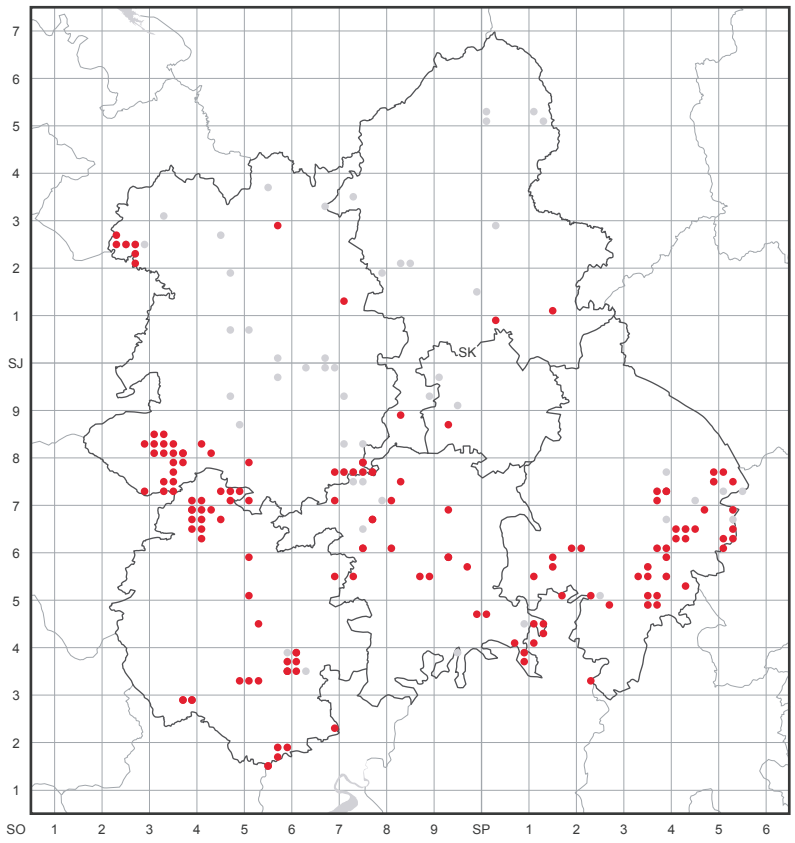
Herefordshire
Confined to a small number of sites.

Shropshire
A very local species. There are two key areas (Oswestry Hills and the Wyre Forest) where it is still present in reasonable numbers. A new colony was discovered in 2003 in south Shropshire miles from other known locations.

Staffordshire
Recorded on only one or two sites but it may be under-recorded.

Warwickshire
A conservation report on the status of the Grizzled Skipper was produced in 1998 (Slater, 1998). This report listed over 60 sites where the Grizzled Skipper had recently been seen (the majority being mid or late 1990's records) and identified the population size and the threats to each colony. From 2005-2007 most of these colonies and potential sites have been re-visited. Many colonies have been confirmed through egg searches and there are still 38 extant colonies remaining (Slater, 2008b).

Worcestershire
Very local in the county. Appears to be now restricted to Honeybourne , Throckmorton , and Hipton Hill in the Lenches. Active management for the species is being done at the latter two sites. Further surveying of the area around Hipton Hill may be worthwhile e.g. Craycombe Hill which is on limestone and has plenty of interesting old records (Trevor Bucknall, *pers. comm*.).



Threats
- Lack of appropriate management (e.g. scrub control, grazing) leading to a deterioration of habitat.
- Overgrazing (but can be maintained by rabbit damage on some sites).
- Tightening of sward and loss of bare ground.
- Re-opening of disused railway lines.

Survey - A general study of the Grizzled Skipper in the West Midlands region was carried out in 1999 (Barker, 1999). As part of this 1999 study, 10 specific sites were visited to gain information on habitat structure, the status of larval food plants and management. Barker's summary conclusions and recommendations were as follows:

a) factors leading to the decline of the Grizzled Skipper are i) Loss/fragmentation of early successional habitat, usually due to the difficulties of managing small, isolated patches, and ii) the consequent break down of metapopulation structure and thus high vulnerability to local extinction.

b) factors responsible for populations holding their own or expanding are i) abundance of early successional habitat supporting food plants suitable for egg-laying, ii) habitat structure at a landscape scale allowing formation of metapopulation, iii) suitable habitat maintained by proactive management which forms part of forestry/agricultural maintenance operations (as in the Wyre Forest), and iv) suitable habitat maintained by rabbit grazing and/or the thinness of the substrate.

On the Shropshire/Montgomeryshire border, the Grizzled Skipper was recorded on four sites in the Oswestry Uplands during 2000 (Boardman, 2000). In 2005 the IMI compound in the Wyre Forest was

targeted for survey by the Wyre Forest Study Group with the management brief due for completion in March 2008.

In Warwickshire the aim was to resurvey all known and potential sites for Grizzled Skipper between 2006 and 2009. So far 71 out of these 74 sites have been surveyed (Slater, 2008b).

Monitoring - In the West Midlands Branch area six transects currently record Grizzled Skipper. The longest running monitoring transect is from Honeybourne in Worcestershire where the numbers have been dropping over the last few years. The transect area was extended last year and showed that the core area of the colony had moved north to the "railway triangle" (SP1270:4447) where good numbers were found. New colonies were also found in Worcestershire at Hipton Hill orchard and at Throckmorton Waste Disposal site. The owner of both these sites has been contacted and work is being done by volunteers to help improve the habitat for this species. Monitoring will continue on these sites.

Some timed counts have been carried out in the Oswestry Uplands area (by the Shropshire Wildlife Trust (Lewis, 2003, 2004) and by contractors working for Butterfly Conservation's Countdown 2010 Project (Boardman, 2006). In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), the aim was to increase the number of Grizzled Skipper sites monitored to 10 by 2009. This aim has already nearly been achieved with 9 colonies monitored in 2007 (Slater, 2008b).

Grizzled Skipper by Debbie Hibbitt

Management - A management plan was drawn up for Wolfhampcote Embankment and Nethercote Cutting in Warwickshire in 2004 (Parr, 2004a). Following liaison between volunteers and Severn Trent Water wardens, a management plan was drawn up for a new site at Draycote Water in Warwickshire where the Grizzled Skipper was first recorded in 2002. Suitable habitat is also being created for this species in the Ryton Wood Meadows area of Warwickshire with habitat creation work now being carried out at Long Marston with support of St Modwen (Mike Slater, *pers. comm*.).

In Worcestershire, West Midlands branch volunteers have worked to improve habitat along the old Stratford to Cheltenham railway line south of Honeybourne (Trevor Bucknall, *pers. comm*.). In Shropshire, Grizzled Skipper benefitted from the management work carried out on Shropshire Wildlife Trust reserves in the Oswestry area over the 2004/05 winter as a result of the 'Working with Limestone' project. Grazing and scrub clearance work organised for Llynclys Quarry (as a result of an ALSF grant to Shropshire County Council) significantly increased the area of Grizzled Skipper habitat in 2006. Experimental habitat creation took place at Ryton Wood Meadows by creating a low dry stone wall with a subsequent search locating 40 eggs (Slater, 2007a).

Policy - There is now an Action Plan for Grizzled Skipper within the Herefordshire Biodiversity Action Plan, the Worcestershire Biodiversity Action Plan and the Shropshire Biodiversity Action Plan.

Publicity - A regional version of a leaflet on 'Grizzled Skipper' has been produced (Hearle & Ellis, 2004) and more recently a national species factsheet (McCracken & Hearle, 2007a). Article on how to locate Grizzled Skipper eggs (Slater, 2004a) produced to try to encourage recorders to determine where this species is breeding in addition to counting adults. A conservation update has recently been produced for this species in Warwickshire (see Slater, 2008b and above).

Actions and Targets

Action	BC Targets	Possible Partner
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Grizzled Skipper.	Ongoing	WMBP, LAs, LBAP officers,FC, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Continue to encourage a landscape approach for the conservation of this species in key areas where it is still strong (e.g. in Warwickshire, the Wyre Forest and the Oswestry Hills).	Ongoing	WMBP, NE, FC, Wildlife Trusts, County Councils, NT, AONB officers
3. Maintain the existing breeding habitats in key areas by appropriate management (e.g. by grazing and scrub management) and bring more sites into suitable management.	Ongoing	NE, FC, Wildlife Trusts, County Councils, NT, AONB officers
4. Work closely with NE to take advantage of possible benefits for this species under the new ELS and HLS schemes.	Ongoing	NE, local volunteers, Wildlife Trusts, etc
5. Continue to provide feedback to individual landowners to encourage them to improve or maintain habitat quality.	Ongoing	Local volunteers, NE, FC, County Councils
6. Encourage survey work in counties where the current status of this species is still unclear (e.g. Staffordshire and Herefordshire).	By 2011	NE, LAs, Wildlife Trusts, local volunteers, FC etc
Research & Monitoring		
7. Continue to monitor transects and collate results. Provide feedback to land managers.	Ongoing	NE, local volunteers
8. Aim to re-survey all known sites for Grizzled Skipper in the region.	By 2011	NE, local volunteers
9. Develop a better understanding of the ecological requirements of this species and the best management practices.	Ongoing	NE, other grant awarding bodies
Communication, Education and Publicity		
10. Increase awareness among the general public of the importance of this species in the region, how to record it and appropriate management by events, articles and press releases. Aim for at least 1 every three years.	Ongoing	Local volunteers, NE, Warwickshire, Museum, Wildlife Trusts
11. Continue to circulate the regional 'Grizzled Skipper' leaflet and species factsheet and look at ways of adding information to local LBAP web sites.	Ongoing	Local volunteers, LBAP officers, Wildlife Trusts etc.

3.1.3 Wood White - *Leptidea sinapis*

The Wood White is usually associated with woodland habitats where it breeds in open rides or clearings but also occurs on coastal cliffs and more open habitats. The most widely used larval food plants are meadow vetchling (*Lathyrus pratensis*), bitter vetch (*Lathyrus montanus*), bird's-foot trefoil (*Lotus corniculatus*) and greater birdsfoot trefoil (*Lotus pedunculatus*). For detailed information on the status, ecology and habitats of this species in Britain see the national Species Action Plan (Warren & Bourn, 1998).

A research project looking at the ecological requirements of the Wood White in Shropshire was undertaken as part of Butterfly Conservation's Countdown 2010 Project (Clarke & Green, 2008a).

Male Wood White by Patrick Clement

Distribution and Status in the West Midlands - This species appears to currently be expanding its range in some parts of the region (particularly in Shropshire and Herefordshire) while declining in others (e.g. Worcestershire).

Birmingham & Black Country

Only recently recorded on one site.

Herefordshire

Still quite widespread in the county with strong populations on several sites e.g. Haugh Wood and Wigmore Rolls.

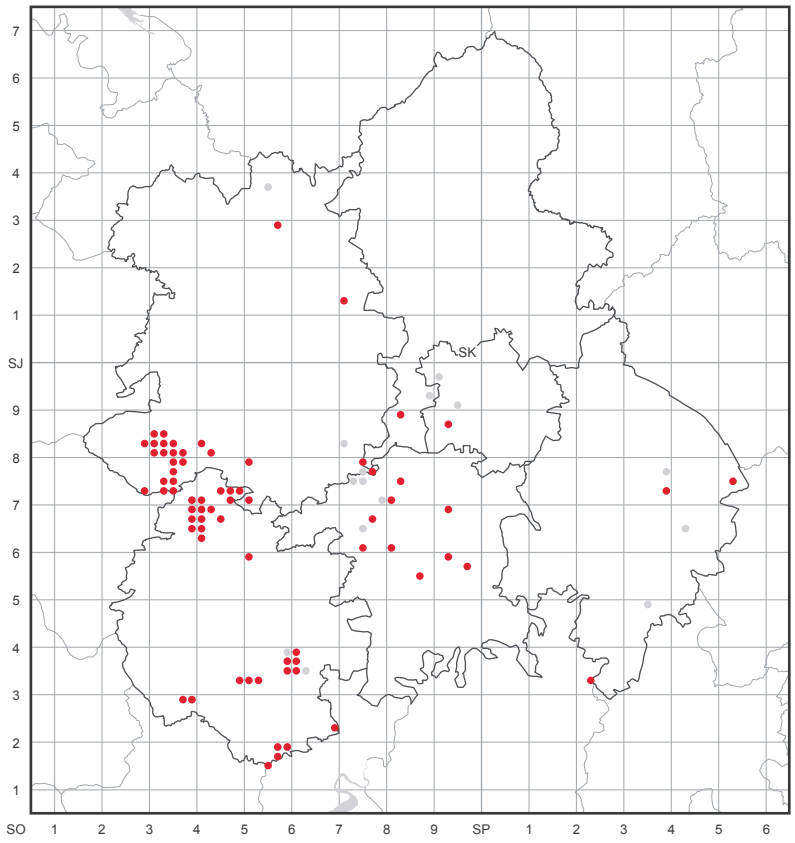
Shropshire

Known to be resident on at least five sites in south Shropshire with Bury Ditches probably still supporting the largest colony. It would not be surprising to find Wood Whites turning up on further sites in south Shropshire in future years as the adults appear to be capable of travelling long distances, and the Wood White is known to have recently colonised some new sites e.g. Purslow Wood and the Mortimer Forest (Jenny Joy, *pers. comm.*)

Staffordshire
There are recent records originating from the Postensplain section of Staffordshire which falls within the VC 39 portion of Wyre Forest.

Warwickshire
In the West Midlands Regional Action Plan of 1997, the Wood White was reported as having become extinct in Warwickshire in 1986. The millennium atlas survey proved this to be incorrect with a very strong colony being found at Wolford Wood. In addition following a series of intermittent sightings of the Wood White at Ryton Wood during the late 80s and 90s, the Wood White appears to have become established (see e.g. Slater, 2003a, 2005c). The Wood White has been recorded at Ryton Wood for the last eight successive years (2000-2007) but numbers have crashed since 2005 (Slater, 2008b).

Worcestershire
Most remaining colonies are in the west and are small. Around 30 adults were seen at Shavers End Quarry in Worcestershire on two occasions in 1998 with most open fragments of the adjoining Ramscombe Coppice also supporting good numbers of this species (Trevor Bucknall, *pers. comm*.). As Wood White have also recently been recorded on two other nearby sites (Abberley Hill and south-west of Walsgrove Hill), this area of Worcestershire must now be considered to be important for this species. In Shavers End Quarry, Wood White eggs have been found on greater bird's-foot trefoil (Trevor Bucknall, *pers. comm*.). Elsewhere in Worcestershire, the only other population is at Monkwood where numbers have shown a considerable decline in recent years.



Threats
- Changes in woodland management leading to increased shadiness.
- Changes in ride mowing regimes.
- Small size and isolation of many colonies.

Survey - Sites in Shropshire and Herefordshire have been recently surveyed for this species (Joy, 2000a, Boardman, 2003a, Lovelace, 2007) and a research project was carried out in Shropshire in 2007 (Clarke & Green, 2008a, Grundy, 2008) where some of the summary findings were as follows: 'At both Bury Ditches and the Wyre Forest site, Greater Birds-foot-trefoil *Lotus pedunculatus* was found to be the most frequently used foodplant on which eggs were laid. At Bury Ditches, Birds-foot trefoil *Lotus corniculatus* was also well used with two eggs found on Common Vetch *Vicia sativa* and no eggs on Bitter vetch *Lathyrus linifolius*. At Wyre Forest there were no eggs on Birds-foot-trefoil or Common Vetch, but two eggs were found on Bitter vetch. Some 32.5% of eggs were laid on plants that contained other Wood White eggs and eggs are always laid towards the top of the foodplants. Eggs are typically laid close to the ride edge: 13% of first brood and 30% of the second brood eggs laid were laid within 50 cm of the ride edge'.

In Warwickshire, the aim was to resurvey all known and potential sites for Wood White between 2006 and 2009. This target has already been achieved with all 10 sites being surveyed by 2007 (Slater, 2008b).

Monitoring - In the West Midlands branch area there are 3 main sites where historical transect data is available: Wigmore Rolls, Haugh Wood and Monkwood. The first 2 sites have good steady populations but the Monkwood population is declining. Monitoring will continue. Three new transects were set up in key sites in south Shropshire in 2007 with help from the Forestry Commission (Alan Reid). Another new transect was also set up at the Wyre Forest through the Back to Orange Project.

Wood Whites courtship behaviour by Dave Grundy

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), the aim was to increase the number of Wood White colonies monitored to 2 by 2009. One site was monitored in 2007 with the aim being to recommence monitoring at Wolford Wood (Slater, 2008b). On the one monitored site (Ryton Wood), numbered have crashed since 2005 and the management has now been changed to assist this species.

Management - Specific ride management has been carried out by FC at Wigmore Rolls, in Herefordshire, at Bury Ditches, Radnor Wood and Purslow Wood in Shropshire, and at the Wyre Forest (in 2007 and 2008 through the Back to Orange Project). This species has also benefited from more general ride edge management at Haugh Wood. In Worcestershire, urgent management work has been initiated at Monkwood (winter 2007/08) to try to arrest the recent decline there (Mike Williams, *pers. comm*.).

Policy - There is now an Action Plan for Wood White within the Herefordshire Biodiversity Action Plan, the Worcestershire Biodiversity Action Plan, the Shropshire Biodiversity Action Plan and the Warwickshire Biodiversity Action Plan.

Publicity - A species factsheet on the Wood White has recently been produced (McCracken & Warren, 2007).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Wood White.	Ongoing	WMBP, LAs, FC, Wildlife Trusts, NE etc.
Site Species Safeguard & Management		
2. Encourage a landscape approach for the conservation of this species in the region.	Ongoing	WMBP, NE, FC, Wildlife Trusts, WT, LAs, private landowners, etc.
3. Undertake liaison with landowners in key areas to encourage management which extends existing breeding areas .	Ongoing	FC, NE, Wildlife Trusts etc
4. Aim to increase the population size and the number of colonies in each key area.	By 2011	FC, NE, Wildlife Trusts, LAs etc.
Research & Monitoring		
5. Continue to monitor existing transects and collate results. Provide feedback to land managers.	Ongoing	Local volunteers, FC, NE
6. Try to increase the level of monitoring so that all populations are covered by at least a spot check or timed count at least once every three years.	By 2011	FC, NE, local volunteers
7. Support research aimed at identifying the best management practices for this butterfly in the region and disseminate this knowledge.	By 2011	FC, NE, Grant awarding bodies
Communication, Education & Publicity		
8. Raise awareness of the importance of the West Midlands region for the Wood White encourage the factsheet inclusion on regional web sites. Aim to produce at least one press release every three years.	By 2011	Wildlife Trusts, NE, FC

3.1.4 Brown Hairstreak - *Thecla betulae*

A species which primarily occurs in wooded areas which have sheltered hedges or banks and where the larval food plant blackthorn *Prunus spinosa* is abundant. For detailed information on the status, ecology and habitats of this species in Britain see National Species Action Plan (Bourn & Warren, 1998).

Distribution and Status in the West Midlands - This species is confined to the former Forest of Feckenham in east Worcestershire, where its continued presence is dependent on the hedgerow practices of local landowners and good woodland management.

Flailed hedgerows by Mike Williams

Birmingham & Black Country
Have never been any reliable records.

Herefordshire
Extinct (1899).

Shropshire
Extinct (around 1900).

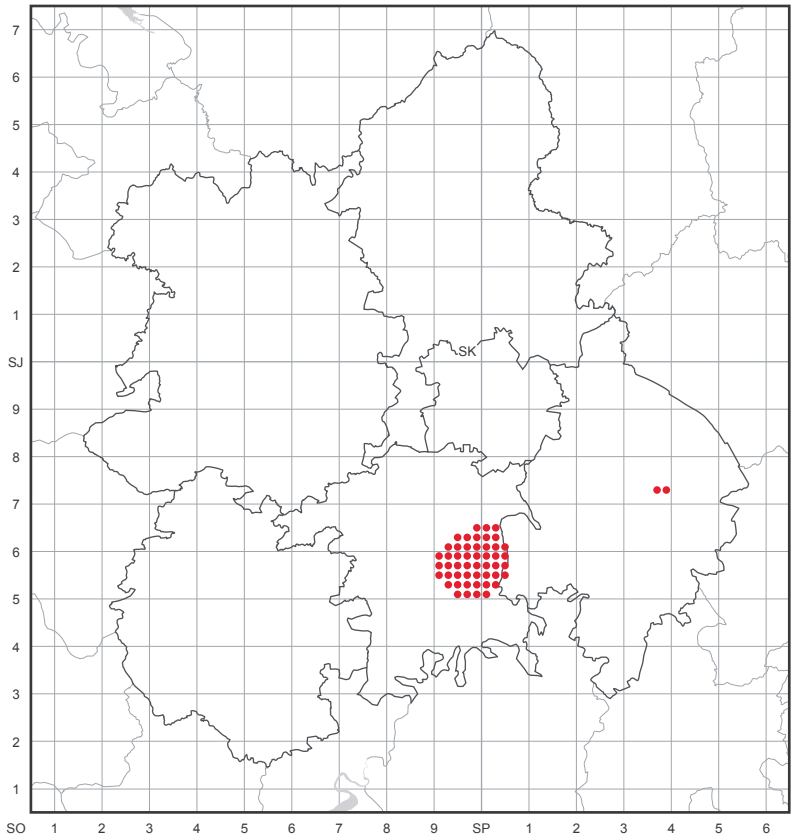
Staffordshire
Have never been any reliable records.

Warwickshire
Evidence of recently colonisation from Worcestershire. Further work is required near the county boundary to establish the extent of this. Eggs of unknown origin (possibly stemming from an unauthorised release) have been found in the Princethorpe area in 2 of the last 4 years and this may indicate that a very small colony persists here (Slater, 2008b).

Worcestershire
Intensive survey work has continued mainly through winter searching of blackthorn hedgerows and scrub for ova. Eggs have currently been recorded in 147 one kilometre squares. Management work has continued in and around Grafton Wood and other woodlands and attempts have been made with some success to encourage farmers into stewardship schemes. The population of the butterfly has expanded in recent years but trying to ensure appropriate rotational cutting of hedgerows remains a major challenge (Williams, 2008).

Brown Hairstreak Ova by Steven Cheshire

Brown Hairstreak Larvae by Mike Williams



Threats
- Inappropriate hedgerow management.
- Lack of woodland management

Survey - Egg counts carried out in recent winters show that the population range in the Worcestershire area is expanding but still very geographically limited to the Forest of Feckenham area. Egg distribution in the Grafton Wood area has been mapped using Geographic Information Systems (GIS) to facilitate integration of management requirements into Countryside Stewardship Agreements (Jane Ellis, pers. comm.). Four former Warwickshire sites for Brown Hairstreak were searched for eggs several years ago but none were found (Mike Slater, pers. comm.).

Monitoring - Annual winter egg counts have taken place in the Grafton Wood area since 1970. These show that the species responds well to rotational cutting of blackthorn hedges and scrub, with egg numbers generally peaking 1-2 years after cutting, and the preference of females for laying eggs on low growing suckers at the base of the hedge (Mike Williams, pers.comm.). Transect results from the one site also monitored by adult counts in the Grafton Wood area indicate that numbers here are relatively stable.

Management - Encouraging farmers into Countryside Stewardship has been successful with at least six more local farms now in schemes to benefit Brown Hairstreak and over 50 farmers attending a FWAG/NE event early in 2004 (Bucknall, 2004). A system has also been agreed for NE to ask for Butterfly Conservation input into forthcoming ELS agreements (and in the future HLS agreements) in the core area. A number of local woodlands are being specifically managed for Brown Hairstreak and favourable conditions are also being maintained on several local nature reserves. Contact with the Highways Agency and their local contractor Amey Mouchel has led to specific management for the Brown Hairstreak being carried out on the verge of the M5 motorway.

Policy - There is now an Action Plan for Brown Hairstreak within the Worcestershire Biodiversity Action Plan.

Female Brown Hairstreak by Steven Cheshire

Publicity - the 'Hedgerows for Hairstreaks' leaflet has been reprinted (Butterfly Conservation, Wareham 2004). A number of articles about the Brown Hairstreak were published in local newspapers in 2003/2004 with the DEFRA/FWAG event in winter 2004 also being well covered by the media (Bucknall, 2004). An article on the history of the Brown Hairstreak in Worcs has also appeared in the Worcestershire Record (Williams, 2006). A regular email newsletter is produced and widely circulated.

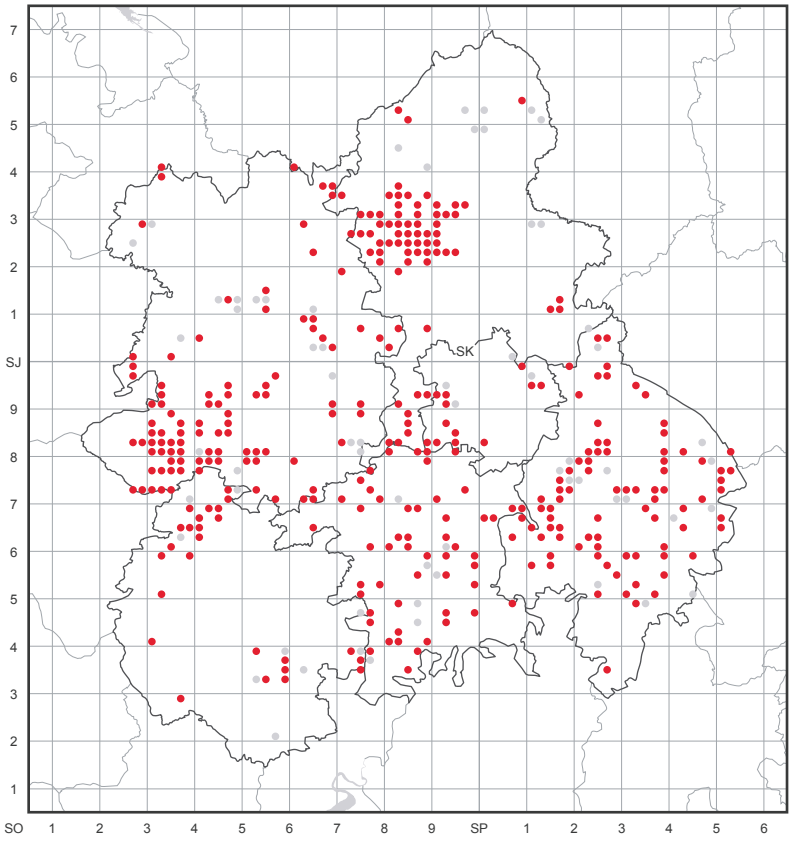
Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Brown Hairstreak.	Ongoing	WMBP, LAs, FC, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Continue to encourage a landscape approach for the protection of the Worcestershire population and seek further opportunities for habitat expansion.	Ongoing	NE, FC, Wildlife Trusts, County Councils, NT.
3. Improve overall management around the keys area through ELS and HLS. Better monitor the impact of stewardship schemes on hedgerow management and seek improvements to the scheme.	Ongoing	NE
Research & Monitoring		
4. Continue to monitor core Worcestershire population by annual winter egg counts. Search wider area for evidence of breeding in order to build up a complete picture of the geographical range of the butterfly in the county. Undertake targeted searches of potential sites for new colonisation e.g. M5 corridor. Provide feedback to land managers and NE.	Ongoing	Local volunteers
Communication, Education and Publicity		
5. Continue to target individual landowners with specific proposals for improved hedgerow management within key breeding area of Worcestershire.	Ongoing	Local volunteers, NE, FWAG
6. Continue to circulate 'Hedgerows for Hairstreaks' leaflet and species factsheet to landowners, locally and nationally, interested in introducing specific management for this species and encourage their inclusion on regional web sites.	Ongoing	NE, FWAG, LAs, Wildlife Trusts, LBAP officers
7. Increase awareness among the general public of the importance of the region for Brown Hairstreak and how to record it by events, articles, displays, newsletters and press releases (aim for at least 1 every three years).	By 2011	Local volunteers, Wildlife Trusts etc.

Brown Hairstreak by Debbie Hibbitt

3.1.5 White-letter Hairstreak - *Strymonidia w-album*

A widely distributed species whose larvae feed on elm (*Ulmus spp.*). The number of British colonies was severely reduced in the 1970s and early 1980s by Dutch Elm disease which killed off many trees known to support this species (Asher *et al.*, 2001). In 2007 it became a UK BAP Priority Species due to declines which were estimated to be >50% decline in the UK over the last 25 years.



Distribution and Status in the West Midlands - This species was previously thought to be under-recorded and more widespread than distribution maps indicate. A national survey for this species is currently underway (White-letter Hairstreak Project 2007-2009, Hertfordshire & Middlesex Branch of Butterfly Conservation www.w-album.hertsmiddx-butterflies.org.uk) and is producing many new records for the region.

Birmingham & Black Country
Appears to be becoming more widespread.

Herefordshire
Widespread records especially round the edge of the county.

Shropshire
Widely distributed especially in the south of the county (although this may be reflection of recording effort).

Staffordshire
Recent records are largely clustered in the north-west of the county.

Warwickshire
Recent survey work indicates that the White-letter Hairstreak still occurs in every 10 kilometre square of the Warwickshire recording area. (Slater, 2007).

Larva and feeding damage on Elm by Steven Cheshire

White-letter Hairstreak by Steven Cheshire

Worcestershire
Appears to be becoming more widespread.

Threats
• Dutch Elm disease and destruction of hedgerow elm trees.
• Hedge maintenance (simultaneous layering of all elm suckers).
• Reluctance on the part of landscape architects and landowners to include Elm sp. in new planting schemes.

Survey - Egg searches are a really good way of finding this species with many new Shropshire sites discovered in 2007 using this method (Rob Thorne, *pers. comm.*).

Monitoring - In 2007 there were only 2 sites where this species was recorded on transects in the West Midlands Branch area - at Haugh Wood South and the Old Hills Malvern. Haugh Wood has shown a steady decline over the last 20 years, although it is recognised that adult counts are not the best way of monitoring this species. These transects will continue in 2008. Tiddesley Wood (WWT reserve) has a large elm coppice which will be surveyed this year - there are old records in this area. Special evening hairstreak monitoring at Ryton Wood since 1990 show an increase in numbers in recent years (Mike Slater, *pers. comm.*).

Management - A small number of sites in the region now support disease resistant varieties of elm (e.g Haugh Wood in Herefordshire and Hampton Wood in Warwickshire). A number of elm trees (approximately 250 non-disease resistant) have also been planted at Ryton Wood and Ryton Wood Meadows to allow future coppicing on rotation (Mike Slater, *pers. comm.*).

Publicity - A species factsheet for the White-letter Hairstreak has just been produced (Ellis & Wainwright, 2007a).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote species such as the White-letter Hairstreak.	By 2011	WMBP, LAs, Wildlife Trusts, NE etc
Site/Species Safeguard and Management		
2. Continue to undertake liaison with land managers and encourage planting of Wych Elm and the coppicing of diseased Elm.	Ongoing	NE, FC, WT, NT, Wildlife Trusts, LAs etc.
3. Look for opportunities to encourage the planting of elm e.g. along roadsides and in development schemes.	By 2011	LAs, Developers, local volunteers
Research and Monitoring		
4. Continue to monitor (e.g. on existing transects, by timed counts or by egg or larval searches) and collate results. Provide feedback to land managers.	Ongoing	Local volunteers, LAs etc
5. Increase the level of monitoring to ensure that each colony/site is visited at least once every three years	By 2011	Local volunteers, LAs etc
Communication, Education & Publicity		
6. Increase general awareness of this species by events, articles and press releases (aim for 1 every five years).	By 2011	Local volunteers, FC, WT, Wildlife Trusts etc.

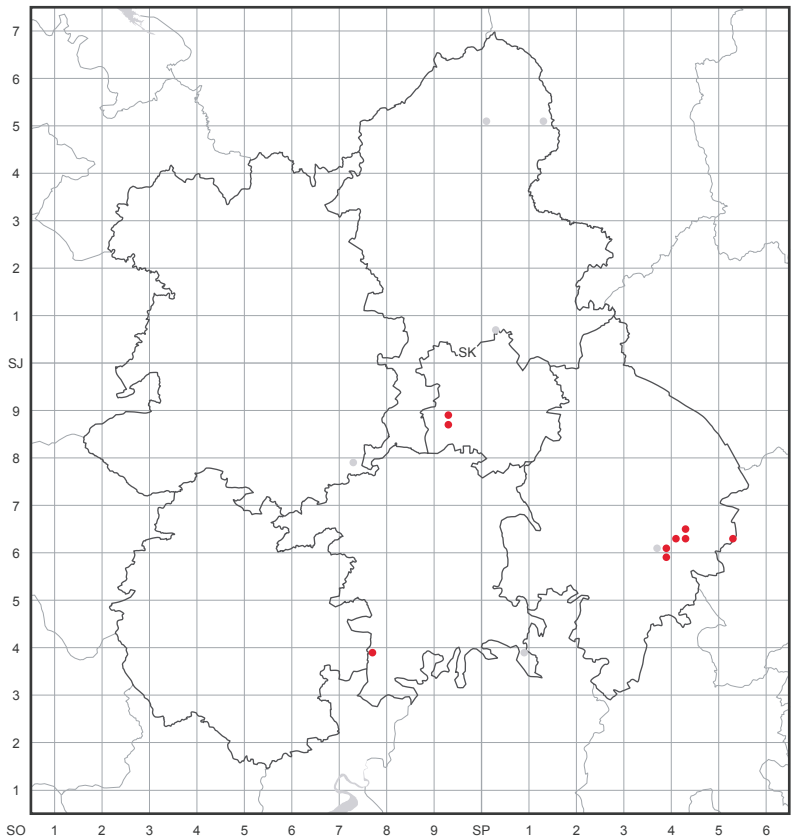
3.1.6 Small Blue - *Cupido minimus*

A species which occupies a wide range of habitats in Britain including abandoned chalk and limestone quarries, railway and road cuttings and coastal sites. It occurs where the larval food plant kidney vetch (*Anthyllis vulneraria*) grows in warm sheltered conditions with areas of tall sheltered grass or scrub being important for perching or roosting. It can be transiently common on patches of disturbed ground. A national Species Action Plan for this species was completed in 2000 (Bourn & Warren, 2000).

Distribution and Status in the West Midlands - A species which has recently undergone declines in the region and is currently only thought to be extant in Warwickshire.

At the time of Millennium Atlas survey, Warwickshire had 5 known Small Blue colonies. The colonies at Harbury Spoilbank and Ufton Fields nature reserves have both become extinct whilst remaining sites are under threat to some degree. The two colonies at Bishops Itchington and Southam Quarry are large. As there are now two colonies at Bishops Bowl (with a satellite colony being formed around the fishing lakes) there are now considered to be 4 Small Blue colonies in Warwickshire (Slater, 2008b).

Small Blue by Jim Asher



Birmingham and Black Country
A couple of records between 1995 and 2002*.

Herefordshire
Extinct 1911

Shropshire
Probably extinct. No recent sightings.

Staffordshire
No records between 1995 and 2003.

Warwickshire
Now 4 colonies.

Worcestershire
Extinct.

* The validity of these records is unclear.

Small Blue by Keith Warmington

Threats

- Agricultural improvement.
- Decline in habitat quality.
- Vulnerability to undergrazing and overgrazing, particularly sheep grazing during summer.
- Droughts.
- Residential and leisure development.
- Lack of appropriate grassland management.
- Increase in rabbit numbers.

Survey - Egg counts undertaken at former Warwickshire sites in June 2003 were unsuccessful (see Slater, 2005b). Many additional sites have recently been surveyed in the Southam area to determine if they could be a potential site for the Small Blue and to estimate the extent of habitat present (Slater, 2008b). Further survey work is planned for the Broadway area of Worcestershire where the butterfly formerly occurred.

Monitoring - Timed counts species transects established at all four extant sites and three potential sites (Stockton Cutting Nelsons Quarry and Southam Bypass North). On all 7 sites kidney vetch flowering heads are monitored annually (Mike Slater, *pers. comm.*).

Management - There is huge scope for increased management work for this species in Warwickshire which could include habitat creation (e.g. in the Southam Quarry area), increased connectivity (e.g. linking Southam and Stockton Quarries and making use of other potential habitat opportunities e.g. along the Southam Bypass and M40). In this context a total of 200 kidney vetch plants were recently planted at Southam Bypass North and a further 750 at Stockton (Mike Slater, *pers. comm.*). Four acres

of land at Stockton Cutting were cleared of scrub in 2008 with funding from the Cemex. In 2008 a project application was submitted for a landscape scale project to restore habitat for Small Blue on 12 sites in the Southam Lias grasslands area of Warwickshire.

Policy - There is now an Action Plan for Small Blue within the Warwickshire Biodiversity Action Plan.

A "Brownfield Sites" dossier was recently compiled (Ellis, 2006) to help to draw up an 'alert list' of the most important and threatened brownfield sites in the region. This dossier is now being used to try to improve the level of protection of the most threatened sites as well as improving their management.

Publicity - a "Brownfields for Butterflies"leaflet was produced by Butterfly Conservation in 2004 (Ellis, Fox & Ellis, 2004). A species factsheet on the Small Blue has recently been completed (McCracken & Hearle, 2007b).

Actions and Targets

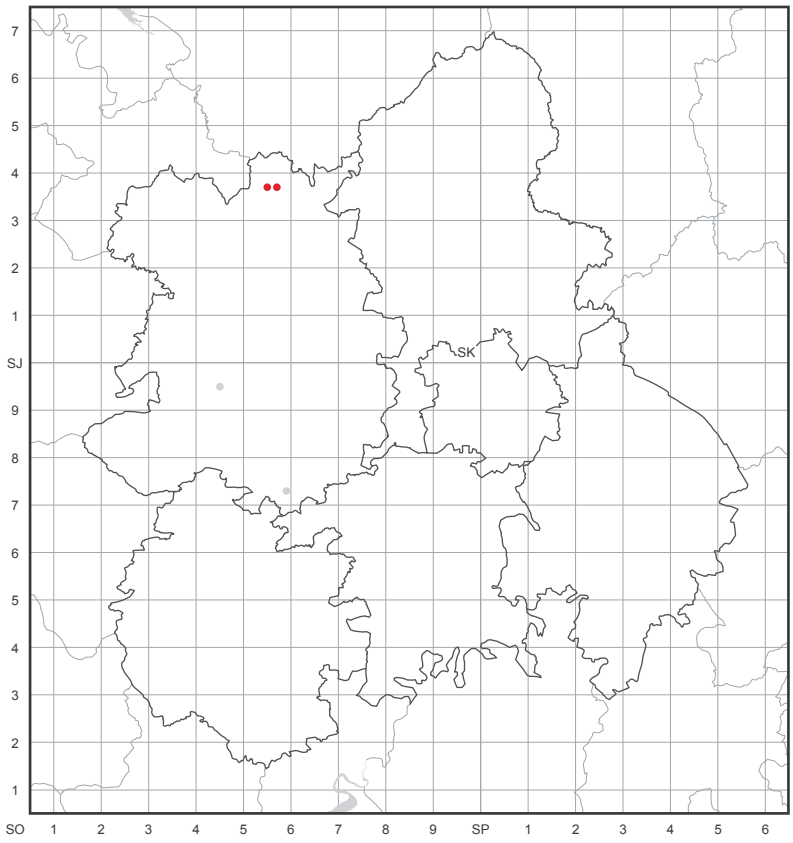
Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Small Blue	Ongoing	WMBP, Warwickshire Wildlife Trusts, Warwickshire Museum NE, LAs etc
Site/Species Safeguard & Management		
2. Adopt a landscape approach for the conservation of the Small Blue in Warwickshire. Aim to improve the breeding habitats in occupied areas by more appropriate management and bring at least three additional sites into suitable management.	Ongoing	Warwickshire Wildlife Trust, Warwickshire Museum, NE, Cemex, LAs.
3. Liaise with landowners to ensure that appropriate management is carried out at sites where Small Blue colonies could be established. Target Nelsons Quarry, Stockton Quarry, Disused railway Long Itchington, Southam Bypass (2 sections), Harbury Spoilbank (2 sites), land near Stockton Tip and Ufton Fields.	Ongoing	Warwickshire Wildlife Trust, Warwickshire Museum, NE, Cemex, LAs.
4. Increase the number of colonies in Warwickshire to 7.	By 2011	Local volunteers, Warwickshire Wildlife Trust, NE, Cemex.
Research & Monitoring		
5. Survey the 3 kilometres area surrounding known colonies for other potentially suitable habitat. Resurvey old sites in the Broadway area of Worcestershire.	By 2011	Local volunteers, Warwickshire Wildlife Trust etc.
6. Continue to monitor all 4 known colonies by at species transects or timed counts. Provide feedback to land managers.	Ongoing	Local volunteers, Warwickshire Wildlife Trust etc.
Communication, Education & Publicity		
7. Increase awareness among the general public of the importance of Warwickshire for the Small Blue by events, articles and press releases (aim for at least 1 every three years).	By 2011	Warwickshire Wildlife Trust, Warwickshire Museum, NE, Cemex, LAs.
8. Circulate the brownfields leaflet and Small Blue factsheet to landowners and managers and encourage their inclusion on regional web sites.	Ongoing	NE, Warwickshire Wildlife Trust, Warwickshire Museum

3.1.7 Silver-studded Blue - *Plebejus argus*

A species which occurs in a variety of habitats in Britain including lowland acid heathland (dry and wet), coastal systems and lowland mosses where the larvae feed on a range of plants including heathers (*Calluna vulgaris*) and bird's-foot trefoil (*Lotus corniculatus*). For detailed information on the status, ecology and habitats of this species in Britain see national Species Action Plan (Ravenscroft & Warren, 1996).

Silver-studded Blue by Mark Eccleston

Distribution and Status in the West Midlands - Present only on one site in Shropshire (Prees Heath Common) where it is still present in large numbers. Butterfly Conservation successfully concluded negotiations to purchase part of the Prees Heath Common site in 2006.



Birmingham and Black Country
Never recorded.

Herefordshire
Extinct 1908.

Staffordshire
Never recorded.

Warwickshire
Extinct 1928/29 (Packington)

Worcestershire
Never recorded

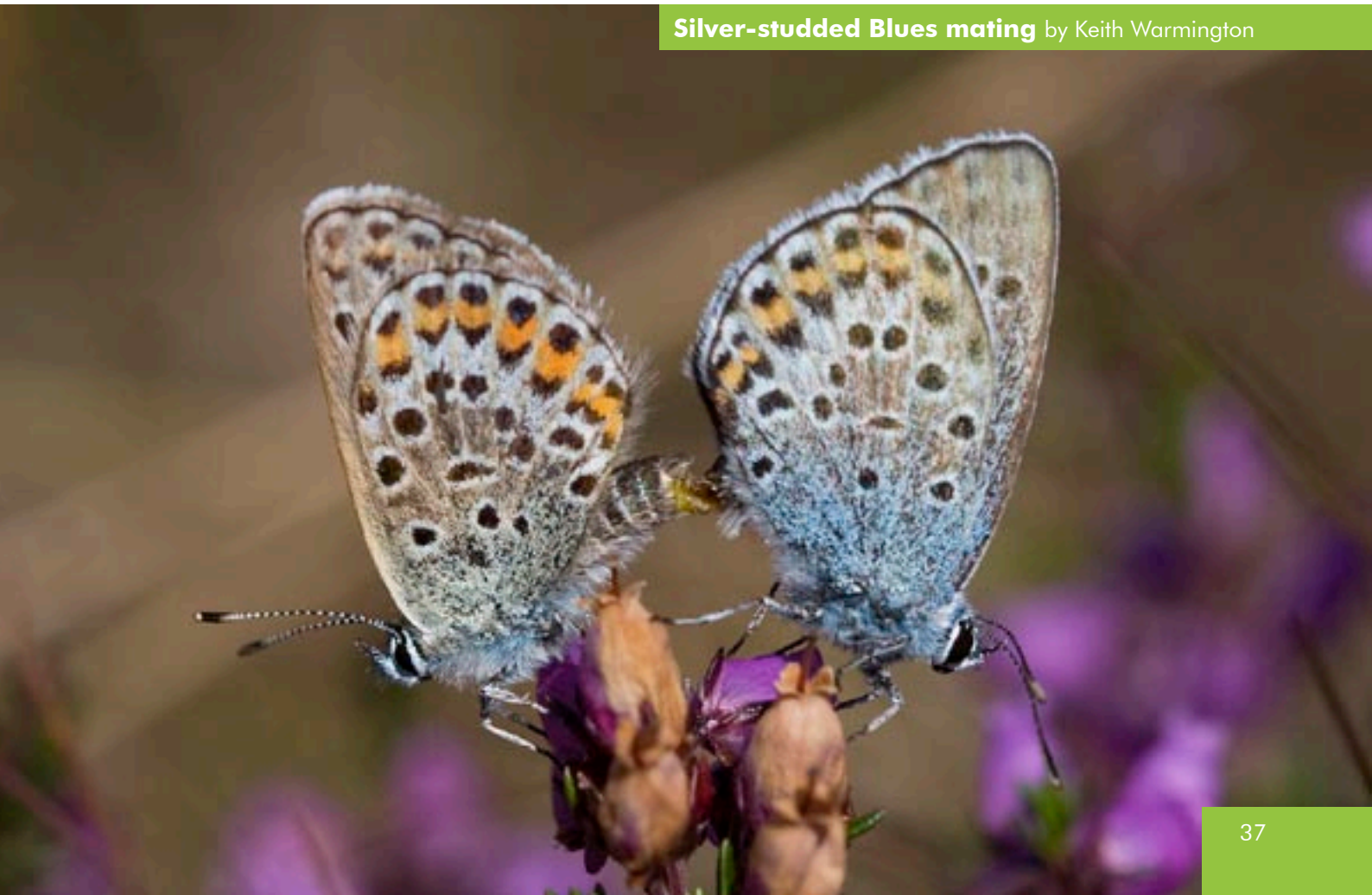
Threats
• Future sand and gravel extraction in the vicinity of the reserve

Survey - This butterfly was recorded at nearby Brown Moss several years ago but this record has never been confirmed. The heathland adjacent to the large shed by the airfield across the A41 was searched for eggs in 2007 and found to support a small colony (Stephen Lewis, *pers. comm.*).

The introduction of 82 adults from Prees Heath Common to Thurstaston Common on the Wirral initially appeared to have been successful (Hinde, 1992, 1994, 1995), with numbers increasing in the two subsequent seasons. However, several outbreaks of Heather Beetle (*Lochmaea suturalis*) which results in a reduction in the quantity and quality of *Calluna vulgaris* during the following season, are thought to have been responsible for near-extinction of this colony by 2004 (Hinde, 2002, 2003, 2004).

Monitoring - A peak flight transect has been undertaken annually since 2001 (e.g. Joy, 2001b, 2002b, 2003a) which has sections on Prees Heath and on the adjacent Intervention Grain Store compound. A full transect at Prees Heath is currently being considered as it is one of Butterfly Conservation's largest reserves.

Management - Part of Prees Heath Common is now a Butterfly Conservation reserve which is being managed as a result of a four year funding package from GrantScape. It is registered common land, open access land, a SSSI and has a 'blanket' tree preservation order in place, and all site management has to be carried out within these constraints. In addition, much of the common has been in intensive agriculture in recent years and recreating a heathland habitat suitable for the Silver-studded Blue in these areas is a challenging project. In the past, the Intervention Store has been



Silver-studded Blues mating by Keith Warmington

responsible for the management of the adjacent compound (as a result of liaison with NE and BC). All the stores are currently on the market and in due course NE will have to negotiate a new management agreement with whoever purchases the land.

Policy - There is now an Action Plan for Silver-studded Blue within the Shropshire Biodiversity Action Plan.

Publicity - A Silver-studded Blue factsheet has recently been produced (Warren & Wigglesworth, 2007) and the booklet on heathland management for the Silver-studded Blue is in the process of being updated (Nigel Bourn, *pers. comm.*). A Prees Heath Common Reserve leaflet was also produced by Butterfly Conservation in 2007 (Lewis, 2007).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Silver-studded Blue.	Ongoing	Shropshire County Council, North Shropshire District Council, SWT, NE
Site/Species Safeguard & Management		
2. Continue to ensure that the management plan for the SSSI is carried out within the Intervention Grain Store area and on the heath and maintain close liaison with Grain Store managers.	Ongoing	Intervention Grain Store managers, NE
3. Maintain the Silver-studded Blue colony on the site by carrying out appropriate management.	Ongoing	NE, North Shropshire District Council, Volunteers
4. Look for opportunities to double the area of suitable habitat (from 3ha to 6ha) both within the Butterfly Conservation reserve area and elsewhere.	Ongoing	NE, Local District Council, Shropshire County Council, SWT, GrantScape, Prees Heath Commoners, Ecological Restoration Consultants
Research & Monitoring		
5. Continue to monitor abundance by peak transect count. Provide feedback to land managers.	Ongoing	NE, Intervention Grain Store Managers
6. Increase level of monitoring to a full transect during the Silver-studded Blue flight period).	By 2008	NE, Shropshire County Council, Local volunteers.
7. Produce research paper on the restoration of lowland heath habitat for the Silver-studded Blue.	By 2011	SWT, Shropshire County Council, NE, Ecological Restoration Consultants
Communication, Education & Publicity		
8. Produce 20 press releases so that the local people continue to be aware of progress made and the work planned.	By 2010	NE, SWT
9. Produce newsletter, reserve leaflet, on-site panels and other publicity material and encourage inclusion on local web pages.	Ongoing	
10. Arrange a number of events and guided walks open to the public on the reserve each year.	Ongoing	SWT

3.1.8 White Admiral - *Ladoga camilla*

A species which occurs in woods and is common in the south of England. The only larval food plant is honeysuckle (*Lonicera periclymenum*) which must occur in relatively shady woodland (Asher et al., 2001).

White Admiral by Keith Warmington

Distribution and Status in the West Midlands – A butterfly on the edge of its range in the region is fairly widespread in Worcestershire and Warwickshire but much more restricted elsewhere. However, there may be many small colonies yet to be discovered.

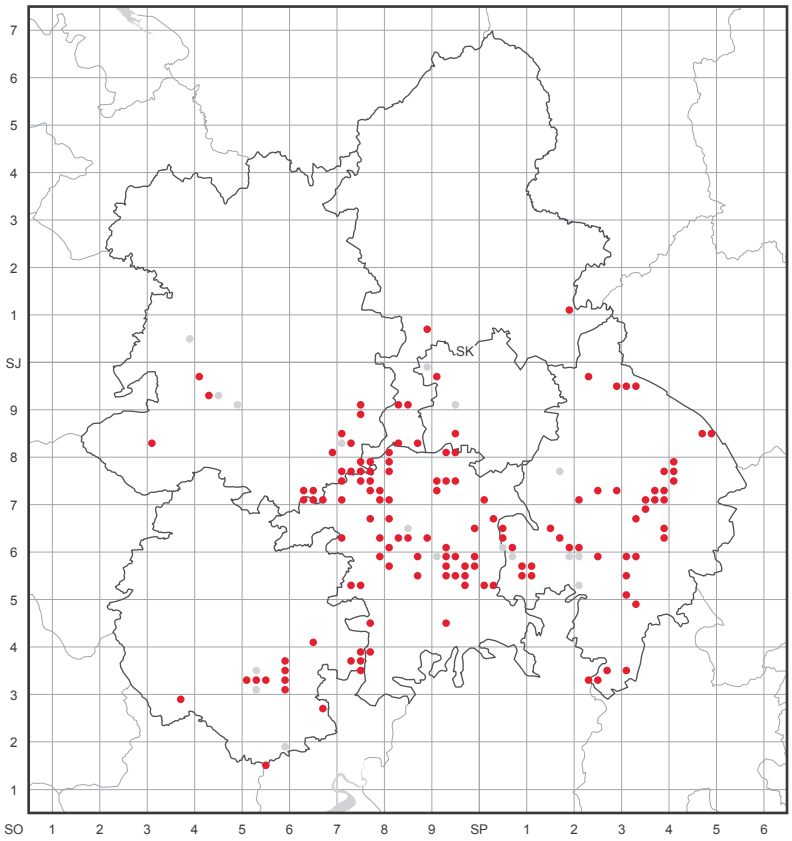
Herefordshire
Recorded in a number of woods and particularly concentrated in the south and east of the county.

Shropshire
Has several woodlands where this species is regularly recorded but only occasional records elsewhere.

Staffordshire
One or two records.

Warwickshire
Though still scarce the number of definite colonies has increased due to specialist searches for ova and larvae. 26 colonies confirmed potentially 9 further colonies await confirmation.

Worcestershire
Occurs in most sizeable woodlands in the county with some evidence of northwards expansion.



Threats

• Inappropriate woodland management leading to habitat deterioration and/or loss of larval food plant (Honeysuckle). Increase in Fallow Deer numbers which browse Honeysuckle

Survey - During the period leading up to publication of the Millennium Atlas, all large and medium sized woods in Warwickshire were surveyed for the White Admiral. Although a number of sites were discovered or rediscovered, many more potentially suitable areas of habitat were apparently unoccupied (Slater, 2005b). In Warwickshire, the aim was to resurvey all known and potential sites for White Admiral between 2006 and 2009. This target is already well on the way to being achieved with 39 of the 59 sites in question having been resurveyed by 2007 (Slater, 2008b).

Monitoring - White Admiral is currently well covered on transects in the West Midlands Branch area with 9 sites where it is recorded. Prior to the poor weather of last summer, the numbers were increasing well particularly at Grafton Wood (129 recorded here in 2006 with only 15 in 2007).

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), which followed on from the local species action plan written for this butterfly in Warwickshire in 1996 (Slater, 1996a), the aim was to increase the number of White Admiral colonies monitored to 7 by 2009. This aim has nearly been achieved with five sites being monitored in 2007 (Slater, 2008b). Three new transect have also been established this year at Wappenbury, Bubbenhall and Weston/Waverley (Mike Slater, *pers. comm.*).

Management - Although the White Admiral thrives particularly well in neglected coppice where its foodplant honeysuckle trails down in shady conditions, it can also breed in conifer woods where honeysuckle grows in shady ride edges. The adults also need open glades and clearings where they can find abundant nectar (especially from bramble) (Asher et al., 2001). The amount of edge habitat can be increased by the scalloping of rides (Mike Slater, *pers. comm.*). At Crackley Wood experimental planting of honeysuckle was carried out in 2006 to establish if natural colonisation can occur once plants become established (Mike Slater, *pers. comm.*).

Publicity - An article by Mike Slater focusing on how to find eggs and larvae of the White Admiral (Slater, 2004b), resulted in other Warwickshire branch members successfully locating these early stages. Since then egg/larval searches have been successful on a number of Warwickshire sites (Slater, 2008b).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote species such as the White Admiral.	Ongoing	LAs, Wildlife Trusts, NE
Site/Species Safeguard and Management		
2. Continue BC involvement in site management at key sites (e.g. Haugh Wood, Chorley Wood, Wyre Forest and Ryton Wood).	Ongoing	NE, FC, NT, local volunteers
3. Seek opportunities to target landowners with advice on beneficial management which might encourage them to maintain or improve the habitat.	Ongoing	Local volunteers, Site owners, FC, NE, County Councils, Wildlife Trusts
4. Survey for this species in areas where it may yet be under-recorded (e.g. Warwickshire and Worcestershire).	By 2011	Local volunteers, Wildlife Trusts
Research and Monitoring		
5. Continue to monitor (e.g. by transects or timed counts) and collate results. Provide feedback to land managers.	Ongoing	Local volunteers, FC, Wildlife Trusts
6. Increase the level of monitoring to ensure that all known colonies (and potential colonies) are monitored at least once every three years.	By 2011	Local volunteers, NE, NT
Communication, Education & Publicity		
7. Increase awareness among the general public of the presence of this species, its needs and how to record it by events, articles and press releases (aim for at least 1 every five years).	Ongoing	LAs, WTs, local volunteers

White Admiral larva by Steven Cheshire

3.1.9 Small Pearl-bordered Fritillary - *Boloria selene*

This species' habitats include damp, open deciduous woodland and damp grassland and its most frequently used larval food plants are common dog violet (*Viola riviniana*) in woodlands and marsh violet (*Viola palustris*) in damper locations. For detailed information on the status, ecology and habitats of this species in Britain see national Species Action Plan (Barnett & Warren, 1995a).

Small Pearl-bordered Fritillary by Jenny Joy

Distribution and Status in the West Midlands - A local species which is declining severely in some parts of the West Midlands.

Birmingham & Black Country
No records.

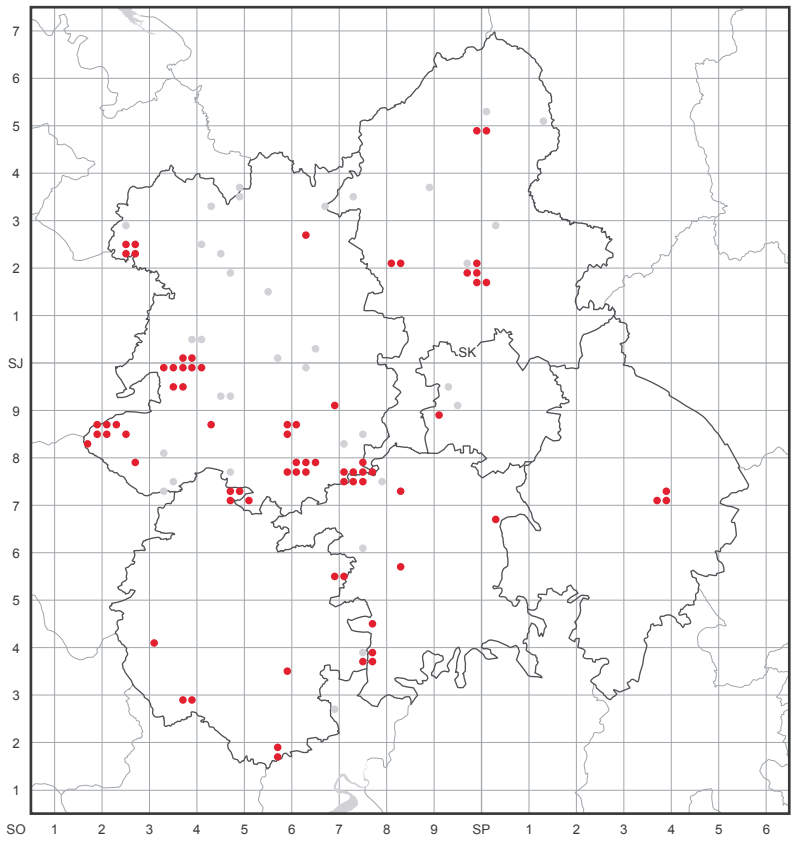
Herefordshire
Recorded on a small number of sites between 2000 and 2003. It appears to have been lost to Bringsty Common.

Shropshire
Still present in a number of areas including the Wyre Forest, Stiperstones, Clun Forest, Catherton Common and Llynclys Common and possibly more extensive than envisaged during the 1990s. Recorded at several locations on Brown Clee Hill in 2004 (where it was last recorded in 1997) (Richard Southwell, *pers. comm.*). Numerous wet flushes on remote hillsides in South Shropshire which may support marsh violet have yet to be checked (Joy, 2002c).

Staffordshire
Targeted survey of Staffordshire in 2002 e.g. Cannock Chase and Doley Common (Joy, 2002c) with emphasis on survey for this species in the Consall and Churnet Valleys in 2003 (Joy, 2003b). However, Cannock Chase is the only area of the county where the Small Pearl-bordered Fritillary is still present in significant numbers (Joy, 2005a, 2006a).

Warwickshire
This species originally became extinct in Warwickshire in 1961. In 1995 an official BC release supported by the Warwickshire Wildlife Trust and EN occurred in Ryton Wood. Despite the habitat having been assessed as suitable to hold a small to medium sized colony, the species only bred for 2 years. The last sighting was in 1997 (Warmington, 2003, Slater, 2005b).

Worcestershire
This species was recorded in only 6 tetrads between 1995 and 2003, the majority of those being in Wyre Forest where it is geographically more restricted than the Pearl-bordered Fritillary and generally seen in lower numbers. It is now extinct on south Malverns (Trevor Bucknall, *pers. comm.*).



Threats
- Lack of management.
- Drying out of sites where marsh violets are utilised.

Survey - Surveys carried out in Shropshire and Staffordshire (Joy, 2002c) showed that most of the colonies are small with only four medium sized colonies. A survey of the Coombes and Churnet Valleys in Staffordshire in 2003 (Joy, 2003b) also suggested that this species is quite mobile in the region although numbers recorded during this survey were disappointing. Survey in the Wyre Forest in 2002 and 2005 (Joy, 2002c, 2005b) found this species still to be fairly widespread and mobile. The maintenance of open wet flushes is likely to be very important for this butterfly in the Wyre Forest as this is the sort of habitat in which it is frequently found (even though marsh violet appears to be largely absent from these areas). The highest number of Small Pearl-bordered Fritillary that were seen on any one occasion during the 2005 study was 8 adults suggesting that the usual colony size is fairly small.

Monitoring - Since the 2002 Staffordshire survey, a transect has been established at Doley Common and timed counts have been set up in two valleys at Cannock Chase. By far the best transect site is the Wyre Forest, however the numbers have been dropping over the last few years (e.g. count of 84 on the Wyre Forest East transect in 1996 compared to 28 in 2002 and only 9 in 2007).

Management - Sightings of singletons at locations in Shropshire and Staffordshire some distance from known colonies, suggests that the species may operate as a metapopulation, with areas of suitable, but apparently unoccupied habitat. Grazing has recently been introduced at three sites in the Stiperstones area of Shropshire sites where the Small Pearl-bordered Fritillary is present. Grazing is now also being considered in the Cannock Chase area.

Habitat Improvement - This species may have benefited from glade management work carried out at Consall Nature Park several years ago. It may also benefit from the clearance of marshy areas which has recently taken place in several different parts of the Wyre Forest (including work carried out in autumn/winter 2007 as part of the Back to Orange Project). A work day by the Shropshire Butterfly Group in November 2007 improved the habitat for this butterfly on one site in the Stiperstones area.

Policy - An action plan for this species in Warwickshire was written in 1995 (Slater, 1995). There is now an Action Plan for Small Pearl-bordered Fritillary within the Shropshire Biodiversity Action Plan and the Staffordshire Biodiversity Action Plan.

Publicity - A "Bracken for Butterflies" leaflet was revised in 2005 (Bulman, Joy & Bourn, 2005). A Small Pearl-bordered Fritillary factsheet has recently been produced (Ellis & Wainwright, 2007b).

Small Pearl-bordered Fritillary by Patrick Clement

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Small Pearl-bordered Fritillary.	Ongoing	LAs, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Continue to use a landscape approach for the conservation of this species in key areas of Shropshire, Staffordshire and the Wyre Forest. Aim to improve existing breeding habitats by more appropriate management (e.g. by grazing) and bring at least three additional sites into suitable management in each key area.	By 2011	NE, FC, Wildlife Trusts, County Councils, NT, AONB officers
3. Provide landowners and site managers with information to help them improve the habitat for this species.	Ongoing	NE, FC, Wildlife Trusts, County Councils
4. Continue to search for new sites which may support additional breeding habitat in areas where this species still exists e.g. in the Cannock Chase area	Ongoing	NE, FC, Wildlife Trusts, County Councils
Research & Monitoring		
5. Continue to monitor transects and undertake counts on key sites annually. Provide feedback to land managers.	Ongoing	NE, FE, Wildlife Trusts, County Councils, NT
6. Increase the level of monitoring to ensure all known colonies are visited at least once every three years.	By 2011	NE, FC, Wildlife Trusts, County Councils, NT
7. Assess the success of current grazing regimes by regular visits to sites where BC has given management advice.	Ongoing	NE, FC, Wildlife Trusts, County Councils, NT
Communication, Education & Publicity		
8. Raise awareness of the plight of this species in the region and how people can help via events, articles and press releases (aim for at least 1 every three years).	By 2011	Wildlife Trusts, NE,
9. Continue to distribute copies of the "Bracken for Butterflies" leaflet and the species factsheet and encourage their inclusion on web sites.	Ongoing	NE, County Councils, local volunteers, Wildlife Trusts etc.

Marsh Violet, larval foodplant of the Small Pearl-bordered Fritillary by Jenny Joy

3.1.10 Pearl-bordered Fritillary - *Boloria euphrosyne*

A species which primarily occurs in dry open woodlands or in bracken/grass/scrub mosaics where the main larval food plant common dog-violet (*Viola riviniana*) grows abundantly in sunny sheltered conditions. For detailed information on the status, ecology and habitats of this species in Britain see national Species Action Plan (Barnett & Warren, 1995b and its update Brereton, Roberts & Warren, 1999).

Pearl-bordered Fritillary by Debbie Hibbitt

Distribution and Status in the West Midlands - The West Midlands region is considered an important stronghold for this species. Many sites are extremely vulnerable and dependent on continuity of sound management practices.

Birmingham & Black Country
Never recorded.

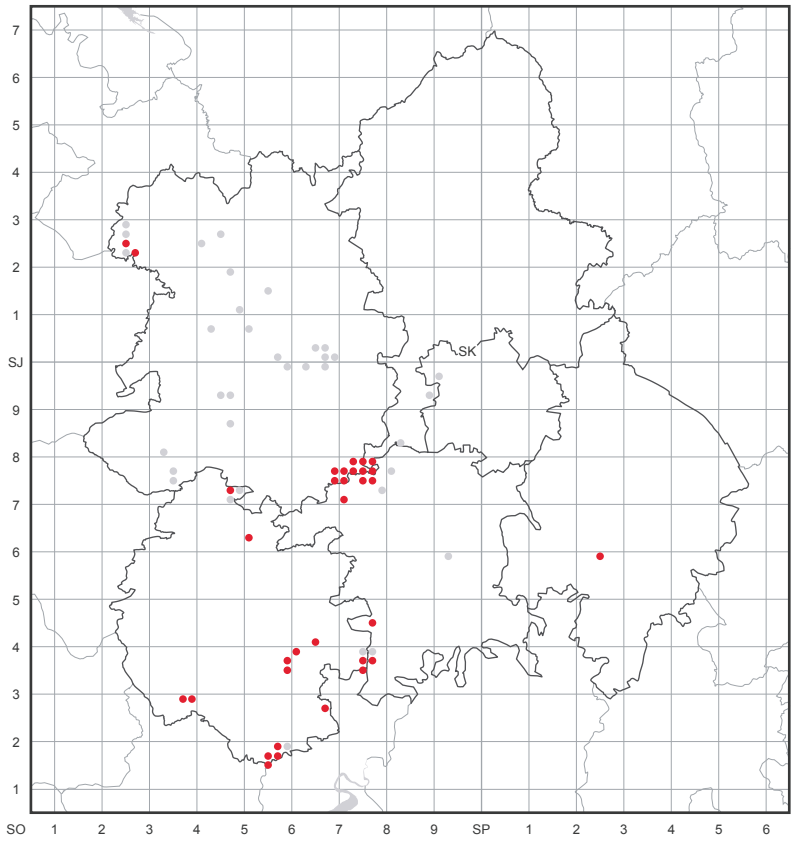
Herefordshire
Currently recorded from a small number of sites including a strong population at Ewyas Harold Common.

Shropshire
Thought to be restricted to the Wyre Forest area (where it is still widespread) until 2007 when it was re-discovered on two sites in the Oswestry Uplands area.

Staffordshire
Extinct around 1950 (Burnt Wood). Occasional sightings do not represent permanent colonies.

Warwickshire
Extinct 1968. Lost from the last site (Oakley Wood) when trees shaded the site. In 1997 an unofficial release occurred, it bred successfully for 2 years before dying out in 1999 (Mike Slater, *pers. comm.*).

Worcestershire
Stronghold is the Wyre Forest. There are no recent records from the southern Malverns where it is now believed extinct (Trevor Bucknall, *pers. comm.*).



Threats
- Lack of woodland management.
- Changing woodland management practices.
- Lack of grazing animals on bracken covered sites.
- Problems with arranging appropriate management on common land (i.e. fencing and grazing).

Survey - Extensive surveys showed adults to be present in 27 areas of the Wyre Forest in 2002 (Joy, 2002d). A larval survey of the Wyre Forest in 2003 located larvae in six parts of the forest with six additional sites being identified as probable breeding sites on the basis of characteristic larval damage (Joy, 2003c). A survey of 12 Herefordshire Community Commons (including Ewyas Harold Common) was recently undertaken (Clarke & Green, 2005, 2007). A project looking at a landscape approach to the conservation and possible re-introduction of the Pearl-bordered Fritillary in the Oswestry Uplands area of Shropshire was initiated in 2005 (Boardman, 2005) with some common standard monitoring habitat assessment work taking place in 2006 (Boardman, 2006) before the butterfly was re-discovered here in 2007.

Monitoring - Recorded on two transects in the Wyre Forest which have been monitored for many years (Wyre Forest East and Wyre Forest West), one transect at Haugh Wood (recorded since 1987) and a transect at Ewyas Harold Common. Number have varied from a peak of 157 on the Wyre Forest East transect in 1991 to a low of 12 in 2006. Since 2003 a number of timed counts have been carried out at the Wyre Forest in addition to the two transects (e.g. Joy, 2003d, 2006b, 2008a).

Management - FC and BC undertake regular management work to benefit this species at Haugh Wood. NE and FC use a variety of techniques (e.g. bracken rolling, coppicing, scrub clearance and ride edge management) on a number of sites in the Wyre Forest which are likely to benefit this species. A couple of the NNR coppice plots in the Shelfheld area of the Wyre Forest are now known to have been occupied from 2003-2005 with large coppice plots in Withybed Wood and Longdon Wood now supporting good numbers of this species (Joy, 2008a). A 2003 survey of scallops in the Wyre Forest created by FC as part of their ongoing management programme revealed that at least 18% of these supported suitable breeding habitat for the Pearl-bordered Fritillary (Joy, 2003e). The Back

to Orange project will create additional habitat for the Pearl-bordered Fritillary over the next three years (Joy, 2008a) and a joint FC/BC work party at Pound Green Coppice in February 2008 helped to create much new potential habitat. The Herefordshire Community Commons Project carried out management work to improve the habitat for Pearl-bordered Fritillary at Ewyas Harold Common over the past two winters (2006/07 and 2007/08).

Policy - There is now an Action Plan for Pearl-bordered Fritillary within the Herefordshire Biodiversity Action Plan, the Worcestershire Biodiversity Action Plan and the Shropshire Biodiversity Action Plan.

Publicity - A "Bracken for Butterflies" leaflet was revised in 2005 (Bulman, Joy & Bourn, 2005). A Pearl-bordered Fritillary factsheet has recently been produced (Warren & Wigglesworth, 2006a).

Pearl-bordered Fritillary by Steven Cheshire

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Pearl-bordered Fritillary.	Ongoing	LAs, FC, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Provide landowners and site managers with information to help them improve the habitat for this species.	Ongoing	NE, FC, Wildlife Trusts, County Councils
3. Take a landscape approach to conservation of this species in key areas of the region where this species still exists. Aim to double the potential breeding habitat in each key area by a) taking opportunities to extend existing breeding areas and b) by bringing at least three additional areas/sites into suitable management.	Ongoing	FC, NE, Wildlife Trusts, LAs, other land owners.
4. Use a landscape approach for a program of re-establishment to former sites (or a series of actively managed sites) in one part of the region where this species used to exist. This should be in line with the species action plan drawn up by BC (Barnett & Warren, 1995b).*1	Ongoing	FC, NE, Wildlife Trusts, LAs, other land owners, BC Conservation Committee.
Research & Monitoring		
5. Continue to monitor and collate results on all current transects. Provide feedback to land managers.	Ongoing	Wildlife Trusts, Local volunteers, FC, NE
6. Increase the level of monitoring to cover all surviving colonies by a spot check, a full species transect or a timed count at least once every three years.	By 2011	Local volunteers, NE, NT, Wildlife Trusts.
7. Support ecological research that may assist the long term conservation of the species.	By 2011	NE, other grant awarding bodies
Communication, Education & Publicity		
8. Raise awareness of the plight of this species in the region and how people can help via events, articles and press releases (aim for at least 1 every three years).	By 2011	Wildlife Trusts, FC, NE,
9. Continue to distribute copies of the "Bracken for Butterflies" leaflet and the species factsheet and encourage their inclusion on web sites.	Ongoing	NE, LBAP officers, local volunteers, Wildlife Trusts etc.

***1 - Forest of Feckenham Pearl-bordered Fritillary re-establishment project finally started in 2006 using stock captured from the Wyre Forest following on from initial work in 2002 (Barker, 2002, Joy, 2008b).**

3.1.11 High Brown Fritillary - *Argynnis adippe*

The two main habitats for the High Brown Fritillary in Britain are bracken-dominated habitats and limestone rock outcrops (but currently in north-west England only) where the larval food plant common dog-violet (*Viola riviniana*) grows in warm sheltered conditions. For detailed information on the status, ecology and habitats of this species in Britain see National Species Action Plan (Barnett & Warren, 1995c).

High Brown Fritillary by Jim Asher

Distribution and Status in the West Midlands - This is a seriously endangered species which has undergone severe decline in the region during the last 30 years and which only now occurs on a very small number of sites, despite the existence of apparently suitable patches of habitat and the continued management of formerly occupied patches. These occupied sites are thought to represent a crashed metapopulation. The last known sites for this species in the Malvern Hills cross several county boundaries (Gloucestershire, Herefordshire and Worcestershire) and this can cause confusion.

Birmingham & Black Country
Never recorded.

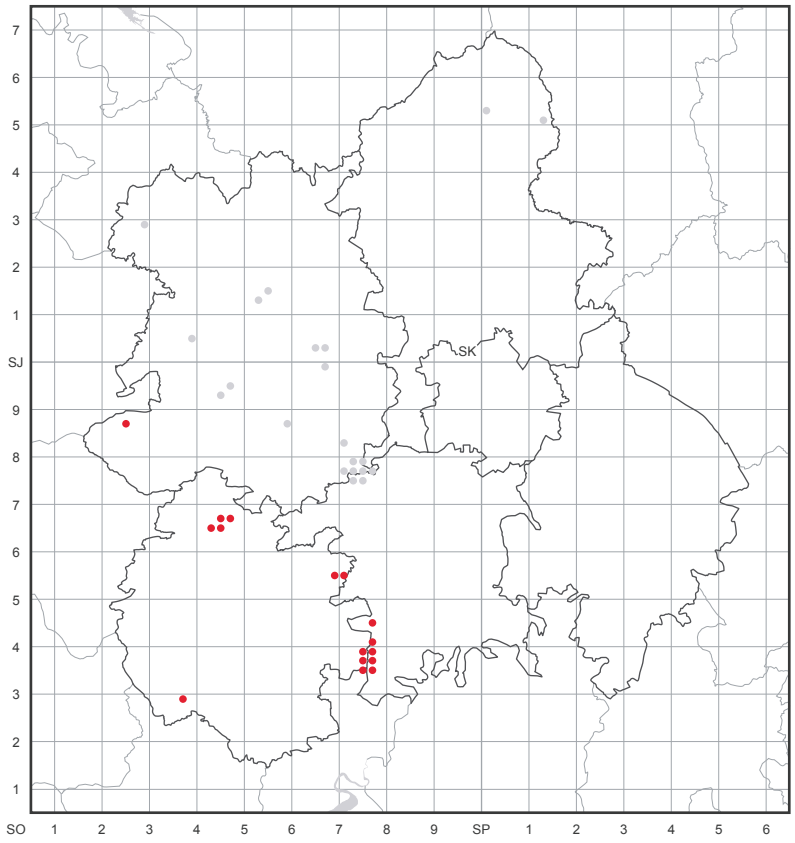
Herefordshire
Recorded on a small number of sites (on two commons and in the Malvern Hills) though in serious decline. Now only present in significant numbers on the Herefordshire part of the Malvern Hills.

Shropshire
No recent records and now considered to be extinct.

Staffordshire
Recorded on only one site (at Coombes Valley between 1995 and 2003) but now considered to be extinct.

Warwickshire
Extinct (1950s).

Worcestershire
Recorded in two areas (the Wyre Forest and the Malvern Hills) between 1995 and 2003 but now present only in the Malvern Hills.



Threats
- Lack of appropriate management (e.g. grazing).
- Fires (especially in the Malvern Hills).

Survey - Targeted survey of the Malvern Hills and Herefordshire Commons by branch volunteers in 2002 (Wood, 2002), 2003 (see Joy, 2004b), and 2004 only resulted in a handful of sightings (Clarke & Joy, 2006). More recent surveys by local volunteers and contractors working for Butterfly Conservation's Countdown 2010 project have been much more successful particularly in 2007 (Clarke & Green, 2008b)

Monitoring - Currently represented on two transects in the region. One of these transects was only re-established again in 2003 with the route of the second transect being modified in 2004 to take into account additional areas for High Brown Fritillary identified in 2003 (Joy, 2004b). Extensive vegetation monitoring was carried out in the Malvern Hills and Herefordshire Commons in 2004 using established techniques to locate remaining High Brown Fritillary breeding areas and to provide a baseline for future work (Clarke, 2005a and b). Some vegetation assessment also took place at Bringsty Common in 2003 (Boardman, 2003b) and 2004 (Clarke, 2005c) with the 2004 work repeated again in 2007 (see below). The Eastnor transect has just been re-established and will be walked in 2008.

Management - In the past few years, management needs have been identified for a number of key sites in the Malvern Hills (Clarke 2005a, Clarke & Green, 2008b).

Grazing - The 'High Brown Hills Project' has enabled many areas of the Malvern Hills to be grazed by cattle and sheep. While there is little doubt that this project has brought benefits for Lepidoptera, there are still a number of areas where grazing has yet to be established.

Bracken management - regimes continue to be carried out by a number of groups including BC volunteers, Natural England, the National Trust and the Malvern Hills Conservators. Regimes commonly involve some sort of summer cutting (in blocks or paths) and/or winter raking up of bracken

litter. The bracken management prescriptions for High Brown Fritillary areas at Bringsty Common were revised in 2004 and have improved the habitat for this species on this site (Clarke, 2007).

Publicity - A "Bracken for Butterflies" leaflet was revised in 2005 (Bulman, Joy & Bourn, 2005). A High Brown Fritillary factsheet has recently been produced (Warren & Wigglesworth, 2006b).

Policy - There is an Action Plan for High Brown Fritillary within the Biodiversity Action Plans for Herefordshire and Worcestershire.

High Brown Fritillary by Steven Cheshire

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the High Brown Fritillary.	Ongoing	WMBP, LAs, Wildlife Trusts, NE, etc
Site/Species Safeguard & Management		
2. Continue to liaison with site managers to ensure awareness of the potential presence of this species and appropriate management.	Ongoing	Private Estates, Malvern Hills Conservators, NE, NT, Wildlife Trusts, County Councils, other land owners/managers.
3. Continue to use a landscape approach for the conservation of this species in the region. Aim to double the existing breeding area and bring at least three more areas/sites into suitable management in any areas where the High Brown Fritillary occurs e.g. in the Malvern Hills area.	Ongoing	Private Estates, Malvern Hills Conservators, NE, NT, Wildlife Trusts, County Councils, other land owners/managers.
4. If numbers significantly increase in the Malvern Hills, consider a landscape approach for a programme of re-establishment to former sites as ecological knowledge, opportunity and resources allow in line with the national species action plan drawn up by BC (Barnett & Warren, 1995c).	If appropriate	NE, BC Conservation Committee
Research & Monitoring		
5. Continue to monitor changes in habitat and population size and provide feedback to those responsible for site management.	Ongoing	Local volunteers, Private Estates, NE, NT, other site owners/managers
6. Ensure all sites where this species has recently been seen receive an annual visit for the next three years	By 2011	Local volunteers, Private Estates, NE, NT, other site owners/managers
7. Continue with vegetation monitoring on at least three sites being managed for this species.	Ongoing	Local volunteers, Private Estates, NE, NT, MHC, other site managers
Communication, Education & Publicity		
8. Increase awareness among the general public of the potential fate of this species in the region and how they can help by events, articles or press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, Private Estates, NE, NT, other site owners/managers
9. Continue to distribute copies of the "Bracken for Butterflies" leaflet and the species factsheet and encourage their inclusion on web sites.	Ongoing	Local volunteers, Wildlife Trusts, County Councils, LBAP officers, NE etc.

3.1.12 Dark Green Fritillary - *Argynnis aglaja*

In Britain, this species can be found in species rich grasslands, on moorland and wet flushes and in acid grassland with bracken. Common dog-violet (*Viola riviniana*) is used by larvae in many habitats although hairy violet (*V. hirta*) and marsh violet (*V. palustris*) may also be utilised (Asher et al., 2001).

Dark Green Fritillary by Debbie Hibbitt

Distribution and Status in the West Midlands - A butterfly that is still widely but thinly scattered across the region and which still appears to be colonising new areas.

Birmingham & Black Country
Never recorded.

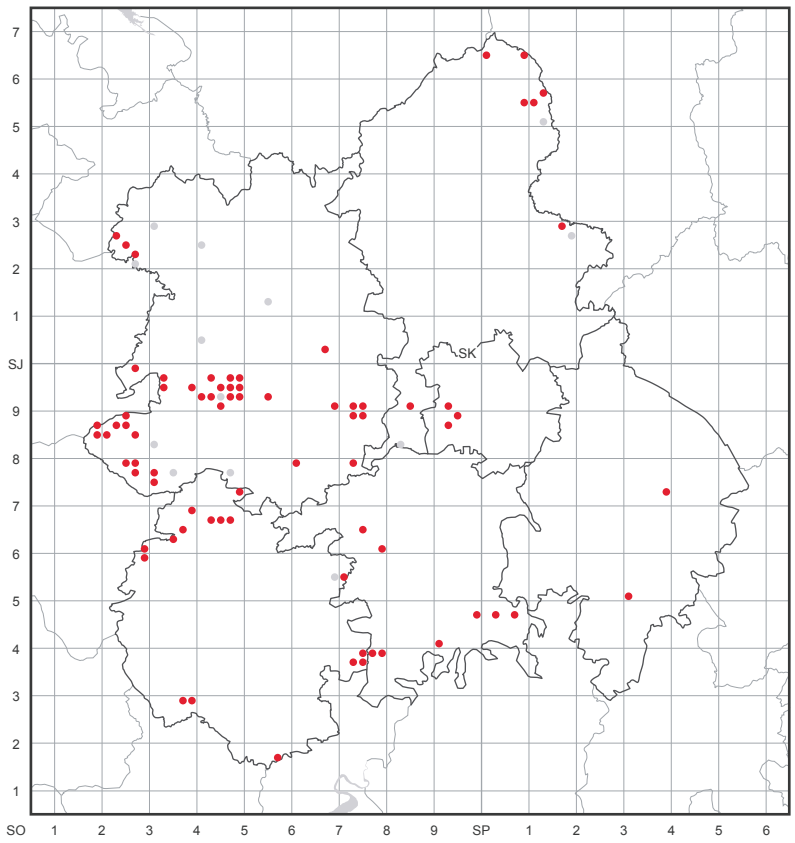
Herefordshire
Recently recorded on a handful of sites around the edge of the county.

Shropshire
Recorded on widespread sites with the Oswestry Uplands and the Stretton Hills remaining the key areas.

Staffordshire
Occasional sightings but unlikely to be resident.

Warwickshire
Was thought to have become extinct in the county in 1985 but this proved to be incorrect. In 1997, through more intensive surveying, the original breeding site was rediscovered (Slater 2007). This species has subsequently been recorded on 3 tetrads between 1995 and 2003 which represent one small colony (at Oxhouse Farm recorded every year 1997-2007) and occasional vagrants. Work is in progress to bring the number of colonies in this area up to three by 2010 (see Slater, 2008b). A first step is to get a second SSSI meadow brought back into condition.

Worcestershire
No known colonies, although a number of sightings on the Malvern Hills in 2007. Occasional sightings likely to be vagrants from the Cotswolds.



Threats
- Increase in grazing pressure as a result of management change.
- Increase in rabbit population.
- Abandonment of sites.

Survey - Resurveying of former sites for this species (e.g. Shropshire) has suggested it has been lost from many of the areas where it was recorded in 1997. It appears to have increased in numbers on the Malvern Hills in 2006 and 2007 (see Clarke & Green 2008b).

In Warwickshire the aim was to resurvey all known and potential sites for Dark Green Fritillary between 2006 and 2010. This target has already virtually been achieved with 18 of the 19 sites in question having been resurveyed by 2007 (Slater, 2008b).

Monitoring - In the West Midlands branch area only odd records appear on transects from time to time.

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), the aim was to monitor the only extant colony by 2009. This aim has been achieved by the Warwickshire Branch with this colony first monitored in 2006 then monitored again in 2007 (Slater, 2008b).

Management - Part of Wapley Hill Fort in Herefordshire has been managed for this species by the Forestry Commission. The Dark Green Fritillary may also have benefited from changes in grazing levels in the Malvern Hills and the Oswestry Uplands and from bracken management work carried out at Bircher Common for High Brown Fritillary. It may also benefit from planned management work at Yatton Hill in Herefordshire through the Herefordshire Community Commons Project.

Publicity - A "Bracken for Butterflies" leaflet was revised in 2005 (Bulman, Joy & Bourn, 2005).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Dark Green Fritillary.	Ongoing	LAs, FC, Wildlife Trusts, NE etc.
Site/Species Safeguard & Management		
2. Encourage a landscape approach for the conservation of this species in key areas where it is still strong (e.g. Herefordshire & Shropshire). Aim to improve the existing breeding habitats in key areas by more appropriate management and bring at least three additional sites into suitable management.	Ongoing	NE, FC, Wildlife Trusts, County Councils, NT, AONB officers
Research & Monitoring		
3. Develop a better understanding of the ecological requirements of this species and the best management practices.	Ongoing	NE, other grant awarding bodies
4. Determine whether any recent research has identified any grassland management regimes which might be suitable for this species and advise landowners/relevant authorities accordingly.	By 2011	NE, LAs, Wildlife Trusts, local volunteers, FE etc
5. Continue monitor on transects, collate results and encourage survey work in counties where the current status of this species is still unclear (e.g. Staffordshire and parts of Herefordshire). Provide feedback to land managers.	Ongoing	Local volunteers, NE, FC, County Councils
6. Continue annual monitoring at Oxhouse Farm in Warwickshire (by timed counts) and encourage owner to continue current grazing regime.	Ongoing	NE, LAs, Wildlife Trusts, local volunteers, FC etc
Communication, Education and Publicity		
7. Increase awareness among the general public of the importance of this species in the region, appropriate management and how to record it by events, articles and press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, NE, Warwickshire, Museum, Wildlife Trusts
8. Continue to distribute copies of the "Bracken for Butterflies" leaflet and encourage its inclusion on web sites.	Ongoing	NE, County Councils, LBAP officers, local volunteers, Wildlife Trusts etc.

Dark Green Fritillary mating pair by Mike Williams

Dark Green Fritillary by Mike Williams

3.1.13 Wall - *Lasiommata megera*

A butterfly which used to be common on the lowlands of Britain but which has recently become very scarce. It usually lives as small discrete colonies on dry, sparsely vegetated areas of open grassland. It is a species whose numbers have historically shown great fluctuations (Greatorex-Davies & Pollard, 1998).

Wall by Jim Asher

Distribution and Status in the West Midlands - A scarce butterfly throughout the region, which appears to be continuing to decline. Although the Wall may be extinct in Warwickshire, it is still present in adjacent Leicestershire.

Birmingham & Black Country
Used to be recorded on canal towpaths and other brownfield sites but has now largely disappeared.

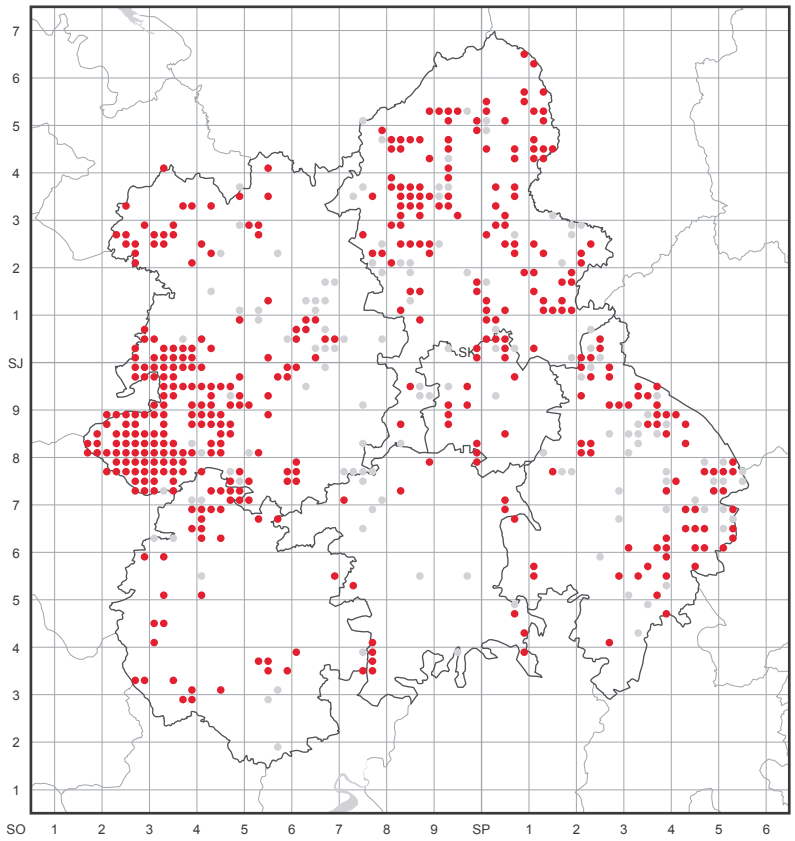
Herefordshire
It is still present on a number of sites.

Shropshire
Recorded on a large number of sites but usually in small numbers.

Staffordshire
Recorded on quite a number of sites but generally considered to be undergoing major decline.

Warwickshire
Recorded in 85 tetrads between 1995 and 2003 but now thought to be extinct (see below).

Worcestershire
Recorded in only 13 tetrads between 1995 and 2003 which represented a decline of more than 79% since 1994. Believed to exist now only on Bredon Hill , although its numbers there are very low (Trevor Bucknall, *pers. comm.*).



Threats

• Reason for decline not clearly understood as numbers have fallen on both managed and unmanaged sites.

Survey - The regional decline of this species is a reflection of the drastic decline nationally since 1989. In Warwickshire there were only two sightings in 2003 and none in 2004 and the species is now thought to be extinct (Slater, 2005b).

Monitoring - In the West Midlands branch area, only one individual was recorded in 2007 on a transect compared with many more in previous years (e.g. 36 on Windmill Hill in 1992 and 43 in Westhope in 2006).

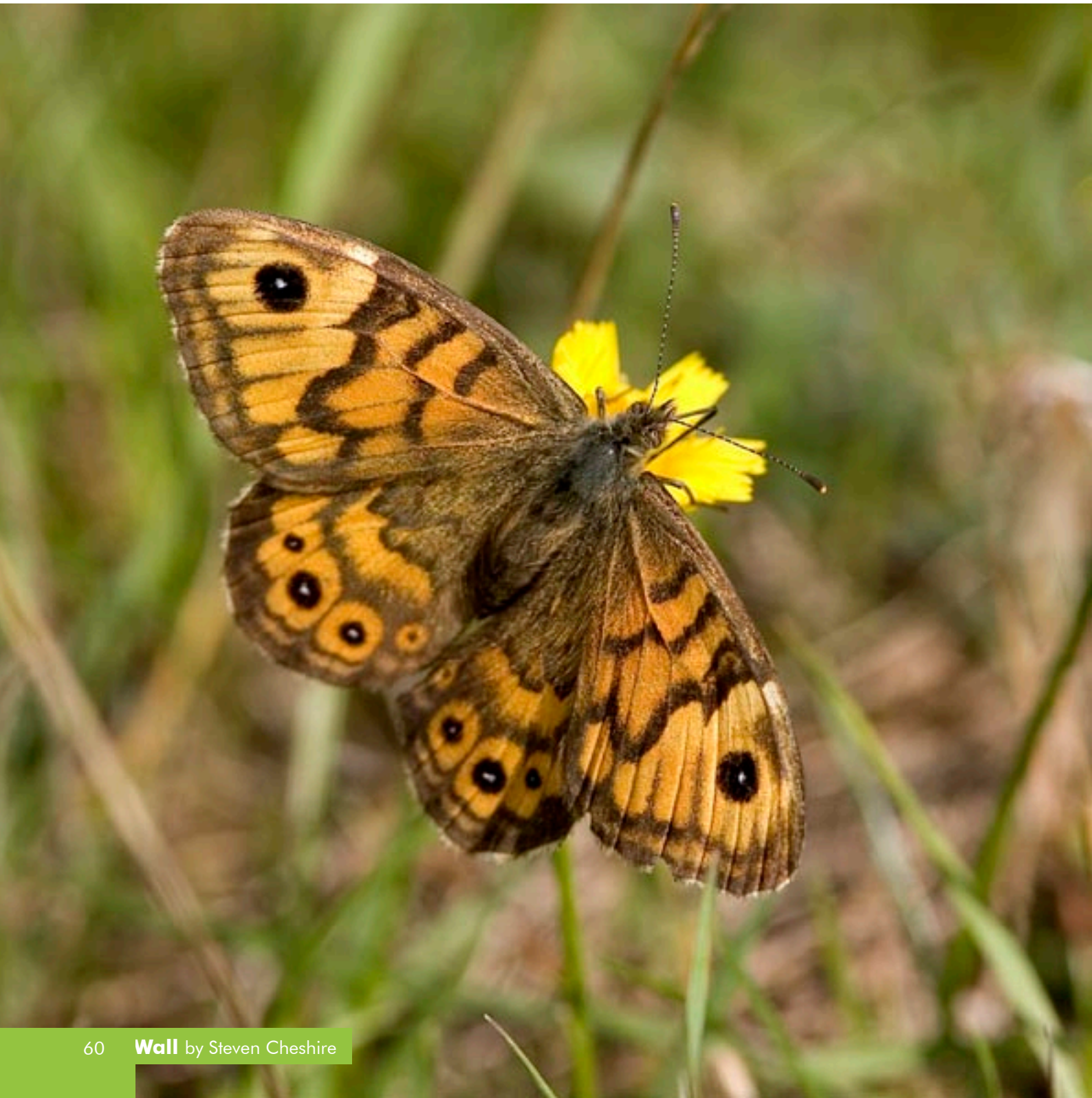
Management - This species may benefit from a number of ongoing projects in the region including the High Brown Hills grazing project in the Malvern Hills.

Policy - There is now an Action Plan for Wall within the Birmingham and the Black Country Biodiversity Action Plan.

Wall by David Green

Actions and Targets

Action	BC Targets	Possible Partners
Site/Species Safeguard and Management		
1. Continue to survey former locations in all counties where current status of this species is not clear to determine the extent of the decline.	Ongoing	Local volunteers, NE, Wildlife Trusts
Research and Monitoring		
2. Continue to support ecological research aimed at promoting measures that will assist the long-term conservation of this species if current declines continue.	Ongoing	NE, other grant awarding bodies



 Wall by Steven Cheshire

3.1.14 Grayling - *Hipparchia semele*

A species whose habitats are typically well drained with sparse vegetation and sheltered sunny spots and include abandoned quarries, hill forts, dry heaths, coastal hills and sand dunes. Its larvae feed on a range of grasses including bents, fescues e.g. sheep's fescue (*Festuca ovina*) and marram grass (*Ammophila arenaria*) (Asher et al., 2001).

Grayling by Keith Warmington

Distribution and Status in the West Midlands - A very localised species in the region with strongholds on old industrial land in south Shropshire and in the Malvern Hills which has nevertheless declined dramatically in the last decade.

Birmingham & Black Country
Never recorded.

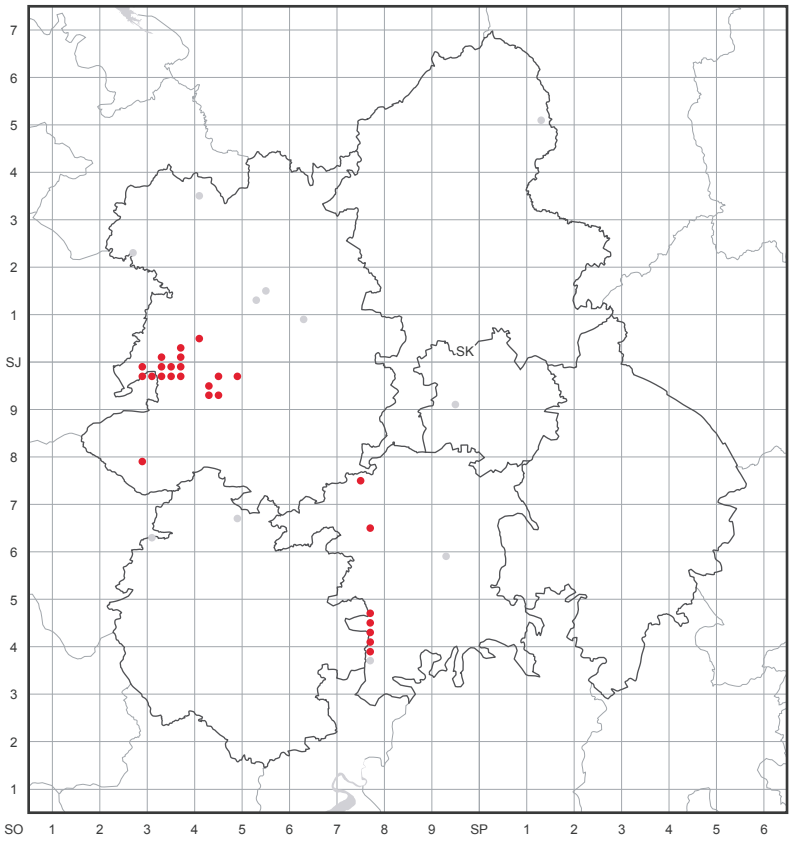
Herefordshire
The only recent records are from the Malvern Hills.

Shropshire
Still around 10 and 20 colonies. It is most frequently found on post-industrial workings such as lead mines but also on several former hill forts. A large previously unknown site supporting lots of Grayling habitat was discovered in Shropshire during 2007.

Staffordshire
Extinct some time this century (date unknown).

Warwickshire
Has never been recorded in the county.

Worcestershire
A number of recent records for the Malvern Hills area but evidence of decline. Records outside this area do not represent any permanent colonies.



Threats
- Reclamation of industrial land (Shropshire).
- Declines in grazing.
- Lack of management.

Survey - Targeted survey work for this species carried out in the Stiperstones area of Shropshire during 1998 and 1999 (Joy, 1999, 2000b; Loram, 1999, Loram *et al.*, 2003). During this study, the Grayling butterfly which was confirmed as being resident on ten sites in this area with flight areas (or patch size) and egg-laying areas being identified for each colony. Two of these sites were identified as being particularly important for the Grayling on the basis of their large egg-laying areas. The Grayling has recently colonised the Long Mynd and is regularly seen in two areas (Caroline Uff, *pers. comm.*).

Targeted survey of the Malvern Hills by local volunteers and Countdown 2010 contractors in 2006 (Clarke, 2006). A total of 67 Grayling were recorded during this survey. The adults were concentrated around the eastern slopes of North Hill and Worcestershire Beacon.

Monitoring - New transect targeted at the Grayling set up during 2007 on North Hill (Clarke, 2008). Grayling habitat assessment on the Malvern Hills developed in 2006 (Clarke, 2006) and tested out in 2007 (Clarke, 2008).

Management - this species appears to have benefited from the High Brown Hills grazing project in the Malvern Hills. The Grayling habitat on one site in the Stiperstones area of Shropshire was improved early in 2007 as a result of collaboration with FC (and a Shropshire Butterfly Group work party). Shropshire County Council has recently been contacted about the management of two more sites in the Stiperstones area (autumn 2007).

Policy - A "Brownfield sites" dossier has recently been compiled (Ellis, 2006) to help to draw up an 'alert list' of the most important and threatened brownfield sites in the region. The aim now is to use this dossier to try to improve the level of protection of the most threatened sites as well as improving their management.

There is an Action Plan for Grayling within the Shropshire Biodiversity Action Plan.

Publicity - a "Brownfields for Butterflies"leaflet was produced by Butterfly Conservation in 2004 (Ellis, Fox & Ellis, 2004).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Grayling.	Ongoing	LAs, Wildlife Trusts, NE etc
Site/Species Safeguard and Management		
2. Continue to support High Brown Hills grazing project and other initiatives in the Malvern Hills.	Ongoing	NE, Private estates, Malvern Hills Conservators, Malvern Hills AONB and Wildlife Trusts.
3. Continue to adopt a landscape level approach to the conservation of this species in Shropshire. Increase awareness amongst land owners and managers of the habitats this species occupies and of beneficial management.	Ongoing	MHC, Shropshire County Council, Shropshire Hills and Malvern Hills AONBs, Shropshire Wildlife Trust, NE
4. Provide feedback (from transects and survey work) to site managers so that suitable management recommendations can be made to maintain or improve the habitat.	Ongoing	Site owners and managers, MHC, NE, County Councils
5. Ensure any potential benefits for this species under the ELS and HLS schemes are identified.	Ongoing	NE, MHC, Shropshire County Council
Research and Monitoring		
6. Continue to monitor on transects and collate results.	Ongoing	Local volunteers, NE, Private estates, Malvern Hills Conservators and Wildlife Trusts.
7. Increase level of monitoring so that all colonies/sites are visited at least once every three years including Shropshire and Malvern Hills sites which could potentially be colonised.	By 2011	Local volunteers, NE, Private estates, Malvern Hills Conservators and Wildlife Trusts.
8. Carry out habitat assessments in Shropshire and the Malvern Hills at least once every three years	By 2011	Local volunteers, NE, Private estates, Malvern Hills Conservators and Wildlife Trusts.
Communication, Education & Publicity		
9. Circulate "Brownfield sites" dossier and/or "Brownfields for butterflies" leaflets to landowners and encourage their inclusion on web sites.	Ongoing	LAs, local volunteers
10. Increase awareness among the general public of the presence of this species by events, articles and press releases (aim for at least 1 every three years).	Ongoing	Local volunteers etc.

64 **Grayling** by Steven Cheshire

3.1.15 Large Heath - *Coenonympha tullia*

The Large Heath occurs in lowland raised bogs (mosses), upland blanket bogs, and damp, acid moorland where the main larval food plant, hare's-tail cotton grass (*Eriophorum vaginatum*) occurs. For detailed information on the status, ecology and habitats of this species in Britain see National Species Action Plan (Bourn & Warren, 1997).

Large Heath by Mark Eccleston

Distribution and Status in the West Midlands - Only present on two sites in Shropshire (Whixall and Wem Mosses) which represent the southernmost edge of its English range.

Birmingham & Black Country
Never recorded.

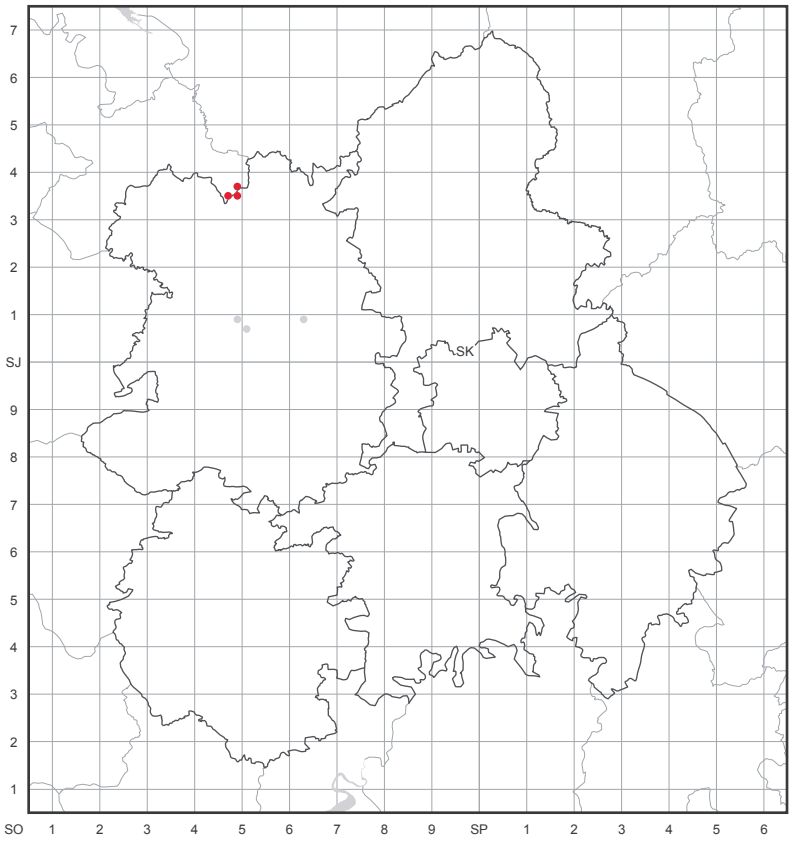
Herefordshire
Never recorded.

Shropshire
Recorded on two sites in Shropshire (Whixall and Wem mosses). Both Whixall and Wem Mosses are part of the Fenns, Whixall and Bettisfield Mosses NNR. The Large Heath was thought to have disappeared from Wem Moss in the late 1990s (probably due to increased water losses from the site) with good numbers of Large Heath only being first reported again in 2003.

Staffordshire
Extinct pre-1900 (Chartley Moss, date unknown) probably as a result of major drainage work in the 1890s.

Warwickshire
Never recorded.

Worcestershire
Never recorded.



Threats

- Small size of suitable habitat at Wem Moss.
- Agricultural practices (e.g. deepening of drainage ditches around Wem Moss).
- Scrub encroachment (bog myrtle at Wem Moss).
- Increasingly high winter water levels at Whixall Moss.

Survey - Various past projects to identify breeding areas, set up butterfly transects and assess the effects of raised water levels on Large Heath larvae on Whixall and Wem Mosses (see Joy, 1997). Annual reports by Peter Boardman on butterfly and moth survey results on the NNR since 1993 (e.g. Boardman, 2003c, 2004). Good numbers of adults sighted at Wem Moss in 2003 (R. Southwell, *pers. comm.*) with two females exhibiting egg-laying behaviour here. Five fresh females were also seen at Wem Moss in 2004 (J.Joy, *pers. obs.*)

 A view of Whixall Moss by Steven Cheshire

Monitoring - Currently recorded on 1 transect established at Whixall Moss (transect A) in 1992. In 2003, the Large Heath transect results gave the highest total (62) since 1997. Since then, numbers have continued to increase with 190 Large Heath being recorded on the transect in 2006 and 122 in 2007. For the first time in 2003, some Large Heath timed counts were also undertaken at nearby Fenn's and Bettisfield Mosses with encouraging results (24 and 19 in parts of Fenn's and 5 at Bettisfield, see Boardman, 2003c and 2004). Timed counts have been established at Wem Moss with J. Joy recording14 here in 2003 and 21 in 2004 (also detailed in Lewis, 2004) and 5 being recorded here in 2006.

Management - Natural England have continued to manage Whixall Moss as part of an NNR (with CCW) since 1991 to re-instate sphagnum bog over a large area decimated by commercial peat cutters. Although there were initially some concerns that these raised water levels may have reduced Large Heath larval survival (Joy, 1995, Joy & Pullin, 1999), the amount of cotton-grass (Eriophorum vaginatum) on Fenns and Whixall Mosses has significantly increased and appears to provide additional Large Heath breeding habitat (Peter Boardman, *pers. comm.*). This increase in breeding habitat has resulted in a substantial increase in the numbers of Large Heath recorded on the Whixall transect (see above). In autumn 2004, the Shropshire Wildlife Trust organised a ten year contract for scrub management at nearby Wem Moss.

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote BAP species such as the Large Heath.	By 2011	Shropshire County Council, North Shropshire District Council, Shropshire Wildlife Trusts, NE etc
Site/Species Safeguard and Management		
2. Continue BC involvement with site managers to ensure that future management takes on board the ecological requirements of the Large Heath.	Ongoing	NE, Shropshire Wildlife Trust
Research and Monitoring		
3. Try to ensure that Natural England continues to give priority to butterfly monitoring at Whixall Moss.	Ongoing	NE
4. Try to ensure annual monitoring by timed counts at Wem Moss.	By 2011	NE, Shropshire Wildlife Trust, local volunteers

Cotton-grass, larval foodplant for the Large Heath at Whixall Moss by Jenny Joy

 Large Heath by Steven Cheshire

3.1.16 Small Heath - *Coenonympha pamphilus*

A grassland butterfly which can still easily be found in most parts of the UK where fine grasses are present especially in dry, well drained situations. The largest colonies occur on downland heathland and coastal dunes. Smaller populations occur in many other locations including roadside verges, waste ground, woodland rides and glades and parkland (Asher et al., 2001).

Distribution and Status in the West Midlands

Birmingham & Black Country
Very few recent records.

Herefordshire
Still present on a number of sites.

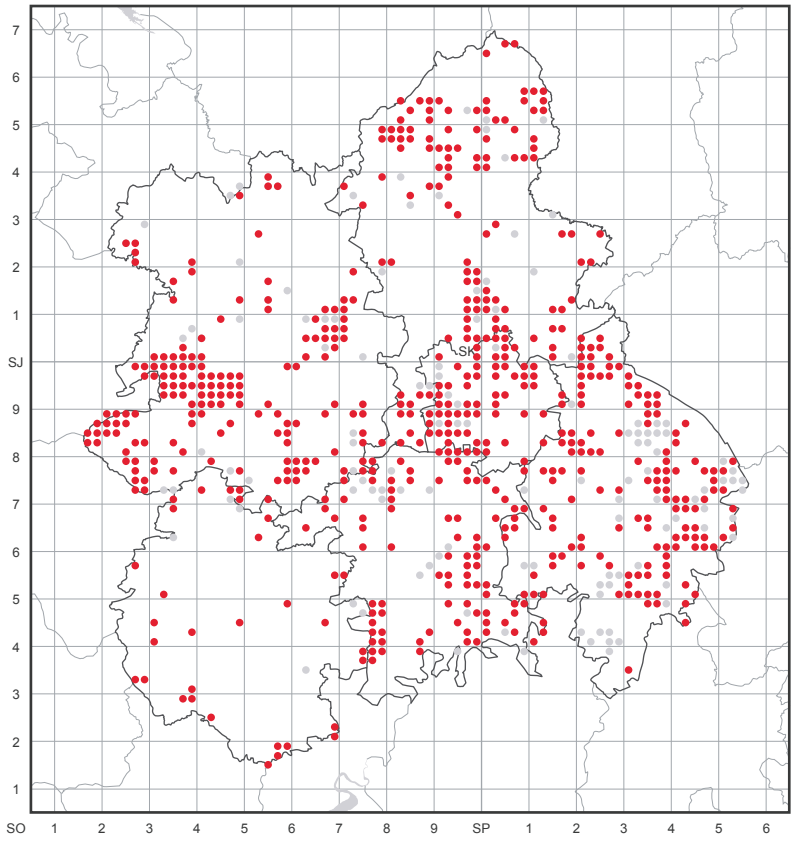
Shropshire
Still present on a number of sites.

Staffordshire
Recorded on quite a number of sites but generally considered to be undergoing major decline.

Warwickshire
Still widespread. One of the actions in the Warwickshire Butterfly and Moth Action Plan is to confirm that Small Heath occurs in every one of Warwickshire's 40 10 k recording squares every 5 years.

Worcestershire
Now very scarce in the county.

Small Heath by Dave Grundy



Threats
• Reason for decline not clearly understood as numbers have fallen on both managed and unmanaged sites.

Survey - The drastic national decline in numbers of Small Heath on monitored sites is estimated to be >50% in the UK over the last 25 years. There are indications that the regional situation is following the national picture.

Monitoring - Small Heath is currently well covered by transect recording in the West Midlands Branch area. 16 transects have recorded it but only 7 in 2007 (which was a poor year for this species).

Actions and Targets

Action	BC Targets	Possible Partners
Research and Monitoring		
1. Support ecological research aimed at promoting measures that will assist the long-term conservation of this species if current declines continue.	By 2013	NE, other grant awarding bodies
2. Continue to monitor on transects to determine population trends	Ongoing	Local volunteers

3.2 Medium Priority Species

3.2.1 Green Hairstreak - *Callophrys rubi*

In Britain this species is found on a wide range of habitats including acid grassland, moorland, heathland, sea cliffs and woodland rides. The larvae will feed on a number of plants including gorse *Ulex europeaus*, bird's-foot trefoil *Lotus corniculatus* and bilberry *Vaccinium myrtillus* (Asher et al., 2001).

Green Hairstreak by Patrick Clement

Distribution and Status in the West Midlands - A generally scarce species which appears to be undergoing decline in most counties. Recorded on 5 transects only during 2003, although this species is frequently thought to be under-recorded because of its behaviour (Asher et al., 2001). Whilst some sites continue to support good numbers, the Green Hairstreak is usually only present in low numbers and indeed can persist at very low population levels. Thus caution needs to be exercised in interpreting long term trends.

Birmingham & Black Country
Still occurs on some brownfield sites and at Sutton Park (see below).

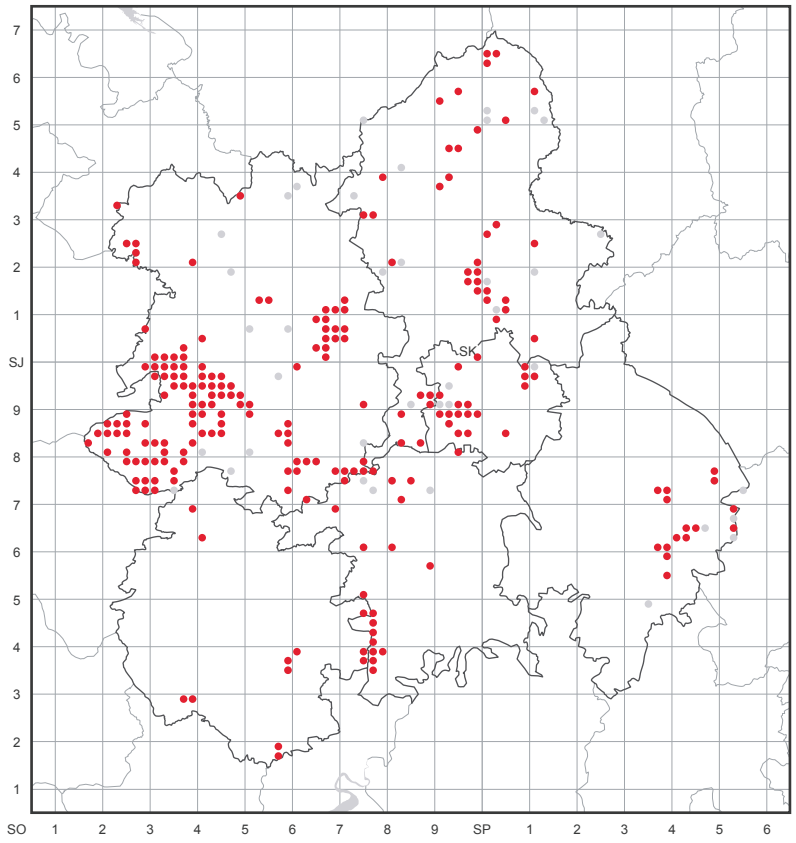
Herefordshire
Only a scattering of recent records mainly in the south of the county.

Shropshire
Widespread records from the Oswestry Uplands, the South Shropshire Hills and Fens and the north Shropshire Mosses.

Staffordshire
Still fairly widespread with some sites e.g. Cannock Chase supporting large numbers.

Warwickshire
A number of colonies discovered during and subsequent to surveys for the Millennium Atlas (e.g. at Bishops Bowl, Snowford Cutting and Bubbenhall). Warwickshire has between 11 and 14 colonies including Sutton Park which probably is one very large colony with two key breeding areas (Mike Slater, *pers. comm.*).

Worcestershire
Recently recorded on a handful of sites especially in the north and west of the county.



Threats
- Vigorous scrub control on managed sites.
- Decline in habitat quality on unmanaged sites due to natural succession to woodland.
- Problem of small isolated sites.

Survey - Sites surveyed in the Telford and Wrekin all supported small colonies (Joy, 2002a) as do most Warwickshire brownfield sites (Slater, 2005b). Green Hairstreak training day held at Sutton Park in Warwickshire in spring 2003 to stimulate recording and increase the level of monitoring of this species (Ellis, 2003).

In Warwickshire, the aim was to resurvey all known and potential sites for Green Hairstreak between 2006 and 2009. This target has already virtually been achieved with 25 of the 28 sites in question having been resurveyed by 2007 (Slater, 2008b).

Monitoring - 10 transects record this species in West Midlands branch area including Castlemorton Common, Coppett Hill (10 on the transect in 2005) and Whixall Moss (10 on the transect in 2007).

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), which followed on from the local species action plan written for this butterfly in Warwickshire in 1996 (Slater, 1996b), the aim was to increase the number of monitored colonies to 7 by 2009. This aim has already been achieved by the Warwickshire Branch with 7 colonies being monitored in 2007 and plans to monitor them all again in 2008 (Slater, 2008b).

Policy -There is now an Action Plan for Green Hairstreak within the Birmingham and the Black Country Biodiversity Action Plan.

A "Brownfield sites" dossier has recently been compiled (Ellis, 2006) to help to draw up an 'alert list' of the most important and threatened brownfield sites in the region. The aim now is to use this dossier to try to improve the level of protection of the most threatened sites as well as improving their management.

Publicity - a "Brownfields for Butterflies" leaflet was produced by Butterfly Conservation in 2004 (Ellis, Fox & Ellis, 2004). Many Green Hairstreak colonies occur on brownfield sites.

There are a number of important sites for this species within urban areas. Examples include Hawne Colliery, Saltwells, Dreadnought Road and Bury Hill (Richard Southwell, *pers. comm.*). There has recently been considerable publicity over the Hawne Colliery site in Dudley (White, 2000, Southwell, 2001) which supports a small Green Hairstreak colony (as well as very high numbers of other butterfly species). The government inspector has now ruled against the proposed development of this site and the council has now designated it as a SINC (after NE concurred). In the final UDP its designation has also changed (Richard Southwell, *pers. comm.*).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote species such as the Green Hairstreak.	Ongoing	LAs, Wildlife Trusts, NE
Site/Species Safeguard and Management		
2. Adopt a landscape approach to the conservation of this species in the region by identifying key strongholds to focus efforts (e.g. Sutton Park area of Warwickshire, Telford area, the Long Mynd in Shropshire). Aim to improve the existing breeding habitats in these key areas and bring at least three additional sites into suitable management.	By 2013	LAs, Wildlife Trusts, NT etc
3. Identify sites within these key areas where management work may improve the habitat and provide feedback to site managers.	By 2013	Site owners, LAs, NT, Wildlife Trusts etc
Research and Monitoring		
4. Continue to monitor (e.g. by transects and timed counts) and collate results. Provide feedback to land managers.	Ongoing	Local volunteers, LAs, Developers etc
5. Increase the level of monitoring to ensure that every colony (or potential colony) is monitored at least every five years.	By 2013	
6. Continue to survey for this species in parts of the region where it is still likely to be under-recorded (e.g. in Shropshire, Staffordshire, West Midlands and Warwickshire).	By 2013	NE, Wildlife Trusts, LAs, local volunteers
Communication, Education & Publicity		
7. Circulate "Brownfield sites" dossier and/or "Brownfields for Butterflies" leaflets to landowners and encourage their inclusion on web sites.	Ongoing	NE, LAs, LBAP officers, local volunteers
8. Increase awareness among the general public of the presence of this species, its needs and how to record it by events, articles and press releases (aim for at least 1 every five years).	Ongoing	LAs, local volunteers, Wildlife Trusts

 Green Hairstreak by Debbie Hibbitt

3.2.2 Brown Argus - *Aricia agestis*

A bivoltine species which is most common on chalk and limestone downland and on coastal dunes and cliffs in southern Britain. Habitats typically consist of sheltered south-facing slopes with short turf. The larvae feed on a range of plants including common rock-rose (*Helianthemum nummularium*) (Asher et al., 2001).

Brown Argus by Keith Warmington

Distribution and Status in the West Midlands - Always considered a scarce butterfly in the region which spread substantially in the 1990s.

Birmingham & Black Country
Recorded on a few sites between 1995 and 2003.

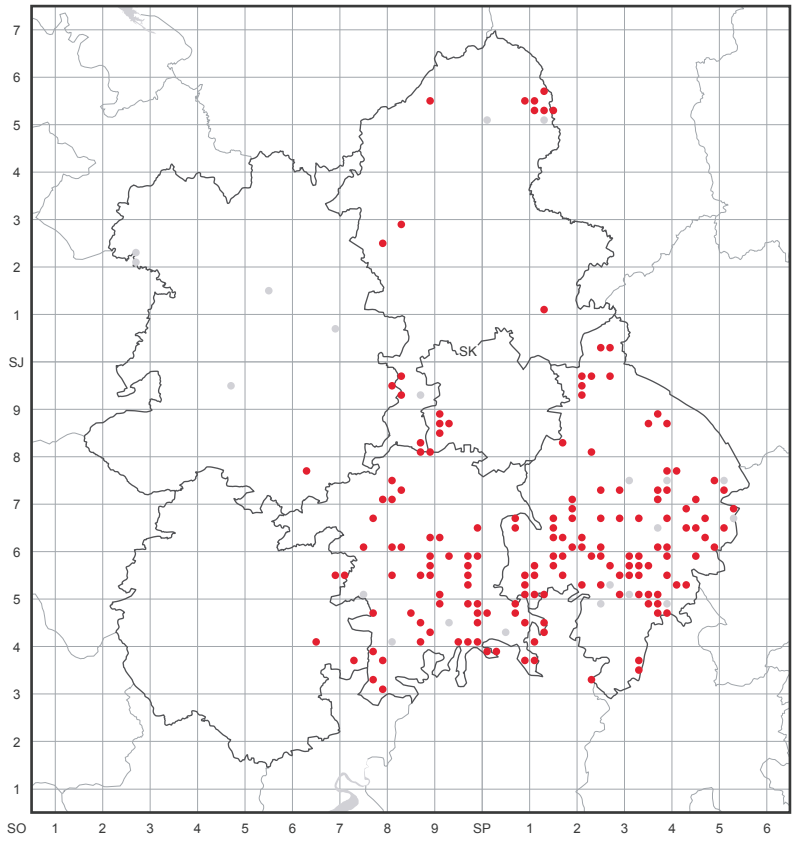
Herefordshire
Only a few recent records.

Shropshire
This species has declined by almost 95% in terms of the number of tetrads recorded between 1995 and 2003.

Staffordshire
Only a few recent site records.

Warwickshire
Brown Argus is still thought to be widespread in Warwickshire with the majority of colonies thought to be using geranium species (Slater, 2005b).

Worcestershire
Considerable expansion of range in recent years and now widespread and relatively common in the county often occupying set-aside where larvae feed on a range of geranium sp. (Mike Williams, *pers. comm.*).



Threats
- Decline in habitat quality.
- Temporary nature of recently colonised sites e.g. setaside.
- Development.
- Possibility of set-a-side and field margins being ploughed up to alleviate current grain shortages as recently proposed by government/EEC (Trevor Bucknall, *pers. comm.*).

Survey - Barker (1994) confirmed the colonisation of new sites in Worcestershire and Warwickshire. Many of these sites were in early stages of succession and were considered to be susceptible to habitat change. Also few Warwickshire colonies were on protected sites such as nature reserves or SSSIs.

Monitoring - Recorded on nine transects in the West Midlands Branch area including Grafton Wood, Honeyborne and Windmill Hill. The site recording the highest recent numbers was Grafton Wood in 2006 when 35 were recorded.

Management - None specifically targeted at this species although it is likely to benefit from the management work aimed at keeping open grassland e.g. at Ashlawn Cutting in Warwickshire (Parr, 2004b) and scrub removal in the Oswestry Hills. At Ryton Wood Meadows in Warwickshire Dovesfoot and Cutleaved Cransbill were deliberately seeded as part of the landfill restoration. Brown Argus numbers already appear to have responded to increased availability of larval food plant (*Mike Slater, pers. comm.*).

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote species such as the Brown Argus	By 2013	County Councils, Wildlife Trusts, NE etc
Site/Species Safeguard and Management		
2. Continue to make land managers aware of the potential presence of this species and appropriate management.	Ongoing	NE, Wildlife Trusts
Research and Monitoring		
3. Continue to monitor (by transects etc) and collate results. Provide feedback to land managers.	Ongoing	Local volunteers etc.
4. Increase the level of monitoring to ensure all known colonies are visited at least once every five years.	By 2013	Local volunteers, wildlife Trusts etc.
Communication, Education & Publicity		
5. Increase awareness among the general public of the presence, management needs and how to record this species by events, articles and press releases (aim for at least 1 every five years).	By 2013	Local volunteers, FC, WT, Wildlife Trusts etc.

Brown Argus by Keith Warmington

3.2.3 Silver-washed Fritilary - *Argynnis paphia*

A woodland species which occurs in both deciduous and coniferous woods and currently has a predominantly south-western distribution in Britain. Common dog-violet (*Viola riviniana*) is thought to be the most frequently used larval foodplant (Asher et al., 2001).

Male Silver-washed Fritillary by Patrick Clement

Distribution and Status in the West Midlands - There are still widespread records for this butterfly in the region and it is well represented on transects. Nationally this species seems to have increased in numbers since 2003 against a background of long term distribution decline (Fox et al., 2006a).

Birmingham & Black Country
A few new site records which represent an increasing status.

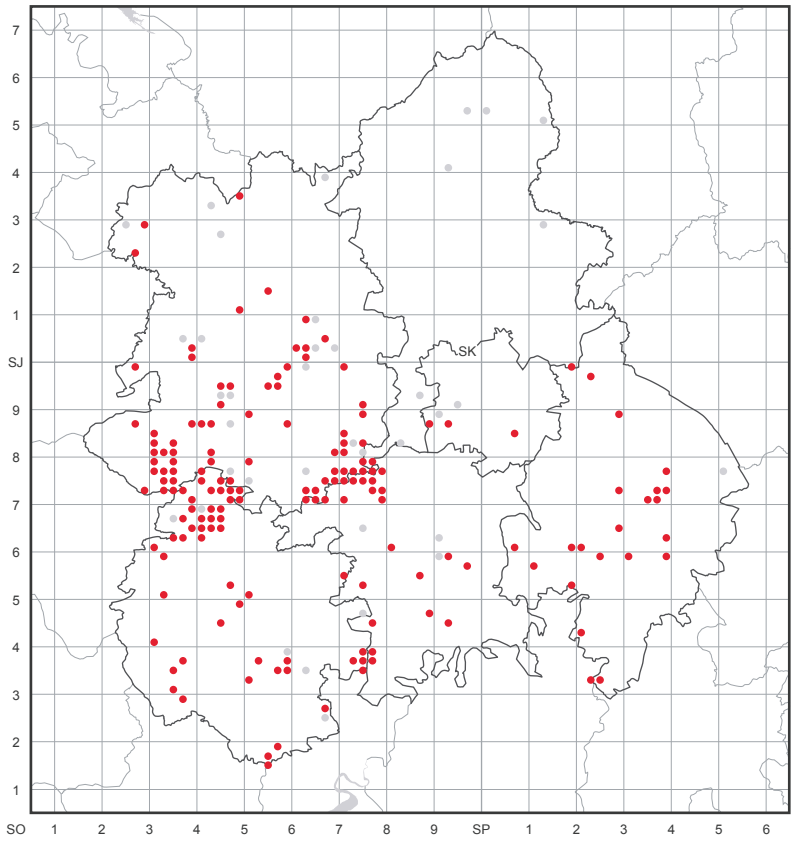
Herefordshire
Still widespread records.

Shropshire
Still widespread although most common in the south of the county.

Staffordshire
There are now only occasional records of this butterfly in the south of the county.

Warwickshire
The Silver-washed Fritillary was thought to be extinct in Warwickshire in the mid 1970s. Subsequently, an unofficial release took place in Wappenbury Wood in 1987 and 1988. Although this release failed in Wappenbury Wood, it did establish a definite colony at Ryton Wood. Between 1990 and 1998 numbers were low with a dramatic increase in numbers from 1999 and 103 transect records in 2006. In 2007 the Silver-washed Fritillary was confirmed to be breeding in 9 woods with the possibility of 2 more sites (Slater, 2007b).

Worcestershire
Recent evidence of expansion throughout county with increasing numbers of records especially over the last few years (Mike Williams, *pers. comm.*) The Wyre Forest area remains the main stronghold.



Threats
- Coniferisation of woodlands.
- Neglect of forests.
- General reduction in active broad-leaved management such as coppicing.

Survey - Recent recording in the Wyre Forest through the Back to Orange project (Grundy, 2008) suggests that it is widespread and abundant here.

In Warwickshire the aim was to resurvey all known and potential sites for Silver-washed Fritillary between 2006 and 2009. This target has already virtually been achieved with 18 of the 19 sites in question having been resurveyed by 2007 (Slater, 2008b).

Monitoring - 15 transect sites have recorded this species in the West Midlands branch area with high numbers recorded at Wyre, Haugh, Wigmore and Grafton. The Wyre Forest transects consistently record one of the highest Silver-washed Fritillary counts of anywhere in the country (Tim Dixon, pers. comm.).

In the Warwickshire Butterfly Action Plan 2005-2009 (Slater, 2006), the aim was to increase the number of monitored colonies to 5 by 2009 (this plan followed on from the earlier local species action plan produced for this butterfly in Warwickshire see Slater, 1997). This aim has already been achieved by the Warwickshire Branch with 5 colonies being monitored in 2007 and plans to monitor them again in 2008 (Slater, 2008b).

Management - the active management of Ryton Wood since 1999 (including three coppice plot cycles and nine ride side coppice programmes) has resulted in a dramatic increase in both the distribution and abundance of the Silver-washed Fritillary in this wood (see Slater, 2003b, 2007b). The recent ride-side management work carried out at Bell Coppice (part of the Wyre Forest) by Natural England resulted in 34 Silver-washed Fritillary being recorded here in 2007. Other work being carried

out in the Wyre Forest area (e.g. coppicing, ride widening) by Natural England and the Forestry Commission is obviously being beneficial to this species. The Princethorpe Woodlands Project in Warwickshire (which started in the autumn of 2004) took a landscape approach to wildlife conservation in this area with Silver-washed included as one of its key species.

From 1997-2007 the number of Warwickshire colonies increased from 3 to 6 (see Slater, 2008b) with the new target being to increase this to 10 by 2010.

Silver-washed Fritillary by Keith Warmington

Actions and Targets

Action	BC Targets	Possible Partners
Policy & Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans, LBAPs etc) contain policies that safeguard and promote species such as the Silver-washed Fritillary.	Ongoing	LAs, Wildlife Trusts, NE
Species/Site Safeguard and Management		
2. Continue to adopt a landscape approach to the conservation of this species in the region by identifying key regional areas. Aim to continue to improve existing breeding habitats within key areas by encouraging more appropriate management and bring at least three additional sites into suitable management.	Ongoing	LAs, Wildlife Trusts, WT, NT, NE, FC
3. Continue to work with the Princethorpe Woodlands Project to encourage management for Silver-washed Fritillary in this part of Warwickshire.	Ongoing	Princethorpe Woodlands Officers, NE, Warwickshire Wildlife Trust, Warwickshire Museum etc
4. Survey to assess current status in other parts of the region where this is unknown (e.g. parts of Worcestershire and Herefordshire).	By 2013	NE, FC, NT, County Councils, Wildlife Trusts, Las, local volunteers
Research & Monitoring		
5. Continue to monitor this species (by transects and timed counts) and collate results. Provide feedback to those responsible for habitat management.	Ongoing	FC, NE, Wildlife Trusts Local volunteers
6. Increase the level of monitoring so that all known colonies are visited at least once every five years.	By 2013	Local volunteers, site managers and owners.
Communication Education & Publicity		
7. Increase awareness among the general public of the presence of this species, its needs and how to record it by events, articles and press releases (aim for at least 1 every five years).	By 2013	NE, Wildlife Trusts, LAs, local volunteers

Female Silver-washed Fritillary by Steven Cheshire

3.3 Low Priority Species

Includes all other butterflies present in the region. These butterflies are listed in the table below together with an indication of their distribution in the West Midlands region. Comments on species which currently appear to be changing their national range (from Asher *et al.,* 2001) are also given. Some species e.g. Small White are only common in good migration years. Others such as Small Skipper can be abundant in neglected grasslands but are only found in ones or twos elsewhere such as on roadside verges.

Species	**Distribution in the West Midlands Region and comments**
Small Skipper	A widespread and common species in the region and one which appears to still be expanding its range in England and Wales.
Essex Skipper	A species which has nationally undergone a recent rapid expansion of its range since 1970-82. It is continuing to spread across the West Midlands region and was recorded in Shropshire and Staffordshire for the first time in 2004.
Large Skipper	Although the Large Skipper is widespread in the West Midlands region, it is not usually as common as the Small Skipper and frequently present in lower numbers. It is another species whose range is expanding northwards in England and Wales.
Brimstone	A widespread species in the region but one which can be absent over large areas especially in the west. Nationally its range is expanding northwards.
Large White	Widespread and common.
Small White	Widespread and common but probably frequently under-recorded.
Green-veined White	Widespread and common.
Orange Tip	Widespread and common
Purple Hairstreak	Widespread and common and probably under-recorded in the region (due to its tree-top habitats). Nationally, this species appears to have expanded its range northwards.
Small Copper	Widespread and fairly common in the region but frequently only present in small numbers.
Common Blue	A widespread species in the region and one which is frequently present on brownfield sites.
Holly Blue	A widespread species in the region but one which can undergo great variations in abundance from year to year. Nationally, its range is expanding northwards.
Red Admiral	A regular migrant which may be widespread and common throughout the region in good migration years. There are now some indications that this species can overwinter here (particularly in southern England).
Painted Lady	A regular migrant which may be widespread and common throughout the region in good migration years (e.g. such as in 1996). It may occasionally overwinter here (particularly in southern England).
Small Tortoiseshell	A widespread and common butterfly which can be seen in a variety of habitats. Despite some concerns, the 2000-04 period has seen no major change in its status (Fox *et al.*, 2006a).
Peacock	A widespread and common butterfly which can be seen in a variety of habitats. It continues to expand its range in northern parts of Britain and Ireland.
Comma	A widespread species in the region which is not uncommon in woods and gardens. Nationally, its range is expanding northwards.

Speckled Wood	Widespread and common in the West Midlands region. This species has continued to spread over the country in the last two decades, recolonizing many areas in eastern and northern England and Scotland.
Marbled White	Only really widespread in the south of the region where it has spread from calcareous grasslands. Nationally, it has expanded northwards and eastwards over the last twenty years despite some losses within its range.
Gatekeeper	Widespread and common. Nationally, its range is expanding northwards.
Meadow Brown	Widespread and common.
Ringlet	Widespread and common. It has recently extended its range in England and Scotland.

In 2004 Purple Emperor were released into some Warwickshire woodlands. It has now bred for three years and there are considered to be three colonies (Slater, 2008b).

Holly Blue by Debbie Hibbitt

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PART II. Moths

5.1 High Priority Moths List

The information listed in the moth sections has been drawn together from information given in the following sources: **Harper & Simpson (2002, 2003 & 2004)** for Herefordshire and Worcestershire species, **Emley & Warren (2001)** for Staffordshire species, **Riley (1991)** and **Peter Boardman** (*pers. comm.*) for Shropshire species, from **David Brown** (*pers. comm.*), **Brown (2006)** and **Nigel Stone** (*pers. comm.*) for Warwickshire species and from **Grundy (2004)** for Birmingham and Black Country species. Species log book numbers are from Bradley (1998).

High Priority Moth Species - includes all current UK BAP Priority Species and a few of the Red Data book (RDB) specialists of the region. National status (RDB, Na and Nb) is taken from Waring & Townsend, 2003. Species Log Book Numbers are taken from Bradley, 1998. Species accounts for these high priority moths are given in Section 4.

Moths are categorised as ■ Red Data Book (RDB) or □ proposed Red Data Book (pRDB) species on a scale of 1-3 based on the degree of threat (1 being endangered, 2 being vulnerable and 3 being rare). Nationally notable moths are classes as Scarce Grade A (Na) if they have a very restricted national distribution, or Scarce Grade B (Nb) if they have a restricted national distibution based on the number of occupied 10km squares

Common Name	Scientific Name	Log No	National Status
Currant Shoot Borer	*Lampronia capitella*	133	Nb
-	*Nemophora fasciella*	144	Nb
Goat Moth	*Cossus cossus*	162	Nb
Forester	*Adscita statices*	163	Local
-	*Nemapogon picarella*	221	pRDB1
-	*Phyllonorycter sagitella*	366	pRDB1
Welsh Clearwing	*Synanthedon scoliaeformis*	376	RDB3
-	*Coleophora wockeella*	527	pRDB2
-	*Coleophora vibicella*	538	Nb
-	*Aplota palpella*	653	pRDB1
-	*Agonopterix atomella*	703	Nb
-	*Syncopacma albipalpella*	848	Nb
-	*Celypha woodiana*	1066	pRDB2
-	*Grapholita pallifrontana*	1243	Na
-	*Anania funebris*	1381	Na
-	*Sciota hostilis*	1447	pRDB1
Dingy Mocha	*Cyclophora pendularia*	1675	RDB
False Mocha	*Cyclophora porata*	1679	Nb
Chalk Carpet	*Scotopteryx bipunctaria*	1731	Nb
Argent & Sable	*Rheumaptera hastata*	1787	Nb
Pauper Pug	*Eupithecia egenaria*	1824	RDB
Waved Carpet*1	*Hydrelia sylvata*	1877	Nb
Drab Looper	*Minoa murinata*	1878	Nb
Barred Tooth-striped	*Trichopteryx polycommata*	1880	Na
Narrow-bordered Bee Hawk	*Hemaris tityus*	1982	Na
Lunar Yellow Underwing	*Noctua orbona*	2108	Nb

Pale Shining Brown	*Polia bombycina*	2148	Nb
Bordered Gothic	*Heliophobus reticulata subsp. marginosa*	2153	pRDB
Silurian	*Eriopygodes imbecilla*	2175	RDB
Sword-grass*2	*Xylena exsoleta*	2242	Nb
Orange Upperwing	*Jodia croceago*	2257	RDB
White-spotted Pinion	*Cosmia diffinis*	2317	pRDB
Common Fan-foot	*Pechipogo strigilata*	2488	Na

Notes:
*1 - although Waved Carpet now no longer has UK BAP Priority Species status it is retained as a priority species in the region as it appears to occupy a different habitat in Herefordshire compared to elsewhere in the country (in Herefordshire it is associated with alders in dingle woodland compared with actively coppiced woods elsewhere).
*2 - Although Sword-grass has been recorded in the region these records are thought to represent migrants. The only remaining known breeding populations are in Scotland.

Other **high priority macro-moths** (identified by Dave Grundy) and **micro-moth**s (identified by Tony Simpson & Michael Harper) in the West Midlands region:

Common Name	Scientific Name	Log No	National Status
Small Eggar	*Eriogaster lanestris*	1633	Nb
Buttoned Snout	*Hypena rostralis*	2480	Nb

Scientific Name	Log No	National Status
Stigmella mespilicola	99a	None
Proutia betulina	188	Nb
Triaxomasia caprimulgella	226	Nb
Phyllonorycter distentella	346	pRDB3
Schiffermuellerina grandis	634	pRDB1
Esperia oliviella	650	Nb
Oecophora bractella	651	pRDB3
Caryocolum junctella	833	pRDB2
Dichomeris ustalella	864	pRDB1
Dystebenna stephensi	907	pRDB3

5.2 Location of High Priority Moths

The summary table below lists all the high priority moths and indicates the counties where there are historical records. If 'Yes' is listed this species is thought to be resident. If the status is different, this is indicated in the table.

Oecophora bractella by Dave Grundy

Common/ Scientific Name	Herefordshire	Staffordshire	Shropshire	Warwickshire	Birming-ham & Black Country	Worcestershire
L. capitella	**	?	-	1986*	-	-
N. fasciella	-	No	-	1956*	-	-
Goat Moth	-	**	-	-	-	?
Forester	-	No	Yes	Yes	-	-
N. picarella	-	No	-	-	-	-
P. sagitella	No	No	-	Yes	-	Yes
Welsh Clearwing	-	Yes	-	-	-	-
C. wockeella	-	No	-	-	-	-
C. vibicella	-	No	-	-	-	-
A. palpella	-	Yes	-	-	-	-
A. atomella	-	No	-	-	-	-
S. albipalpella	-	No	-	-	-	-
C. woodiana	Yes	No	-	-	-	Yes
G. pallifrontana	Yes	No	-	Yes (?)	-	Yes
A. funebris	-	Doubtful	-	-	-	-
S. hostilis	-	No	-	Yes	-	-
Dingy Mocha	-	No	?	-	-	-
False Mocha	-	-	-	Yes	-	-
Chalk Carpet	-	Yes (?)	-	Yes	-	-
Argent & Sable	Yes?	Yes	Yes	Yes (?)	-	Yes?
Pauper Pug	-	-	-	-	-	Yes
Waved Carpet	Yes	Doubtful	-	-	-	Yes
Drab Looper	Yes	Yes (in Wyre)	Yes	-	-	Yes
Barred Tooth-striped	Yes	No	?	-	-	No?
Narrow-bordered Bee Hawk	-	No	-	-	-	-
Lunar Yellow Underwing	-	No	No	-	-	-
Pale Shining Brown	-	No	-	-	-	-
Bordered Gothic	-	No	-	-	-	-
Silurian	Yes	No	-	-	-	-
Sword-grass	Record in 1989 but considered migrant.	Record in 1997	-	-	-	-
Orange Upperwing	-	No	No	-	-	-
White-spotted Pinion	-	Doubtful	-	-	-	?
Common Fan-foot	No	Yes	Yes	-	-	Yes

* Last record
** No recent records

Comments on other high priority macro and micro-moths in the region. Dave Grundy, Tony Simpson and Michael Harper, *pers. comm*. There are no action plans for these species at present.

Common/Scientific Name	Comment
Small Eggar	A moth which is rapidly declining nationally. It was last recorded in the region in 1991 until 2 records in 2008 (Pendock in Worcestershire and Ross in Herefordshire). It should certainly be the focus of further targeted survey work.
Buttoned Snout	A former UKBAP priority species just taken off the list, but should merit recording at a regional level. Known to be expanding its population in neighbouring Monmouthshire. There were larval records from Herefordshire in 2005 and 2007 plus 1 adult in Ross in 2008.
Stigmella mespilicola	In UK it has only been found on Great Doward and in Wyre Forest feeding on *Sorbus torminalis*, and also *S. aria* in Herefordshire.
Proutia betulina	Found in Monkwood in the past. No other recent UK records (it was found in south-east England). It is worth searching for this species at Monkwood again.
Phyllonorycter distentella	An Oak miner which was only ever recorded in Kent and Herefordshire. Last records were Haugh Wood in 1991, Wellington Wood 1994, Queen's Wood Kempley 1976 and Queen's Wood Dymock 1995.
Caryocolum junctella	The Wyre Forest records are the only UK records apart from a single record from Scotland. Feeds on *Stellaria graminea* in old meadows around the forest.
Dichomeris ustalella	Feeds on Small-leaved Lime at Shrawley Wood (together with Pauper Pug and the Pyralid *Salebriopsis albicilla*). It was the original and only UK site until a recent record in the southern Wye Valley.
Dystebenna stephensi	Found at Moccas Deer Park by Michael Harper. This is a very localised moth feeding in the bark of veteran Oaks. All the other records are South-east England e.g. Richmond Park.
Oecophora bractella	Dead wood species recorded at the Wyre Forest and Ribbesford Wood. A species where some habitat assessment would be useful to inform site management.
Esperia oliviella	Dead wood species recorded at the Wyre Forest and Ribbesford Wood. A species where some habitat assessment would be useful to inform site management.
Schiffermuellerina grandis	Dead wood species recorded at the Wyre Forest and Ribbesford Wood. A species where some habitat assessment would be useful to inform site management.

 Schiffermuellerina grandis by Dave Grundy

5.3 High Priority Moths - Species Accounts and Species Statements

Most of the information given below has been directly taken from species accounts in Waring's 1999 unpublished 'Review of Nationally Scarce and Threatened Macro-moths of Great Britain'. National Action Plans and Species Statements for some of the Priority Species can also be found in "Biodiversity: The UK Steering Group report Volume 2: Action Plans", "UK Biodiversity Group Tranche 2 Action Plans Volume IV - Invertebrates" and "Volume VI - terrestrial and freshwater species and habitats".

The list below indicates whether an **Action Plan** or **Species Statement** has been included here for high priority moths identified for the West Midlands Region. For all moths where the action is 'survey only' a species statement rather than an action plan has been included here.

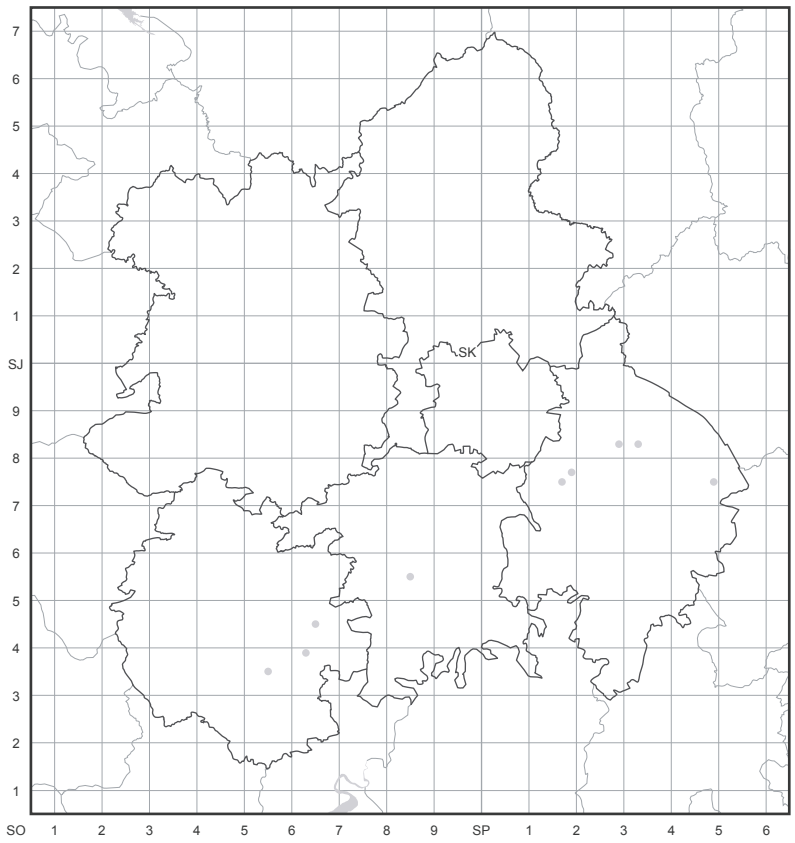
Common Name	Log Book Number	Action Plan	Species Statement
L. capitella	133	-	Yes
N. fasciella	144	-	Yes
C. cossus	162	Yes	-
A. statices	163	Yes	-
N. picarella	221	-	Yes
P. sagitella	366	Yes	-
Welsh Clearwing	376	Yes	-
C. wockeella	527	-	Yes
C. vibicella	538	-	Yes
A. palpella	653	-	Yes
A. atomella	703	-	Yes
S. albipalpella	848	-	Yes
C. woodiana	1066	Yes	-
G. pallifrontana	1243	-	Yes
A. funebris	1381	-	Yes
S. hostilis	1447	Yes	-
Dingy Mocha	1675	-	Yes
False Mocha	1679	-	Yes
Chalk Carpet	1731	Yes	-
Argent & Sable	1787	Yes	-
Pauper Pug	1824	Yes	-
Waved Carpet	1877	Yes	-
Drab Looper	1878	Yes	-
Barred Tooth-striped	1880	Yes	-
Narrow-bordered Bee Hawk	1982	-	Yes
Lunar Yellow Underwing	2108	-	Yes
Pale Shining Brown	2148	-	Yes
Bordered Gothic	2153	-	Yes
Silurian	2175	Yes	-
Sword-grass	2242	-	Yes
Orange Upperwing	2257	-	Yes
White-spotted Pinion	2317	-	Yes
Common Fan-foot	2488	Yes	-

Drab Looper by Kevin McGee

5.3.1 Currant Shoot Borer - *Lampronia capitella* - Species Statement

Red Data Book (RDB)
UK Biodiversity Action Plan: Priority Species

1. Current status
The larvae feed on the seeds of currant and Wild Gooseberry (*Ribes sp.*). Tenanted fruits appear prematurely ripe. In the following spring, it feeds in a bud, usually causing the death of the developing shoot. The adult flies in late May and June. It is found in gardens and also woodlands where the foodplants occur. It was widely distributed in southern England, the Midlands and East Anglia and also occurred in Glamorgan, Yorkshire and Aberdeenshire. Although there are recent records from all the above areas (except Yorkshire) this moth appears to be declining everywhere.



2. Current factors causing loss or decline - None known.

3. Current regional action - None.

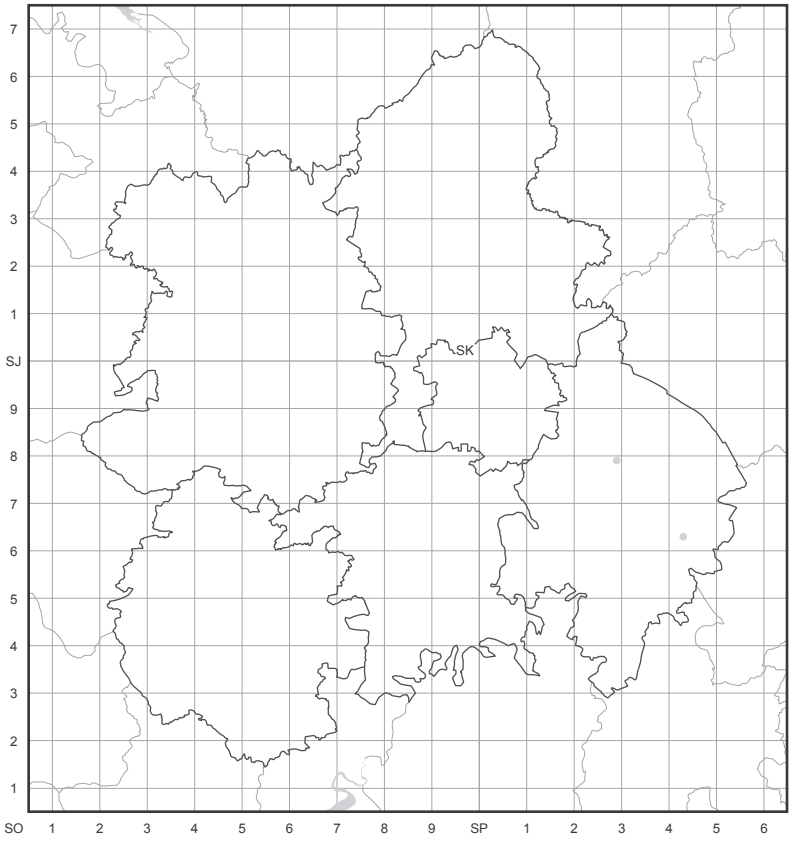
4. Regional objectives for the species - Increase awareness of this moth and its habitats.

5. Proposed action - Survey only.

5.3.2 *Nemophora fasciella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
Found on marshes, chalk grassland and brownfield sites where the larval foodplant, Black Horehound (*Balota nigra*), is found. The larva feeds initially on the seeds and then constructs a flat, fiddle-shaped case from leaf fragments and continues feeding on the lower and fallen leaves. The adult flies in sunshine in July around the foodplant and nectars on various plants. In the past it was known from a number of counties in the south from Devon to Kent, also in East Anglia, West Midlands, Cheshire, Yorkshire and Westmorland. Since 1969, it has only been recorded from Kent, Surrey, Essex, Hertfordshire, Middlesex and Suffolk.



2. Current factors causing loss or decline - None known.

3. Current regional action - None.

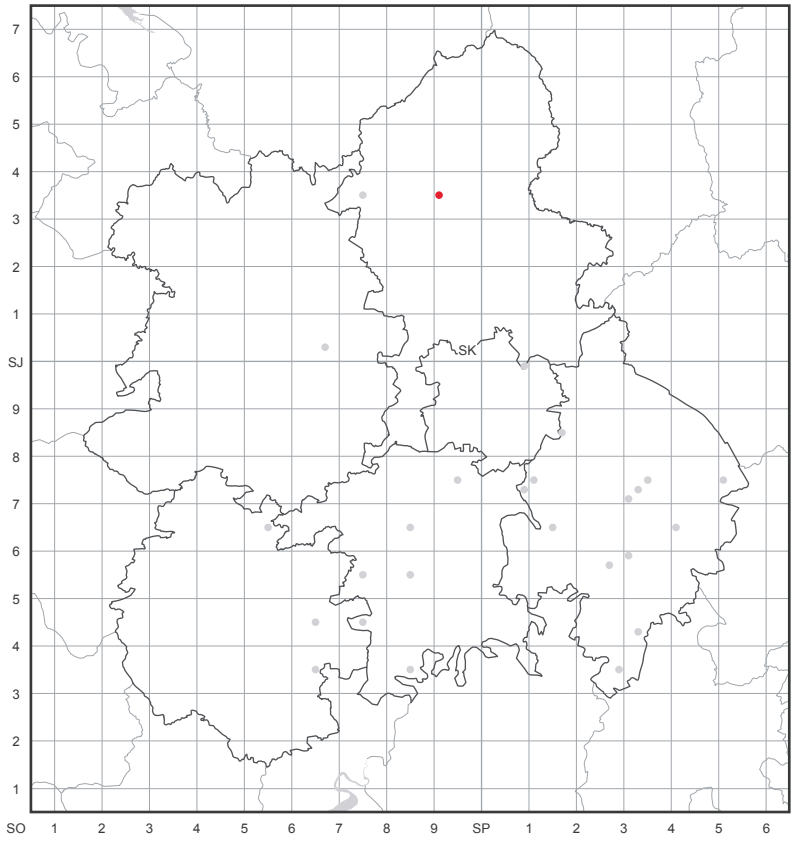
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only.

5.3.3 Goat Moth - *Cossus cossus* - Action Plan

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - A widespread moth in the UK which has declined in range in recent years and is now concentrated in eastern England, along the south coast from Devon to Kent and in the Thames Valley. There are scattered records elsewhere e.g. along the coasts of Wales and in north-west England. There are several relatively recent records from Staffordshire e.g. Ashley Heath in 1983 and Stone in 1997 and it is still thought to probably be a rare resident in Worcestershire (record for Catshill in 1978, see Harper & Simpson, 2002). The Staffordshire records are not currently on the West Midlands moth database so their locations do not appear on the map shown below.



Goat Moth larvae by Roy Leverton

Habitat - Larvae feed under the bark and in the heartwood of a variety of broadleaved trees including sallows, willows (*Salix spp.*) and poplars (*Populus sp.*) particularly those occurring in low-lying or damp situations (Waring &Townsend, 2003).

Threats
- Not known.

Survey - None targeted at this species.

Monitoring - None undertaken.

Management - Maintaining varied woodland with a good variety of age structure in the areas where it occurs is probably important.

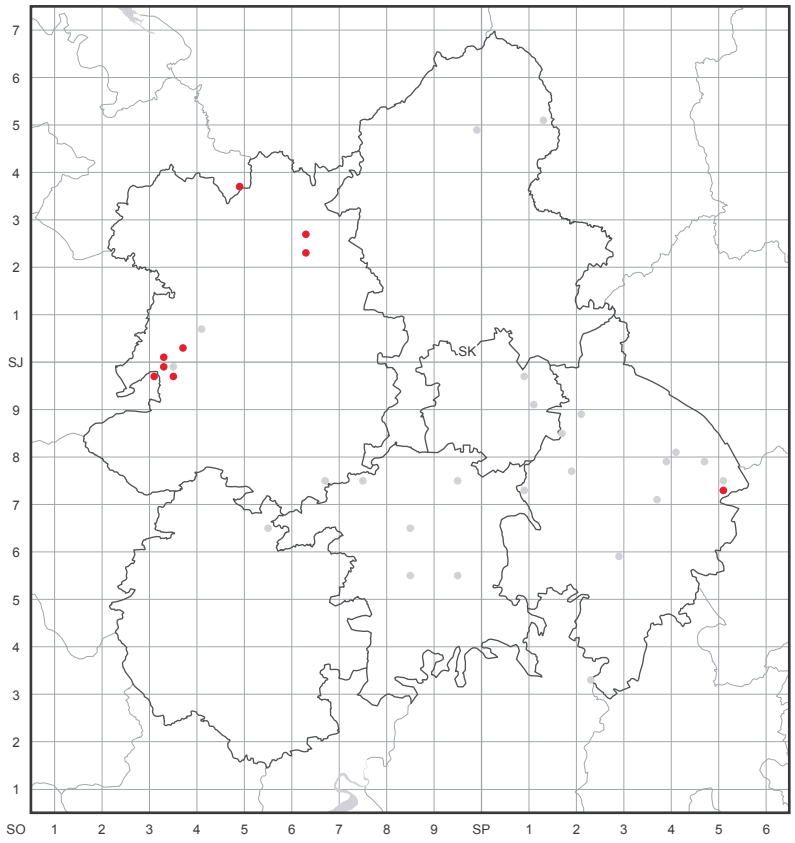
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Goat Moth.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. If a Goat moth colony is found, inform site managers about beneficial management for this species. Consider protecting infested trees.	If appropriate	Site managers
Research & Monitoring		
3. Target the three sites where it has been most recently recorded in the region to determine if it is still present.	By 2011	NE, FC, Wildlife Trusts, local volunteers
4. Encourage research to determine why particular trees are infected and any management that may encourage colonisation of new trees.	If appropriate	
5. Continue to be aware of the potential presence of this species elsewhere in the region.	Ongoing	NE, FC, Wildlife Trusts, local volunteers

5.3.4 Forester - *Adscita statices* - Action Plan

UK Local species
UK Biodiversity Action Plan: Priority Species

Distribution and Status - A widespread but local species in the UK which has been lost from many sites as a result of agricultural intensification. In the West Midlands region it has only recently been recorded in Warwickshire (where it is now only occurs on one site - Ashlawn Cutting) and Shropshire (where it is still relatively widespread).



Forester by Mark Parsons

Habitat - Larvae feed on Common Sorrel (*Rumex acetosa*) and Sheep's Sorrel (*Rumex acetosella*) growing in open habitats ranging from limestone grasslands to woodland rides and clearings (Waring & Townsend, 2003).

Threats
- Agricultural intensification.
- Natural succession.

Survey - Targeted survey of Shropshire sites in 2004 (Boardman, 2004a) suggested that the Forester moth is still locally common in the county.

Monitoring - The numbers of adults at Ashlawn Cutting are monitored regularly by Butterfly Conservation (Brown, 2006).

Management - None specifically aimed at this species in Shropshire but careful work is practiced at Ashlawn Cutting in Warwickshire to prevent scrub encroachment.

Publicity - Guided walks sometimes held at Ashlawn Cutting.

Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Forester.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Target at least five landowners and land managers with advice on beneficial management for this species so it can be maintained in the long term.	By 2011	NE, local volunteers
Research & Monitoring		
3. Set up a monitoring scheme to cover at least five sites in Shropshire and Warwickshire at least once every three years.	By 2011	NE, FC, Wildlife Trusts, local volunteers
4. Continue to survey for the presence of this species in other parts of the region.	Ongoing	NE, FC, Wildlife Trusts, local volunteers
Communication, Education and Publicity		
5. Increase awareness among the general public of the importance of this species in the region, how to record it and appropriate management by events, articles and press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, NE, FC, Wildlife Trusts

5.3.5 *Nemapogon picarella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The precise larval requirements are not known but the larva feeds on bracket fungi, especially *Piptoporus betulinus* and bores into the adjacent wood. It has also been recorded from *Inonotus radiatus* on Alder (*Alnus*), from *Trametes sp*. and from excrescences on Oak (*Quercus*). The adult flies in June and July. In the past it has been recorded from Monmouthshire, Staffordshire, Durham, Northumberland, Cumbria, Berwickshire, Perthshire, Aberdeenshire, Banffshire, Moray and Inverness-shire. Since 2000 it has been found at one site in Banffshire and one in Aberdeenshire. The last previous record was from Braemar in 1992.

Note: No map can currently be produced to show the location of any past records of this moth in the region as there are currently no records in the regional database (Nigel Stone, *pers. comm*.).

2. Current factors causing loss or decline - None known.

3. Current regional action - None.

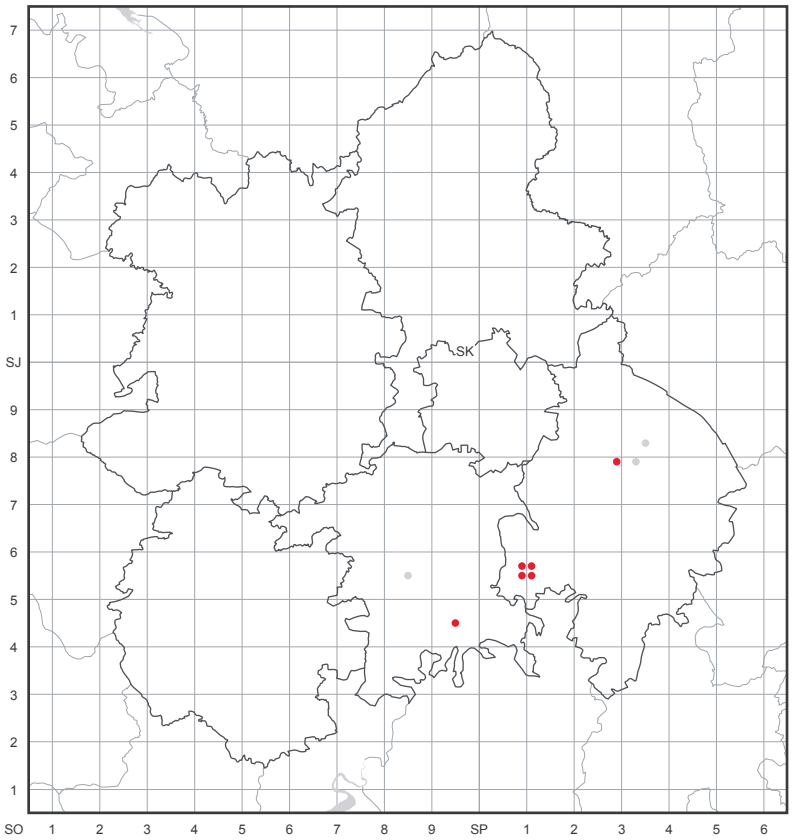
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only (previously known and other suitable sites) to determine current status.

5.3.6 *Phyllonorycter sagitella* - Action Plan

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

Distribution and Status -.In the past it has been recorded in Gloucestershire, Worcestershire and Denbighshire. It is currently now only known from three sites in Worcestershire (which are all close together in the same complex of woods) and one site in Warwickshire (Oversley Wood).



Habitat - The larva forms blotch mines in the leaves of Aspen (*Populus tremula*), perhaps particularly saplings, in June and again from August to October.

Threats

• Loss of habitat is unlikely as Aspen suckering means the foodplant is unlikely to be eradicated easily (Tony Simpson, *pers. comm.*).

Survey - Three adults found during a targeted survey of two Worcestershire sites in 2007 with sagitella mines also being found on one of these sites (Tony Simpson, *pers. comm.*). Surveys of leaf mines in 2005-2007 in Warwickshire show the species to be spread throughout the site (Nigel Stone, *pers. comm.*).

Monitoring - None as such but all the sites are being visited (but access off footpaths can be difficult). It is also a species which has boom and bust cycles so is difficult to monitor.

Sagitella leaf mines by David Green

Management - Ensure protection of Aspen at extant sites. *S. hostilis* (another UK BAP Priority Species) has the same foodplant (although possibly prefers a different growth form) and occurs at one of the sites.

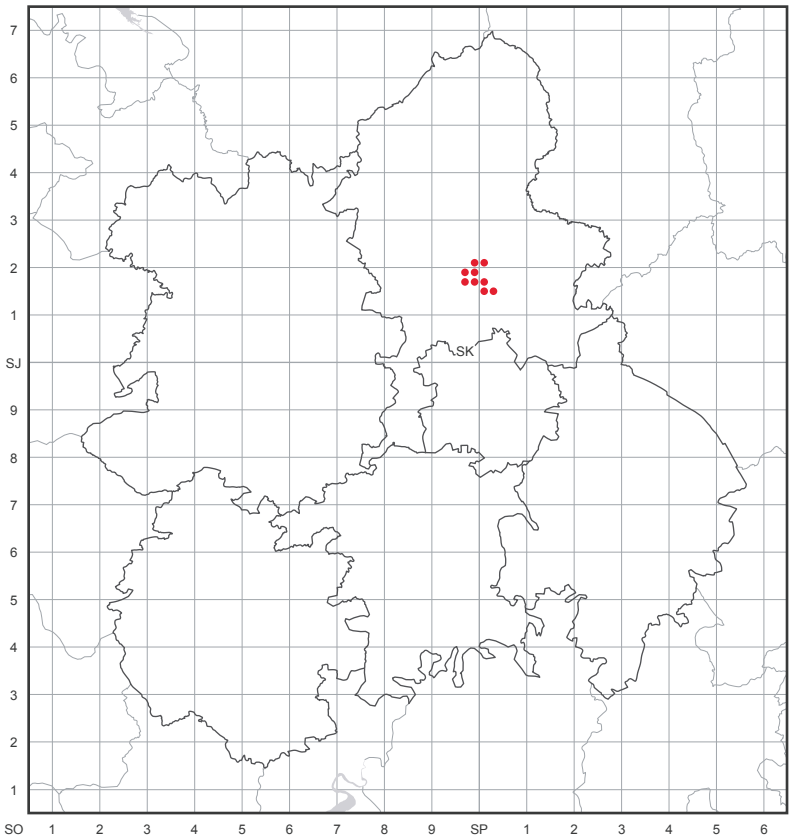
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as P. sagitella.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Target the land managers of the known sites with advice on beneficial management for this species.	By 2009	NE, local volunteers
Research & Monitoring		
3. Set up a monitoring scheme to cover all sites annually.	Annually	NE, FC, Wildlife Trusts, local volunteers
4. Continue to survey for the presence of this species especially in Worcestershire and Warwickshire.	Ongoing	NE, FC, Wildlife Trusts, local volunteers

5.3.7 Welsh Clearwing - *Synanthedon scoliaeformis* - Action Plan

Red Data Book (RDB)

Distribution and Status - A species which is found very locally in Wales, Scotland and the Irish Republic. Until 2005 this moth was presumed to be extinct in Staffordshire (where it was last recorded in 1920 when larvae were common, see Emley & Warren, 2001) when Andrew Graham discovered several old silver birches at Cannock Chase Country Park containing distinctive emergence holes made by the moth.



Welsh Clearwing by David Green

Habitat - Larvae feed on Downy Birch (*Betula pubescens*) and Silver Birch (*Betula pendula*) in open birch woodland and scrub on hillsides of wet acidic pasture and moorland (Waring & Townsend, 2003).

Threats

- Other conservation objectives for the area.

Survey - Survey work undertaken in the Cannock Chase area in 2006 discovered what may well be the largest colony of Welsh Clearwing in the British Isles with 218 tenanted trees being identified and 212 adults being seen (Green, 2006a). Further survey work in the Cannock Chase area in 2007 increased the area known to be occupied by this moth substantially as well as the number of tenanted trees (Green, 2008). It was also recorded nearby at Shugborough and in the Hednesford Hills in 2007 (Dave Grundy, *pers. comm.*).

Monitoring - A five year monitoring cycle at Cannock Chase was suggested in 2006 (Green, 2006a) repeating the 2006 survey of tenanted trees and using pheromone lures. A method for assessing the suitability of trees was developed on some Welsh sites in 2007 as well as a monitoring procedure for Welsh Clearwing being developed and applied on two sites (Graham, 2008).

Management - Three main actions suggested by Green (2006a) were a) continue to protect existing birches b) ensure long term continuity of mature birches and c) endeavour to increase the area of suitable habitat.

Publicity - The discovery of this large population in 2006 resulted in a lot of media interest and press coverage.

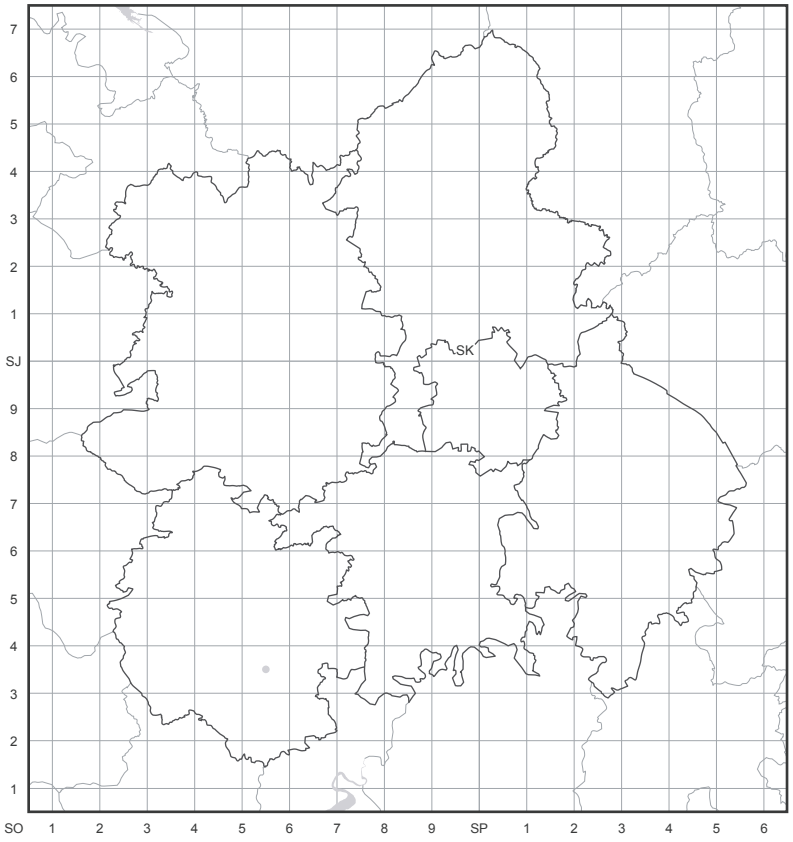
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote species such as the Welsh Clearwing.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Maintain liaison with the managers of sites in the Cannock Chase area to ensure they implement the actions suggested for the Welsh Clearwing.	Ongoing	SCC, NE, FC, Shugborough Estate, Cannock Chase District Council, local volunteers
Research & Monitoring		
3. Continue to undertake research work on this moth so more can be learnt about its habitat needs.	Ongoing	SCC, NE, FC, Shugborough Estate Wildlife Trusts, Cannock Chase District Council, local volunteers
4. Continue to survey for the presence of this species in other parts of the region.	Ongoing	SCC, NE, FC, Wildlife Trusts, local volunteers
5. Ensure this moth continues to be monitored in the Cannock Chase area	By 2011	SCC, NE, FC, Wildlife Trusts, local volunteers, Cannock Chase District Council
Communication, Education and Publicity		
6. Increase awareness among the general public of the importance of this species at Cannock Chase, how to record it and appropriate management by events, articles and press releases. Aim for at least 1 every three years.	By 2011	SCC, Local volunteers, NE, FC, Wildlife Trusts, Cannock Chase District Council

5.3.8 *Coleophora wockeella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva mines the leaves of Betony (*Stachys officinalis*) along the edges of woodland rides, from within a case formed from fragments of foodplant. It feeds from September to October and after hibernation from mid-April to the end of May. The spring feeding is easier to find. The adult flies in July and comes to light. There are historical records for this moth from Essex, Kent, Surrey, Sussex, Isle of Wight, Dorset, Gloucestershire and Herefordshire but now it is only known from two small areas of one site in Surrey and possibly one site in West Sussex.



2. Current factors causing loss or decline - None known

3. Current regional action - None.

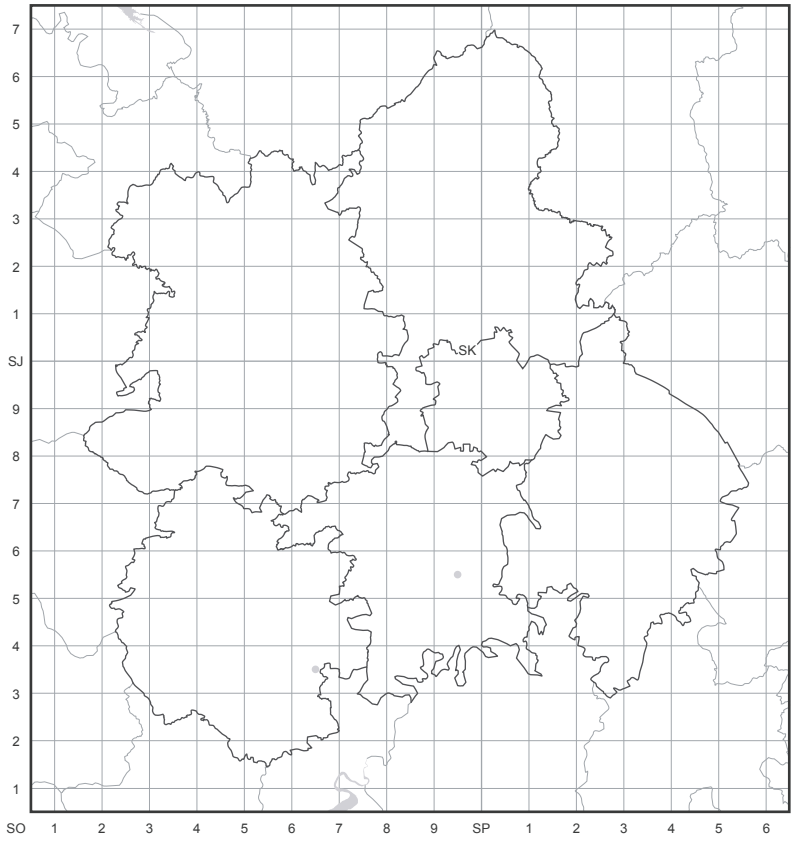
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status.

5.3.9 *Coleophora vibicella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva mines the leaves and also the flowers of Dyer's Greenweed (*Genista tinctoria*) growing in rough pastures and woodland rides, from within a silken case. The pre-hibernation feeding is undescribed and the case is best looked for in the spring through until June. The adult flies in late July and August. In the past it was recorded in Dorset, Hampshire, Isle of Wight, Sussex, Kent, Gloucestershire, Herefordshire and Worcestershire. It is now currently only known from single sites in Dorset, Hampshire and possibly West Sussex.



2. Current factors causing loss or decline - Possibly loss of foodplant.

3. Current regional action - None.

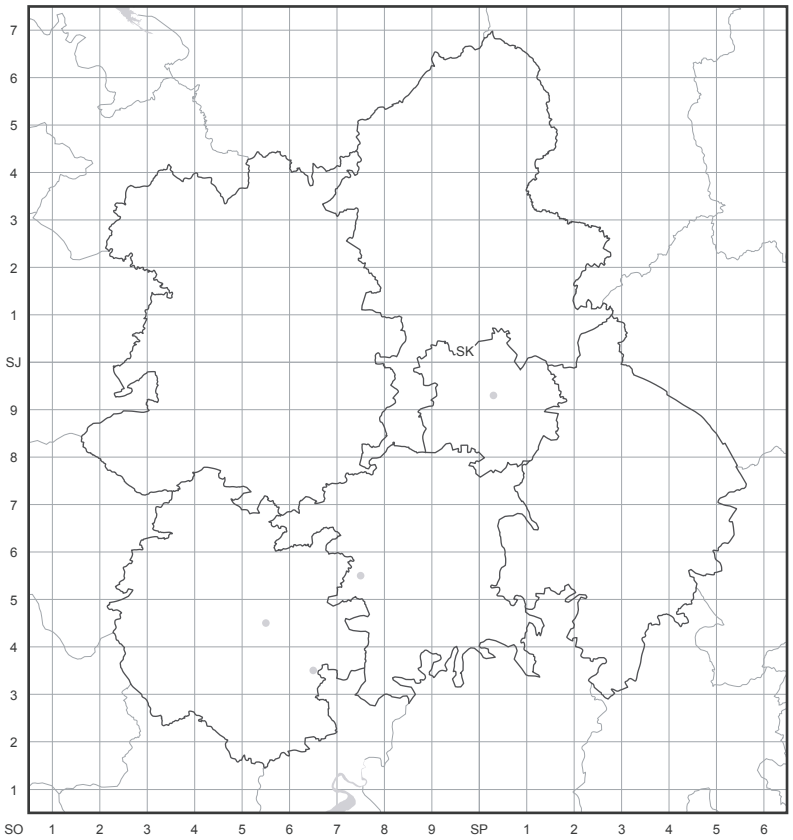
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status.

5.3.10 *Aplota palpella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva feeds in silken tubes amongst sparse growth of moss on the trunks of old trees growing in an open, non-woodland situation, possibly also on walls and rocks. Its presence is revealed by lines of fine-grained greyish frass mixed with silk on the surface of the moss. The adult flies in July and August and rests on the moss by day. It flies at night but is very reluctant to come to light. There are past records from Kent, Wiltshire, Hampshire, Dorset, Devon, Essex, Middlesex, Oxfordshire, Gloucestershire, Herefordshire, Worcestershire and Staffordshire. Since 1990 it has been recorded in Wiltshire, Dorset, Gloucestershire and Staffordshire, although many of these were just single individuals and may not indicate the presence of a colony.



2. Current factors causing loss or decline - None known

3. Current regional action - None.

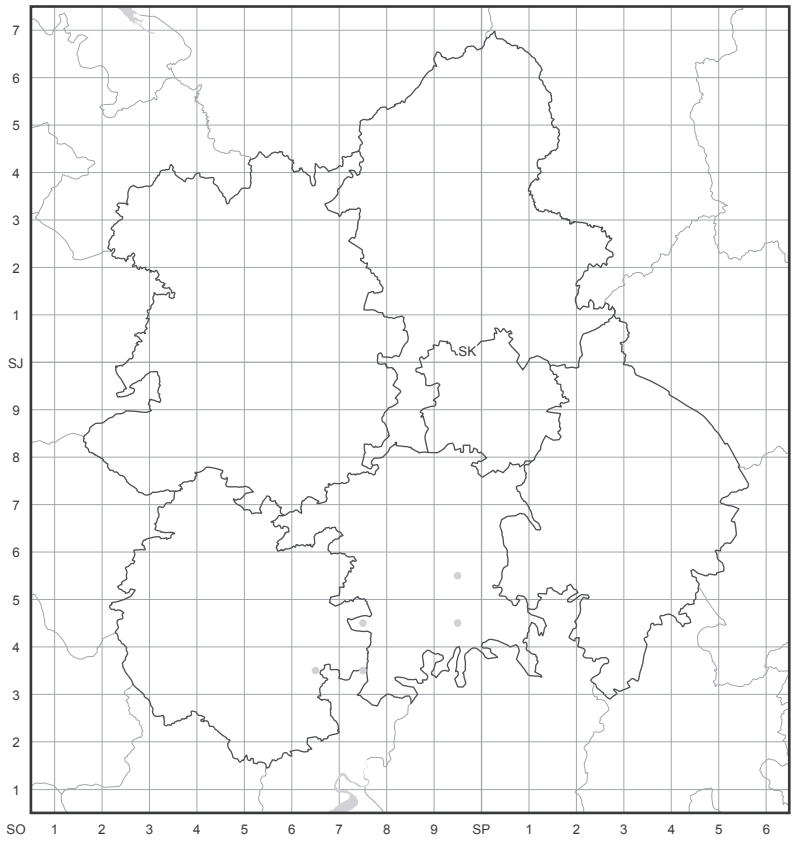
4. Regional objectives for the species - Increase awareness of possible presence.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status. If any colonies are located then the trees should be protected while further work is undertaken.

5.3.11 *Agonopterix atomella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva feeds on Dyer's Greenweed (*Genista tinctoria*) in leaves spun into a tube along the stem or in spun shoots during late May and June. The adult flies in July and August but is rarely seen. In the past there were records from Southern England from Dorset eastwards and north to Worcestershire and Cambridgeshire. Apparently absent from the north Midlands but recorded from Cheshire north to Northumberland. In Wales it has been recorded from Monmouthshire and Pembrokeshire. Since 1990 it has only been recorded from Sussex, Durham, Cumbria and Dorset.



2. Current factors causing loss or decline - None known

3. Current regional action - None.

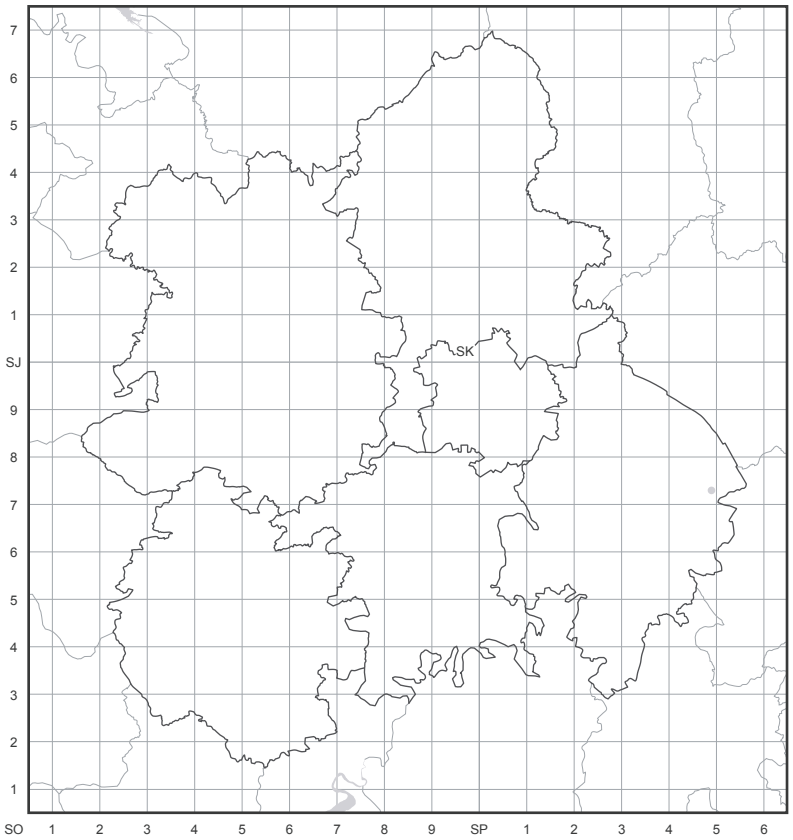
4. Regional objectives for the species - Increase awareness of possible presence.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status. If any colonies are located then the trees should be protected while further work is undertaken.

5.3.12 *Syncopacma albipalpella* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva feeds on Petty Whin (*Genista angelica*), spinning together leaves which it then mines, turning them bright yellow. Larvae occur from September to June but are probably best looked for in the spring. The adult flies in July. Formerly known with certainty from Hampshire, Sussex, Surrey, Essex, Hertfordshire, Norfolk, Yorkshire and Durham. There are unconfirmed records from Devon, Kent, Suffolk, Warwickshire and Lancashire. Only now known from a single site in Hertfordshire.



2. Current factors causing loss or decline - None known

3. Current regional action - None.

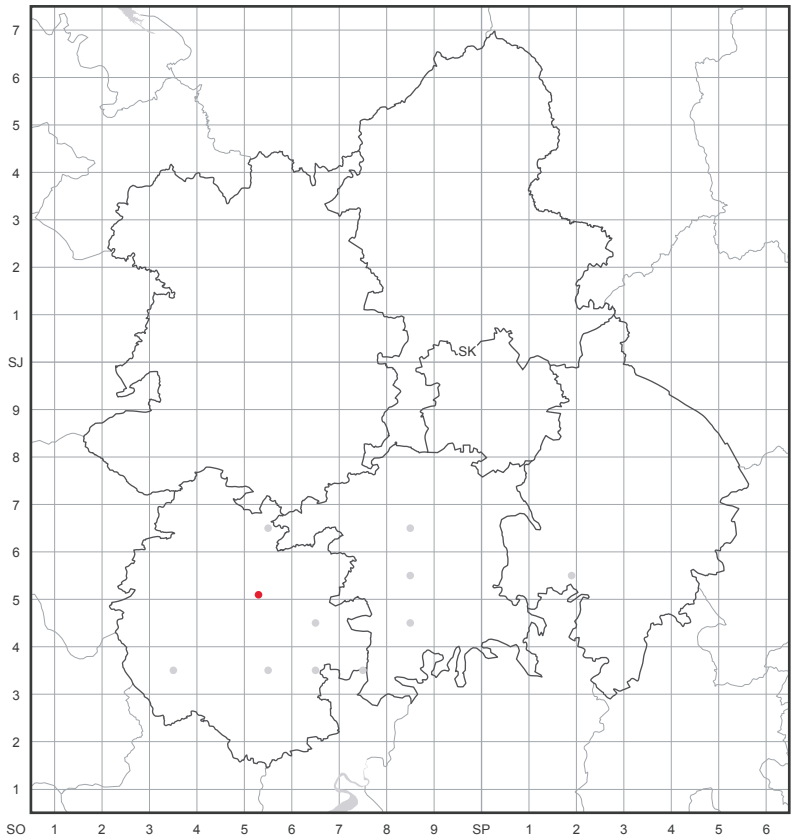
4. Regional objectives for the species - Increase awareness of possible presence.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status

5.3.13 *Celypha woodiana* - Action Plan

Red Data Book (RDB)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - In the past, this moth was known from the south-west Midlands and adjacent counties: Somerset, Gloucestershire, Herefordshire, Worcestershire, Warwickshire and Monmouthshire. Since 1990, it has only been known from 6 sites including 3 sites in Gloucestershire, 2 in Somerset and 1 in Herefordshire. There are also recent records from two Worcestershire sites (Tony Simpson, *pers. comm.*). These records are not currently on the West Midlands moth database and do not appear on the map shown below



Habitat - The larva mines the leaves of Mistletoe (*Viscum album*) from autumn until April or May. It is usually (or perhaps always) found in old apple orchards. The adult flies in July and August, resting on the trunks of apple trees during the day and flying at night when it comes to light.

Threats
- Destruction of old orchards
- Gathering of mistletoe

Survey - Some targeted survey of sites in Herefordshire and Worcestershire by county recorders (Tony Simpson and Michael Harper). In 2004, a Hereford Nature Trust led survey of 42 traditional orchards found 3 previously unknown sites for red-belted clearwing and one new site for C.woodiana.

Monitoring - None

Management - None specifically targeted at this species.

Publicity - Orchard surveys have become a higher priority in recent years. This survey effort is likely to increase as a result of traditional orchards being identified as a new UK BAP habitat in June 2007.

Actions and Targets

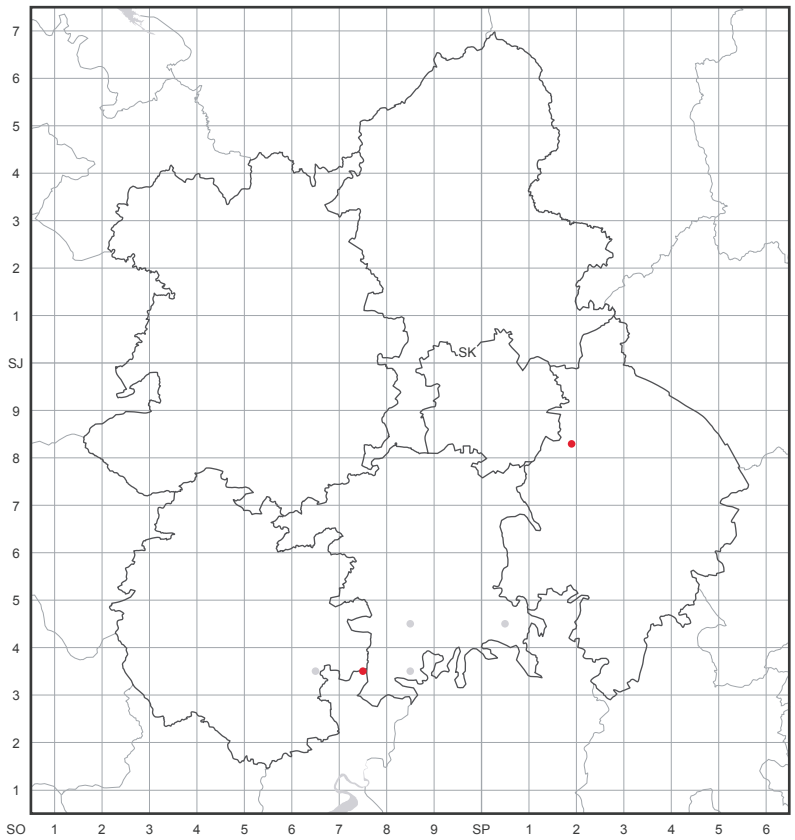
Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the C.woodiana.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Investigate the potential for agri-environment schemes to assist with the conservation of this moth.	By 2011	NE, local volunteers
3. Ensure the owner of the one known Herefordshire site (and the two Worcestershire sites where this moth has recently been recorded) is aware of the presence of this moth and its needs.	By 2009	
Research & Monitoring		
4. Encourage survey for the presence of this moth in other parts of Herefordshire as well as elsewhere in the region.	By 2011	NE, FC, Wildlife Trusts, local volunteers
Communication, Education and Publicity		
5. Raise the profile of this species with owners of orchards through the National Orchard Forum, PTES Traditional Orchard Project and other schemes.	By 2011	Local volunteers, NE, FC, Wildlife Trusts

 Celypha woodiana leaf mine by Mark Parsons

5.3.14 *Grapholita pallifrontana* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larvae feed in the seed pods of Wild Liquorice (*Astragalus glycyphyllos*) during July and August, a slight discoloration of the pod sometimes betrays the presence of the larva. The adults fly in June and July and have been recorded flying over Milk-vetch in afternoon sunshine. There are historical records for Wiltshire, Sussex, Kent, Surrey, Essex, Berkshire, Buckinghamshire, Oxfordshire, Suffolk, Cambridgeshire, Bedfordshire, Northants, Gloucestershire, Herefordshire and Worcestershire.
Since 1990 there are records from Wiltshire (although it is now thought to be extinct there), Essex, Bedfordshire, Northants and Gloucestershire. It was first recorded in Warwickshire in 2006 but this was a singleton record and the site needs to be checked (Nigel Stone, *pers. comm.*).



2. Current factors causing loss or decline - None known

3. Current regional action - None.

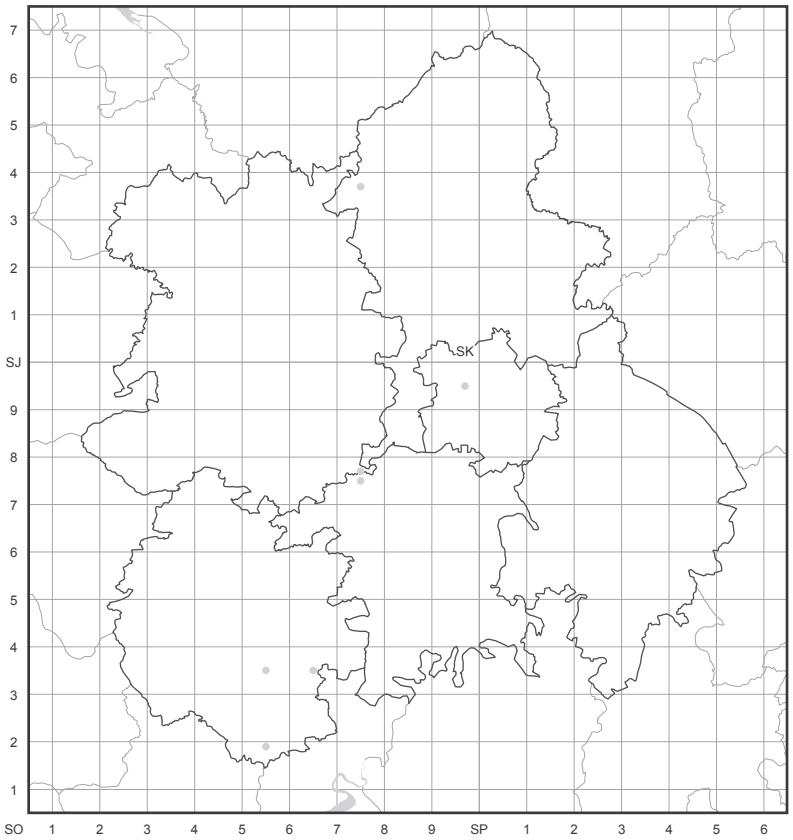
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status

5.3.15 *Anania funebris* - Species Statement

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

1. Current status
The larva feeds on the leaves and flowers of Goldenrod (*Solidago virgaurea*). The adult flies during the daytime from mid-May to early July. In the past, it was widely distributed throughout England, Wales and Scotland. Since 1990 it has only been recorded from Kent, East Sussex, Surrey, Glamorgan, Pembrokeshire, Lincolnshire and Lancashire.



2. Current factors causing loss or decline - None known

3. Current regional action - None.

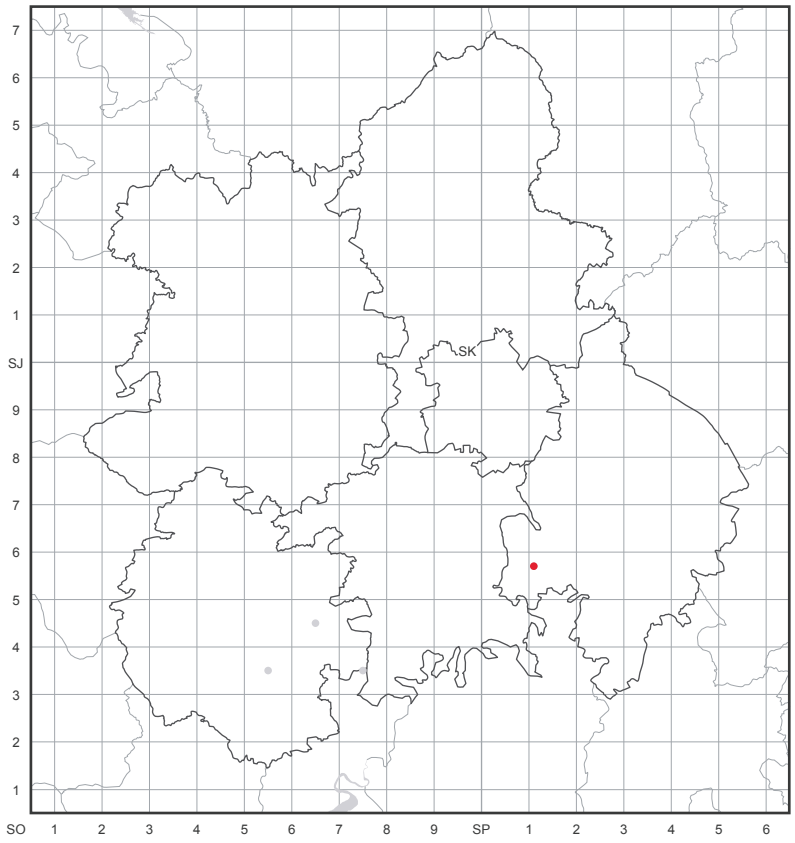
4. Regional objectives for the species - Increase awareness of the possible presence of this moth and its habitats.

5. Proposed action - Survey only (historical and other suitable sites) to determine current status

5.3.16 *Sciota hostilis* - Action Plan

Red Data Book (RDB) ■
UK Biodiversity Action Plan: Priority Species

Distribution and Status - There are historical records for this moth from Kent, Essex, Herefordshire, Worcestershire and Warwickshire. It is now thought to be restricted to one site in Warwickshire (and extinct on the Kent site, Dave Grundy, *pers. comm.*).



Habitat - The larva feeds on Aspen (*Populus tremula*). The adult flies in June and comes to light.

Threats
- Removal of aspen as part of forestry management.

Survey - Intermittent survey. Known to have been present on the Warwickshire site for some time. Two adults recorded in June 2004 but none since then. Targeted larval search in 2007 located four larvae (Dave Grundy, *pers. comm.*).

Monitoring - No regular monitoring for this species.

Management - The Warwickshire site is managed by the Forestry Commission who are aware of the presence of this moth and the need to retain aspen. As this site also supports *P.sagitella*, the presence of these two rare UK BAP moths makes this site of national importance. There has been some discussion on the merits of re-coppicing young Aspen here rather than leaving it. It is difficult to give precise management recommendations when the habitat requirements of the species are largely unknown. Woodland management here was looking good in 2007 (Dave Grundy, *pers. comm.*).

Publicity - None.

Sciota hostilis larvae by Dave Grundy

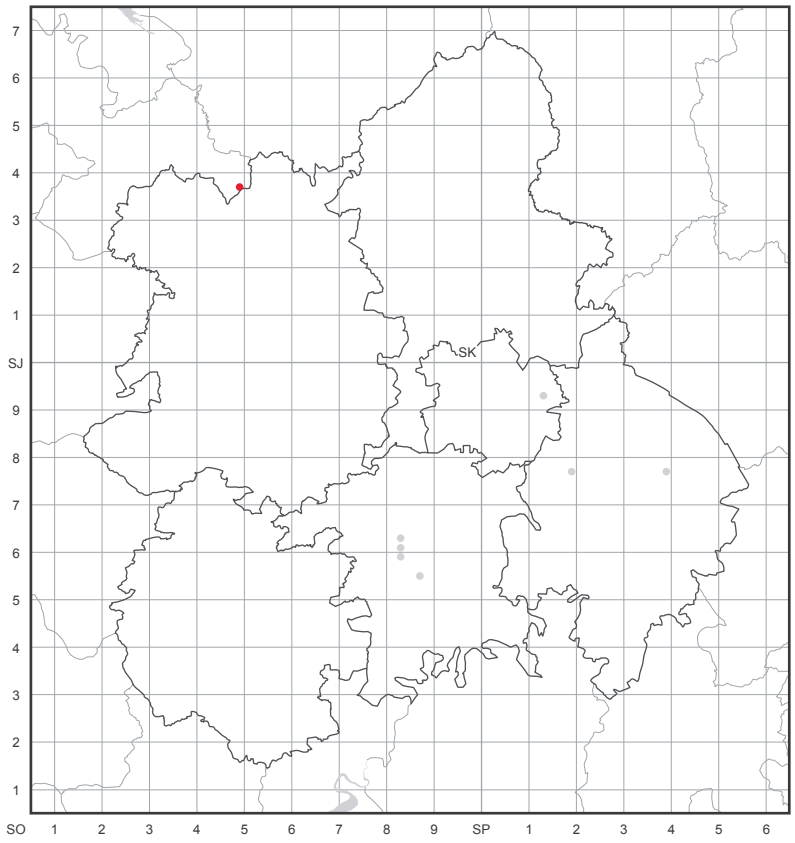
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the S. hostilis.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Ensure the managers of the one known Warwickshire site are aware of the presence of this moth and the need to retain aspen.	Ongoing	FC
Research & Monitoring		
3. Encourage survey for the presence of this moth in other parts of Warwickshire as well as elsewhere in the region.	By 2011	NE, FC, Wildlife Trusts, local volunteers
4. Set up a monitoring programme for this species so that the Warwickshire site is surveyed at least once every three years.	By 2011	FC, Wildlife Trusts, local volunteers
5. Undertake autecological studies to determine the precise requirements of this species.	By 2011	FC, NE, grant awarding bodies

5.3.17 Dingy Mocha - *Cyclophora pendularia* - Species Statement

Red Data Book (RDB)
UK Biodiversity Action Plan: Priority Species

1. Current status
A species of open damp heathland and grassland whose larvae feed on willows (*Salix spp.*). It is now confined to Dorset and western Hampshire where it occurs on the Purbeck heaths between Studland and Wareham, the Ringwood area of the New Forest and the Luscombe Valley nature reserve. There are old records from more extensive areas of the country e.g. Surrey, Sussex, Devon and South Wales. There were a small number of records from Whixall Moss during the early to mid 1990's (see Boardman, 2004b). A species factsheet was produced in 2005 (Wigglesworth, Parsons & Warren, 2005a).



2. Current factors causing loss or decline - Loss of habitat.

3. Current regional action - None.

4. Regional objectives for the species - Continue to consider the possible presence of this species at Whixall Moss (although the amount of willow close to the area where it was recorded has recently been significantly reduced, Peter Boardman, *pers. comm.*).

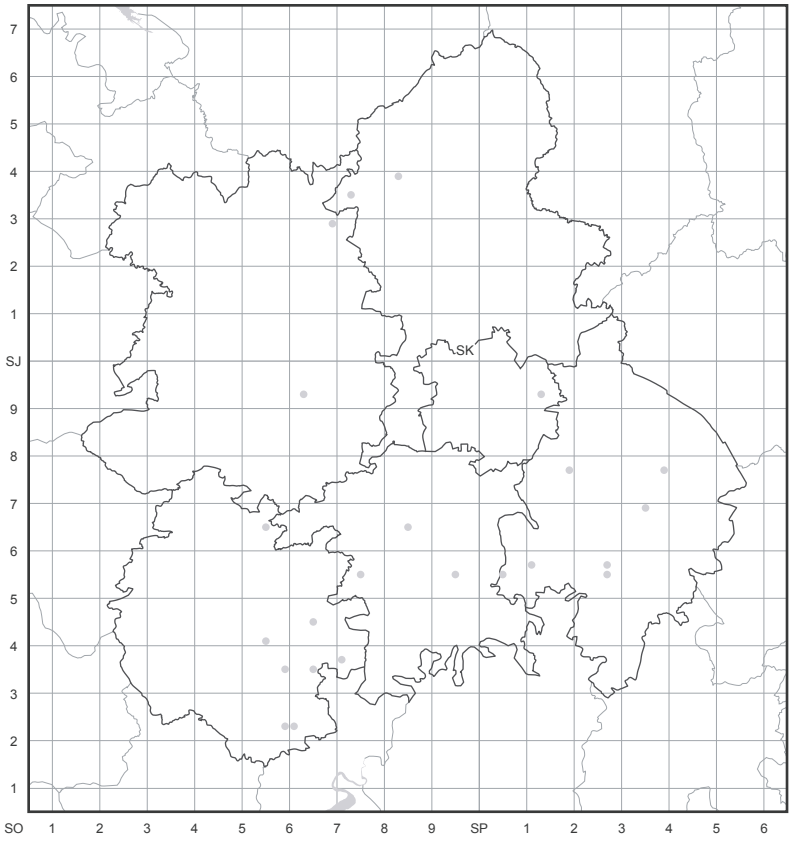
5. Proposed action - Survey only.

5.3.18 False Mocha - *Cyclophora porata* - Species Statement

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

1. Current status
The larvae feed on oak (*Quercus spp.*), seemingly preferring coppiced or scrub oaks in warm, sheltered locations. The adult flies in May and June, with a partial second generation in late August and September. It comes to light and occasionally sugar.

It used to be widely distributed in southern England and Wales. Since 1990 it has only been recorded in Warwickshire, Gloucestershire, Surrey, Essex, Hampshire, East Sussex, Suffolk, Hertfordshire, Buckinghamshire and Norfolk. The last Warwickshire records were from Weethley Wood in 1990 and Oversley Wood in 1992 (Brown, 2006).



2. Current factors causing loss or decline - Unknown.

3. Current regional action - Some moth survey of former sites in Warwickshire.

4. Regional objectives for the species - Continue to take the possible presence of this species into account when carrying out moth surveys in Warwickshire.

5. Proposed action - Survey only.

5.3.19 Chalk Carpet - *Scotopteryx bipunctaria cretata* - Action Plan

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - A very local species in Britain. It principally occurs on calcareous sites in southern England and along the coast of South Wales but can also be found elsewhere e.g. in north Derbyshire, Cumbria and North Wales. In the West Midlands, it has only recently been recorded in Warwickshire and Staffordshire (Brown, 2006). In Warwickshire it is a very local species which is now only present on two sites: Bishops Hill and Long Itchington Quarry (David Brown, *pers. comm.*) one of which is threatened by development (Brown, 2006). The most recent Staffordshire records are two for the Coombes Valley in 1971, one record for Ecton in 1984 and records for the Staffordshire side of Dovedale in 1985, 1986, 1989 and 1992 (Dave Emley, *pers. comm.*).

Habitat - Occurs on chalk and limestone grasslands particularly in areas that are short-grazed and have bare ground e.g. cliffs, quarries and embankments. The larvae feed on a number of plants including bird's-foot trefoil (*Lotus corniculatus*) and black medick (*Medicago lupulina*) at night (UK Biodiversity Action Plan, 1999).

Threats
- Natural succession
- over grazing
- increasing fragmentation and isolation of existing colonies
- loss of suitable habitat e.g. by development
- trampling and flattening of grassland (see Brown, 2004).

Survey - Regular survey of Warwickshire sites (see below).

Monitoring - All the Warwickshire sites receive at least one annual visit.

Management - There is currently no management taking place at any of the Warwickshire sites containing Chalk Carpet colonies, though informal disturbance at Bishops Hill and rabbit activity is helping to maintain patches of suitable habitat (from Brown, 2004).

Publicity - A species factsheet was produced in 2005 (Wigglesworth, Parsons & Warren, 2005b).

Policy - There is now an Action Plan for Chalk Carpet within the Warwickshire Biodiversity Action Plan (from which many of the actions listed below are taken).

Chalk Carpet by Dan Hoare

Actions and Targets

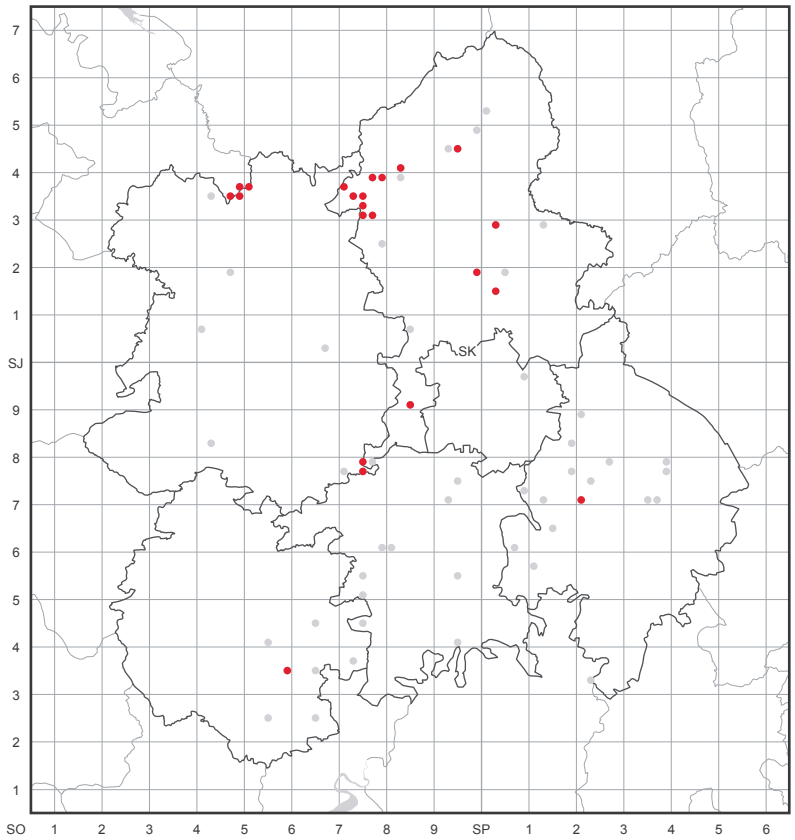
Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Chalk Carpet.	Ongoing	Local Authorities, Wildlife Trusts, Warwickshire Museum
Species Safeguard and Management		
2. Encourage the protection of calcareous grassland and post-industrial sites where chalk carpet colonies occur.	Ongoing	WWT, NE
3. Encourage the protection and appropriate management of calcareous grassland and former industrial sites which could be new sites for Chalk Carpet.	By 2011	Local Authorities, WWT, NE etc
4. Continue to undertake liaison with site managers to facilitate appropriate management for this species.	Ongoing	Local Authorities, WWT, NE etc
Research & Monitoring		
5. Survey former locations where current status of the Chalk Carpet is not clear (e.g. In Staffordshire* and Warwickshire).	By 2011	NE, WTs, local volunteers
6. Continue to monitor key sites to identify any changes in the distribution and status of this species.	Ongoing	Wildlife Trusts, local volunteers etc.

*It is imperative that the Dovedale area on the border of Staffordshire and Derbyshire is included in this survey.

5.3.20 Argent & Sable - *Rheumaptera hastata hastata* - Action Plan

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - Occurs throughout most of England but is thinly scattered. Within the West Midlands region it is currently strongest in Shropshire and Staffordshire although it used to be more widespread from the south of the region.



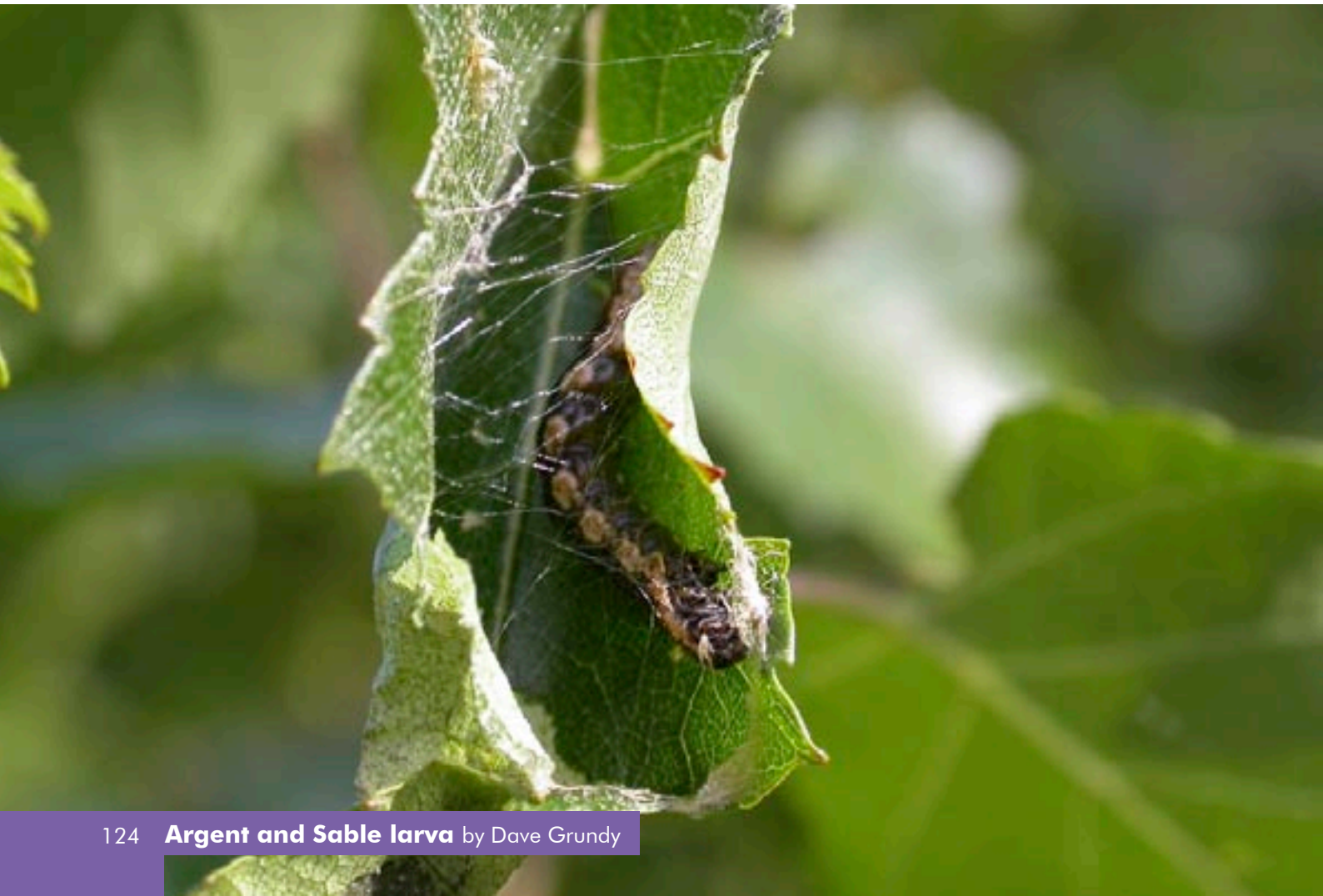
Argent and Sable by Dave Grundy

Habitat - In Britain, this species breeds in woodlands with birch re-growth and in open moorland and on bogs, particularly those at high altitudes. Birch (*Betula pendula*) and bog myrtle (*Myrica gale*) are two larval foodplants (UK Biodiversity Action Plan, 1999). This moth was also found to be feeding on Grey Willow (Salix cinerea) at two sites in Staffordshire in 2005 (Grundy 2005a) and Downy Birch (*Betula pubescens*).

Threats

- Changes in woodland management and the lack of open areas and young birch.

Survey - Work carried out at Haugh Wood in Herefordshire 2002 (Harper, 2002) resulted in national management guidelines being produced (Green, 2003). Further survey also took place at Haugh Wood in 2003 (with support from the Herefordshire Biodiversity Partnership) when one or two adults were seen and one empty larva spinning was found (Bradley, 2003), and in 2004 when only one adult was seen (Kate Wollen, *pers. comm.*). There have been no records for this moth from Haugh Wood (or any other Herefordshire site) since 2004. Survey work at Hay Wood in Warwickshire (with funding from FC) was unsuccessful in 2003, 2004 and 2005 but one was seen there in 2006 (David Brown, *pers. comm.*). In Shropshire, the picture is more encouraging with adults first being recorded on two sites in 2003 (Boardman, 2003) and in good numbers more regularly since then (Boardman, 2005, 2007). English Nature provided funding for targeted survey work in the Coombes and Churnet Valley areas of Staffordshire in 2003. Sadly none were seen here in 2003 (Grundy, 2003a) or in 2004 (James Hill, *pers. comm.*). However, Argent & Sable has now been recorded in good numbers in the Staffordshire 'Woodland quarter' during 2005-06 (Grundy, 2005a, 2007a) and also seen, after a 25 year absence in 2007 at Cresswell Piece (John Bryan, *pers. comm.*). Results from Staffordshire in 2007 were more depressing (Grundy, in prep.) possibly as a result of the prolonged poor summer weather. Survey of Cannock Chase for this moth was unsuccessful in 2006 (Green, 2006b) but successful in 2007 (Green, 2008). Targeted survey of the Wyre Forest from 2002-2004 has produced no Argent & Sable sightings at all (see e.g. Grundy, 2003b) with the last record here being in 2000 (Grundy, 2006a).



 Argent and Sable larva by Dave Grundy

Monitoring - Several key sites visited on an annual basis for the past couple of years to look for both adults and larval habitats (Boardman, 2005, 2007; Grundy, 2005a, 2007a, in prep.).

Management - A number of woodland sites in Shropshire and Staffordshire are currently being managed to benefit this species. The aim should be to provide a continuous supply of small birch (<2m) in sunny conditions. This can be achieved by cutting patches on rotation and allowing natural regeneration and seedling growth. Short rotation coppice of birch (e.g. 5-10 years) also provides ideal breeding conditions for this species.

Publicity - A species factsheet on the Argent & Sable has been produced (Wigglesworth, Parsons & Warren, 2005c).

Policy - There is now an Action Plan for Argent & Sable within the Warwickshire Biodiversity Action Plan, Shropshire Biodiversity Action Plan and the Herefordshire Biodiversity Action Plan.

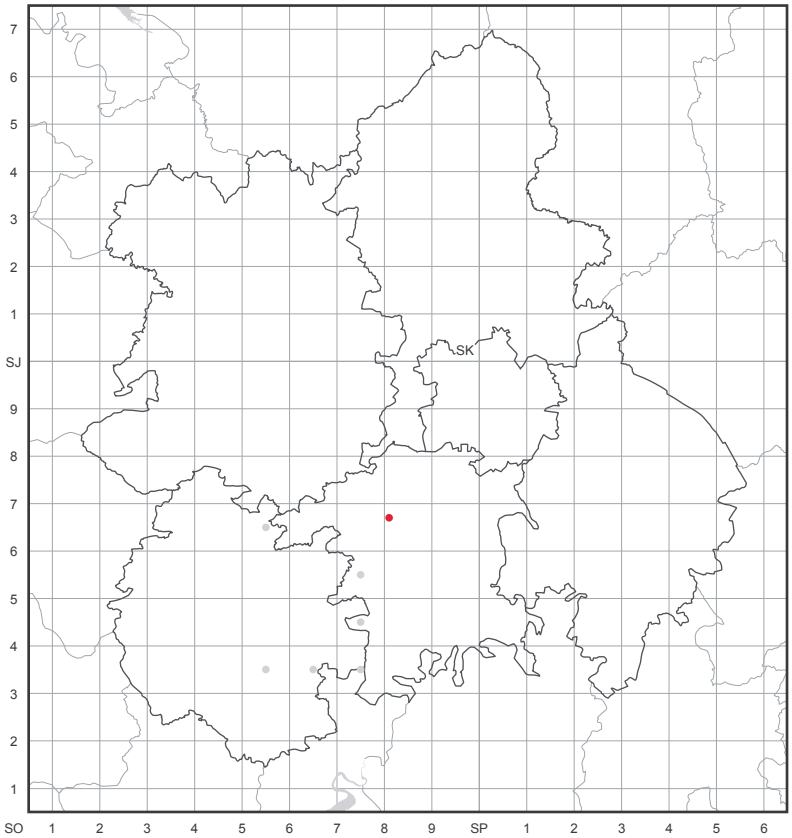
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Argent and Sable.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard		
2. Continue to provide feedback to the managers of known sites to facilitate appropriate management for this species.	Ongoing	Local volunteers, FC, Wildlife Trusts, NE
3. Encourage the protection and appropriate management of both existing sites and sites which could be colonised by this species.		
Research & Monitoring		
4. Monitor at least four sites annually (by both adult and larval searches) to identify any changes in the distribution and status of this species.	By 2011	Local volunteers, FC, Wildlife Trusts, NE, Leverhulme Estate
5. Survey of at least two more historical sites for this species in the region giving priority to Staffordshire.	By 2011	Local volunteers, FC, Wildlife Trusts, NE
6. Continue ecological research aimed at informing management advice	Ongoing	Local volunteers, FC, Private landowners, Wildlife Trusts, NE
Communication, Education and Publicity		
7. Increase awareness among the general public of the importance of this species in the region, how to record it and appropriate management by events, articles and press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, NE, Wildlife Trusts

5.3.21 Pauper Pug - *Eupithecia egenaria* - Action Plan

Red Data Book (RDB) ■

Distribution and Status - Only sporadic records of this moth from a small number of areas in the country. It is known from the Wye Valley in Monmouthshire and Gloucestershire, the Thetford area, several sites in Suffolk, Bardney in Lincolnshire and a few others (Waring & Townsend, 2003). In the West Midlands it is known from Shrawley Wood, Worcestershire where it was first recorded in 2000.



Habitat - The larvae feed on the flowers of lime (*Tilia spp.*) with small-leaved lime being the main foodplant at a number of sites. The adult flies in May and June and comes to light.

Threats
- Loss of lime due to felling or disease.

Survey - Shrawley Wood has not regularly been visited by moth recorders (not since 2003) but it still should be there (Dave Grundy, *pers. comm.*).

Monitoring - No regular monitoring for this species.

Management - It is thought that larvae feed on small-leaved lime at Shrawley Wood (together with *Dichomeris ustalella* and the Pyralid *Salebriopsis albicilla*).

Publicity - None.

Salebriopsis albicilla often occurs at the same sites as the Pauper Pug by Jeff Rush

Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote species such as E.egenaria.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Ensure the managers of the one known Worcestershire site are aware of the presence of this moth and the need to retain small-leaved lime.	Ongoing	FC
Research & Monitoring		
3. Encourage survey for the presence of this moth in other parts of Worcestershire as well as elsewhere in the region.	By 2011	NE, FC, Wildlife Trusts, local volunteers
4. Set up a monitoring programme so that the Worcestershire site is surveyed at least once every three years.	By 2011	FC, Wildlife Trusts, local volunteers

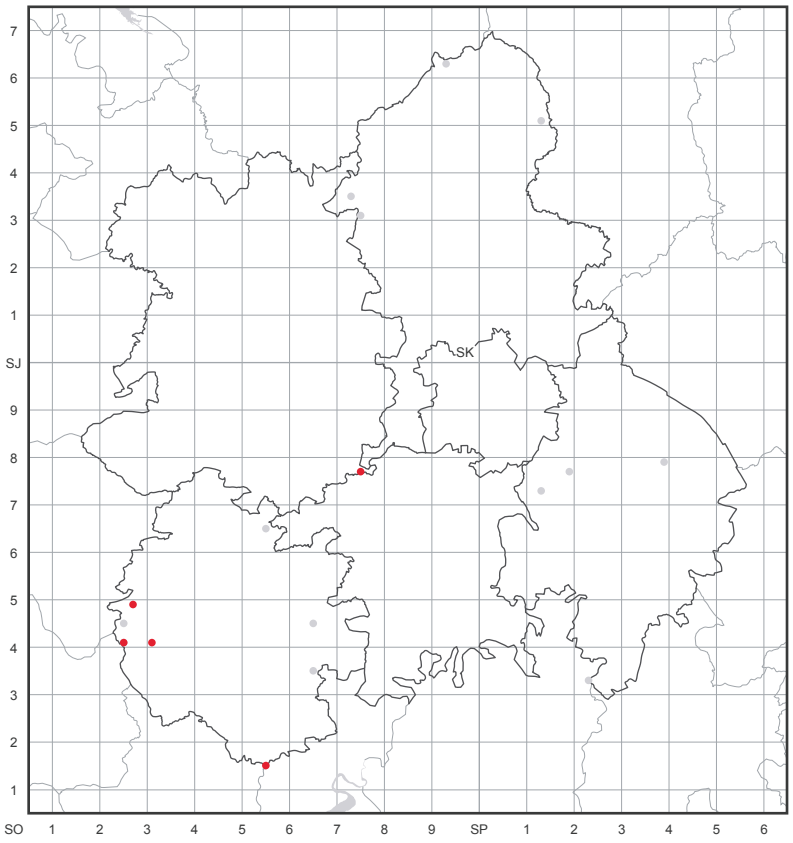
Pauper Pug by Jeff Rush

5.3.22 Waved Carpet - *Hydrelia sylvata* - Action Plan

Nationally Scarce - Notable B (Nb)

Distribution and Status - A very restricted species which is largely confined to five areas of Britain. These areas include Devon, Cornwall Gloucestershire and Monmouthshire, and a scattering of records from south-west Wales. It has recently been recorded from a number of sites in Herefordshire including Great Doward (in 1995), Clifford Church (in 1992) and Cusop Dingle (in 1996). One was recorded in the the Wyre Forest in 2006 but there have been no records since then.

Good numbers of Waved Carpet were also reported from Wales in 2003 (Hoare, Davis, Parsons & Bourn, 2004) with records being received from Pembrokeshire, Carmarthen, Glamorgan and Monmouthshire.



Habitat - Often occurs in coppiced woods with a history of continuous active coppice. Larval foodplants include Alder (*Alnus glutinosa*), Birch (*Betula spp.*) and Sallow (*Salix spp.*). In Herefordshire it is associated with Alders in dingle woodland.

Threats
- Changes in woodland management.

Survey - No specific surveys have been undertaken for this species in the region.

Monitoring - There is currently no specific monitoring undertaken for this species in the region.

Management - Further research to identify the most appropriate woodland management regimes for this species is needed in Herefordshire before management suggestions can be made. Studies to investigate the habitat requirements of this species in West Sussex have posed as many questions as they have answered (Davis, Green, Parsons & Bourn, 2003).

Publicity - A species factsheet was produced in 2005 (Wigglesworth, Parsons & Warren, 2005d).

Waved Carpet by David Green

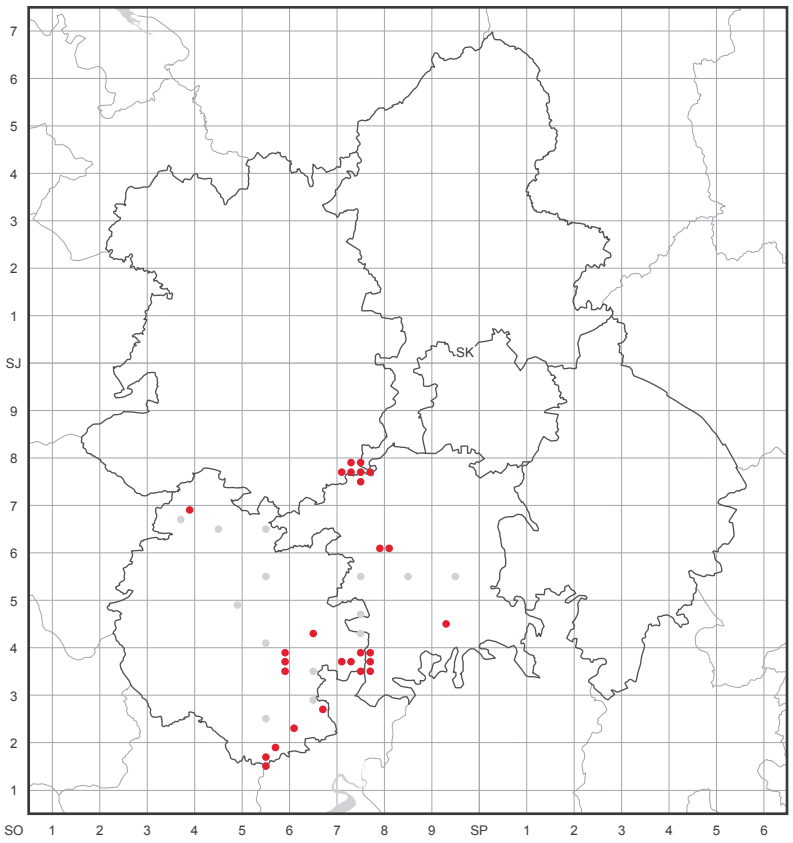
Actions and Targets

Action	BC's Targets	Possible Partners
Site/Species Safeguard		
1. Encourage the protection and appropriate management of dingle woodlands which are thought to support this species.	Ongoing	Local Authorities, NE, FC, Wildlife Trusts, etc
2. Look at other unoccupied sites in this part of Herefordshire to see if there is the possibility of increasing the number of Waved Carpet colonies.	By 2011	Local Authorities, NE, FC, Wildlife Trusts, etc
Research & Monitoring		
3. Re-survey of all four Herefordshire sites where this species has recently been recorded to determine if it is still present.	By 2011	Local volunteers, NE, HNT
4. Survey of at least four additional sites in the vicinity of these former Herefordshire sites.	By 2011	NE, local volunteers, HNT
5. Support ecological research into the habitat requirements of this species in Herefordshire so that management recommendations for any site supporting this species can be made.	By 2011	NE, other grant awarding bodies

5.3.23 Drab Looper - *Minoa murinata* - Action Plan

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - A species which has two main centres of distribution in Britain. The woods of central southern England (Hants., Wilts., Berks. and West Sussex) and woods on the border of England and Wales (from Gloucestershire and Monmouthshire northwards through Herefordshire and Worcestershire). There are recent records from a number of counties in the region including Herefordshire (e.g. Ledbury, Great Doward, and Haugh Wood), Shropshire (Wyre Forest) and Worcestershire (e.g. Wyre Forest and Monkwood).



Drab Looper by Rosemary Winnall

Habitat - Associated with areas of recent felling and coppicing in woodland where larvae feed on wood spurge (*Euphorbia amygdaloides*) and prefer the flowers and floral leaves of plants growing in full sun (UK Biodiversity Action Plan, 1999).

Threats
• Changes in woodland management. Succession and shading of the larval foodplant.

Survey - Targeted survey of the Wyre Forest for this moth annually since 2003 (Grundy, 2003b, 2005b, 2006b, 2007b, 2008). This moth has recently only been seen in low numbers at the Wyre Forest until 2007 when much higher numbers were recorded (25 in total compared to a maximum 9 seen in previous years). These higher numbers were a result of the forest also being surveyed in late July compared with past survey restricted to the expected flight period of late May/June (Grundy, 2008). Specific survey for Drab Looper at Monkwood in Worcestershire (Gregory, 2004) to establish a baseline for future monitoring. Survey of the Malvern Hills in 2007 recorded 14 adults at four sites with wood spurge also being recorded at four other localities (Clarke & Green, 2008).

Monitoring - The work undertaken at Monkwood in 2004 consisted of mapping all Drab Looper encountered by walking a set route through the wood (tapping wood spurge to encourage flight). The maximum number recorded here was 13 with numbers being higher than they were in 2003 (Gregory, 2004). Numbers of wood spurge plants have been counted in two cleared areas of the Wyre Forest since 2005 (Grundy, 2008). These two areas held the largest known concentrations of wood spurge plants in the forest in 2005 and within two years had lost almost all plants (Grundy, 2008).

Management - This species can become numerous in open sunny conditions as wood spurge is a perennial which often grows up abundantly following coppicing and other clearance of woodland (which should be done on rotation to benefit this species). It will persist in dwindling numbers for some years as open sites in woodlands become overgrown and shaded. Some experimental stripping of vegetation around large wood spurge blocks to encourage wood spurge germination has been tried at the Wyre Forest but has so far been unsuccessful. Some work is also currently underway to try to propagate wood spurge plants from Wyre Forest seed (Grundy, 2008). The finding of Drab Looper at the Wyre Forest in late July also poses the question of what the larvae are feeding on as wood spurge has died back by then (Grundy, 2008).

Publicity - A species factsheet on Drab Looper has been produced (Parsons & Thomas, 2006).

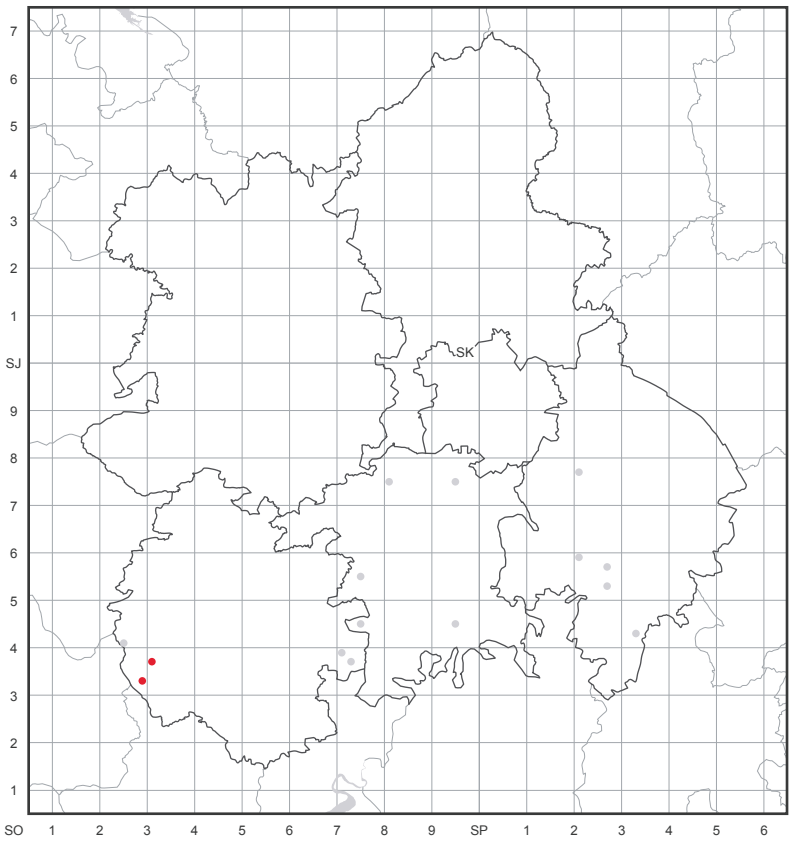
Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Drab Looper.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Continue to undertake liaison with land managers to facilitate appropriate management for Drab Looper on sites where it occurs.	Ongoing	Local volunteers, FC, NE, MHC, WWT
3. Look for opportunities to increase the habitat available for this species and the number of occupied sites.	By 2011	Local volunteers, FC, NE, MHC, WWT
Research & Monitoring		
4. Monitor adult numbers at five key sites in the region.	By 2011	Local volunteers, FC, NE, MHC, WWT
5. Encourage research into the germination of wood spurge to see if there is the potential to increase its abundance on occupied and unoccupied sites.	By 2011	Local volunteers, FC, NE
Communication, Education and Publicity		
6. Increase awareness by events, articles and press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, NE, Wildlife Trusts

5.3.24 Barred Tooth-striped - *Trichopteryx polycommata* - Action Plan

Nationally Scarce - Notable A (Na)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - In Britain this is a widespread but local species which has declined for unknown reasons. Although it is strongest in southern England e.g. on the chalk of Dorset, northern Hampshire and Wiltshire, there are scattered records elsewhere e.g. from Somerset and Lancashire in 2003 (Hoare, Davis, Parsons & Bourn, 2004). In the West Midlands it has only been consistently recently recorded in Herefordshire and Worcestershire. There were two records for Herefordshire in 2007 as well as an unconfirmed record for south Worcestershire from Dave Grundy.



Habitat - Larvae feed on wild privet (*Ligustrum vulgare*) although Ash (*Fraxinus excelsior*) may be an alternative foodplant (UK Biodiversity Action Plan, 1999). Barred Tooth-striped can be found in open scrub (especially on chalk downs) but can also exist in hedgerows, open woodland, rides and edges of woods.

Threats
• Agricultural intensification and inappropriate management (e.g. removal of foodplant during ride widening operations on woodland sites). Scrub clearance is also a potential threat.

Survey - It was not found during targeted surveys in several parts of the region in 2004.

Monitoring - There is currently no specific monitoring undertaken for this species in the region.

Management - Ensure that good bushy growths of privet continue to thrive in a range of conditions. In wooded areas, the mechanical clearing of the scrub edges of rides should be avoided. Recent observations on larvae have found the majority of larvae and feeding damage to be low down on wild privet (usually below 25cm) with most of the feeding damage being found on the southern or south-

western side of bushes growing in sheltered situations in full sunshine (Hoare, Davis, Parsons & Bourn, 2004).

Publicity - A species factsheet on Barred Tooth-striped has been produced (Wigglesworth, Parsons & Warren, 2005e).

Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Barred Tooth-striped.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Safeguard & Management		
2. Liaison with site managers to make them more aware of the potential presence of this species and to facilitate appropriate management.	By 2011	NE, FC, Local volunteers
Research & Monitoring		
3. Set up a monitoring programme on the two Herefordshire sites where this species has recently been recorded. This could involve a torchlight survey from mid-March and/or beating for larvae in May.	By 2011	NE, FC, local volunteers
4. Survey at least five other potential sites for this species in Herefordshire to determine if it is present.	By 2011	NE, FC, local volunteers
5. Support further ecological research into the habitat requirements of this species so it can more easily be maintained in the long term.	By 2011	NE, other grant awarding bodies

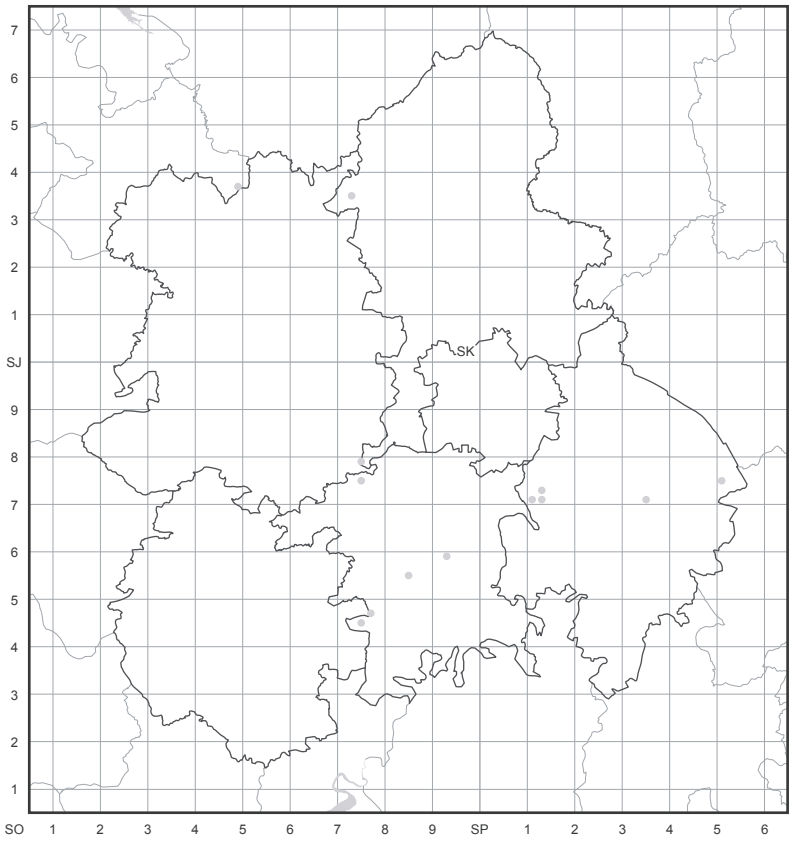
Barred Tooth-striped by David Green

5.3.25 Narrow-bordered Bee Hawk - *Hemaris tityus* - Species Statement

1. Current status

A formerly widespread species in the UK which has declined severely but is still present in a number of places e.g. Cornwall, Devon and the heaths of Dorset. At least one colony still occurs in Yorkshire and one in East Anglia. It could still just about be present in the West Midlands region as it was re-discovered in Gloucestershire in 1993.

There were no recent regional records (some of the last ones were Burnt Wood in Staffordshire in 1935 and the Wyre Forest in Worcestershire in 1936) until June 2008 when this moth was recorded on a site in Shropshire. At present the location of this record will remain confidential.



The larvae feed on Devil's-bit Scabious *Succisa pratensis* on a range of unimproved grasslands including wet acid grassland and chalk downland. A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005f).

2. Current factors causing loss or decline - Loss of habitat and inappropriate management.

3. Current regional action - None.

4. Regional objectives for the species - Consider possible presence of this species.

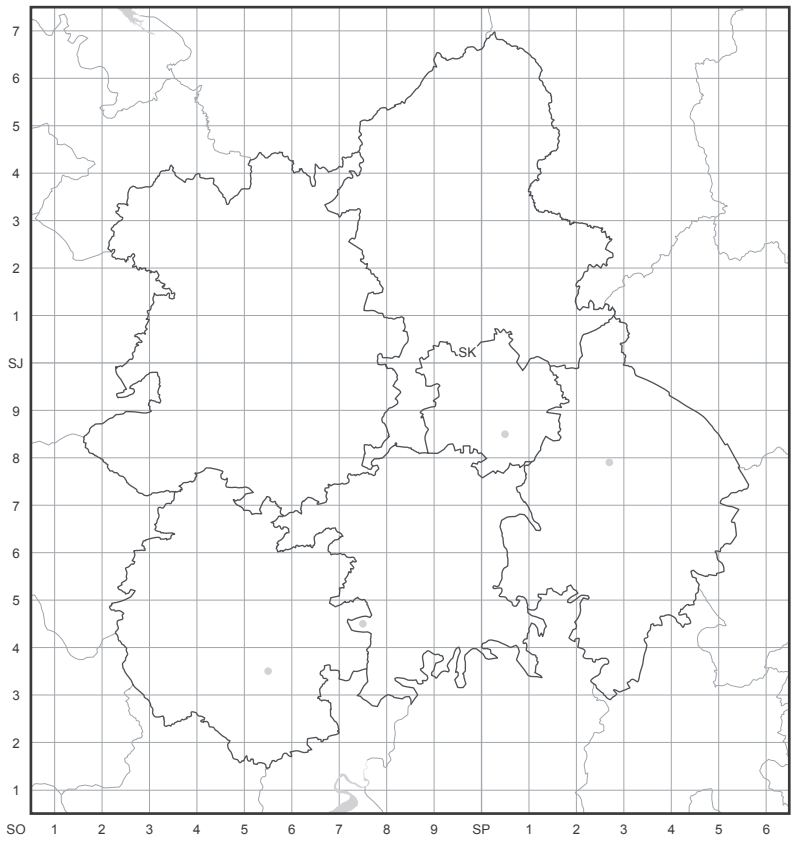
5. Proposed action - Survey only.

Narrow-bordered Bee Hawk adult by Peter Burgess **and larva** by Mark Parsons

5.3.26 Lunar Yellow Underwing - *Noctua orbona* - Species Statement

1. Current status
A formerly widespread species which was already undergoing severe decline in the 1970s and, since the 1980s, most of the records have come from the Breckland area of Norfolk and Suffolk with only a scattering of records from elsewhere e.g. Dorset and Bedfordshire. Shropshire has a fair number of relatively recent records (i.e. in the 1970s) but there have been none recently. As these Shropshire records are not currently on the West Midlands moth database, their locations do not appear on the map shown below.

The larvae feed on a range of both fine grasses and small herbaceous plants including cock's-foot *Dactylis glomerata* and chickweed *Stellaria media*. The Lunar Yellow Underwing is usually associated with open sandy, heathy or calcareous sites and open grassy areas within woodland. A species factsheet has been produced (Wigglesworth, Parsons, Haggett & Warren, 2005).



2. Current factors causing loss or decline - Unknown.

3. Current regional action - None.

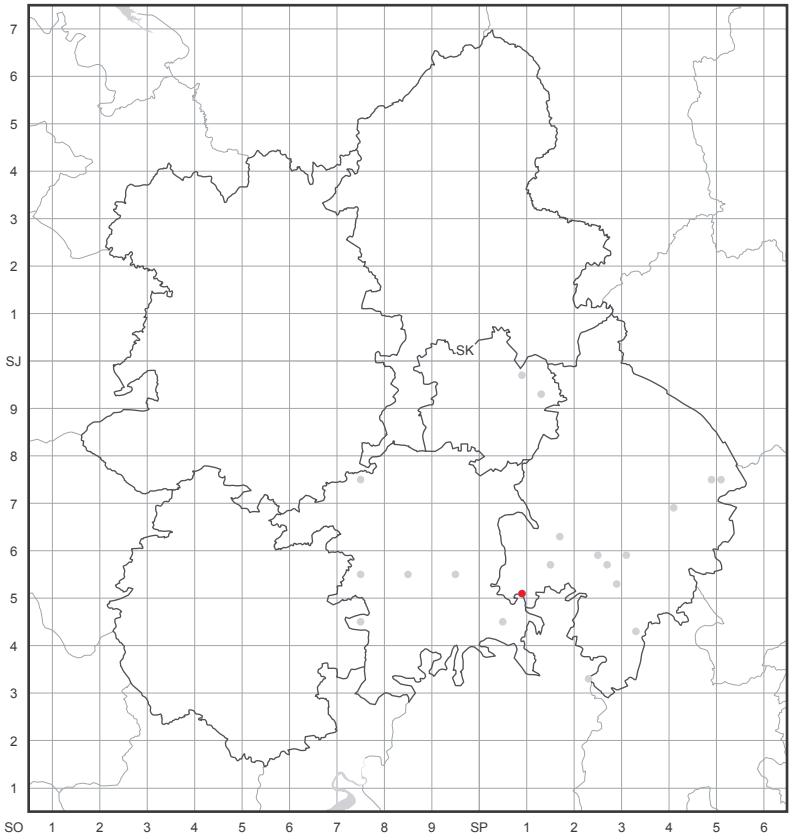
4. Regional objectives for the species - Continue to consider the possible presence of this species.

5. Proposed action - Survey only.

5.3.27 Pale Shining Brown - *Polia bombycina* - Species Statement

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

1. Current status
In England this species formerly occurred widely south of a line between the Severn and the Humber. It has declined substantially with records from only about 20 scattered sites since 1980, only a few of which have strong colonies. In 2003, 34 adult moths were recorded at a previously known site on Salisbury Plain (Hoare, Davis, Parsons & Bourn, 2004) with four other records from one other site. In 2006, good numbers were recorded in Oxfordshire (M.Townsend). The only recent regional records are from Warwickshire where Pale Shining Brown was recorded at Bidford on Avon on 8th July 1992 and the 3rd July 1994 (David Brown, *pers. comm.*). The larval foodplants of this species in the wild are unknown. A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005g).



2. Current factors causing loss or decline - Unknown.

3. Current regional action - None.

4. Regional objectives for the species - Consider the possible presence of this species.

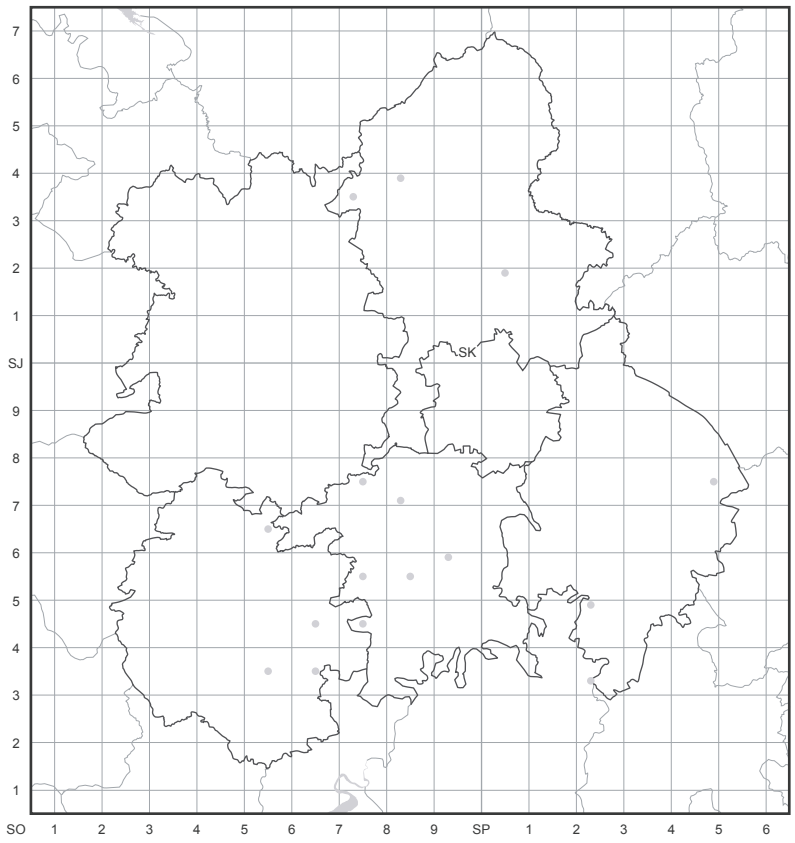
5. Proposed action - Survey only.

5.3.28 Bordered Gothic - *Heliophobus reticulata marginosa* - Species Statement.

Proposed UK Red Data Book ☐
UK Biodiversity Action Plan: Priority Species

1. Current status

This species is a very rare resident in the UK and a suspected immigrant. The only area in England with a series of recent records is Gravesend in Kent. Targeted searching in 2002 failed to find it, although there was a single record from Norfolk in 2003 (Hoare, Davis, Parsons & Bourn, 2004) where it was always best known from the breckland (Waring & Townsend, 2003). There are no recent West Midlands records for this species. A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005h).



2. Current factors causing loss or decline - Unknown.

3. Current regional action - None.

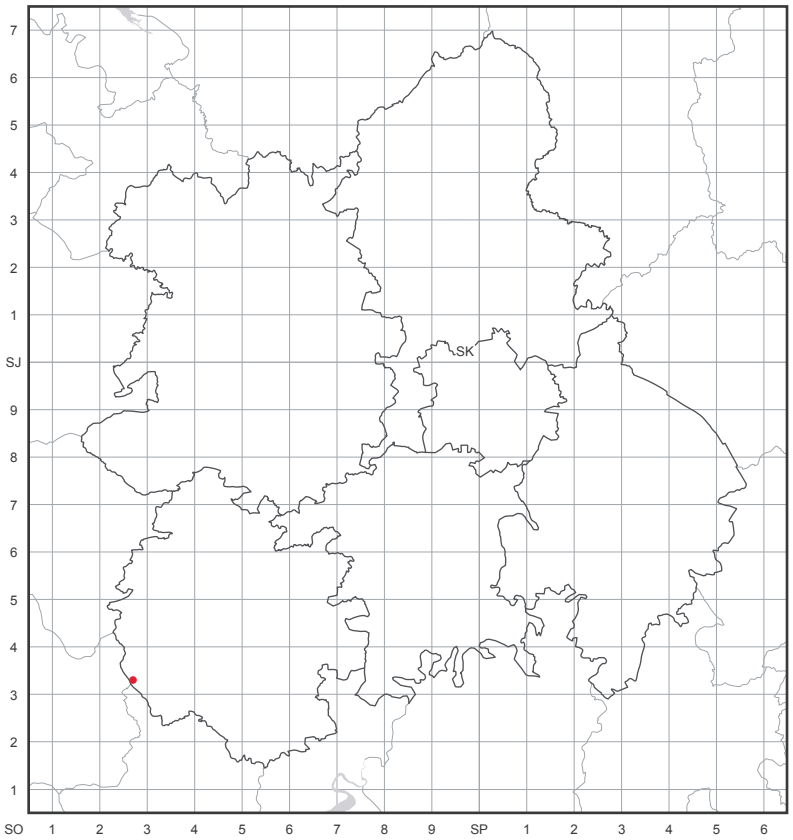
4. Regional objectives for the species - Consider the possible presence of this species.

5. Proposed action - Survey only.

5.3.29 Silurian - *Eriopygodes imbecilla* - Action Plan

UK Red Data Book (UK RDB) ■

Distribution and Status - A species first discovered in 1972 when one came to light in the hills of north-west Monmouthshire. It is still only known from this single locality although there have been some more widespread records in the vicinity of the known colony. The only English record was obtained from the Black Mountains of Herefordshire in 1999 (Harper & Simpson, 2002).



Habitat - This species occurs in gullies and hollows of high moorland (400-500m) dominated by bilberry *Vaccinium myrtillus* (Waring & Townsend, 2003). In 2005, 16 wild larvae were found feeding on the stems and buds of bilberry and on heath bedstraw *Galium saxatile* in the mountains near Abertillery (Waring, Hobson & Anthoney, 2005).

Threats
- Loss of habitat.

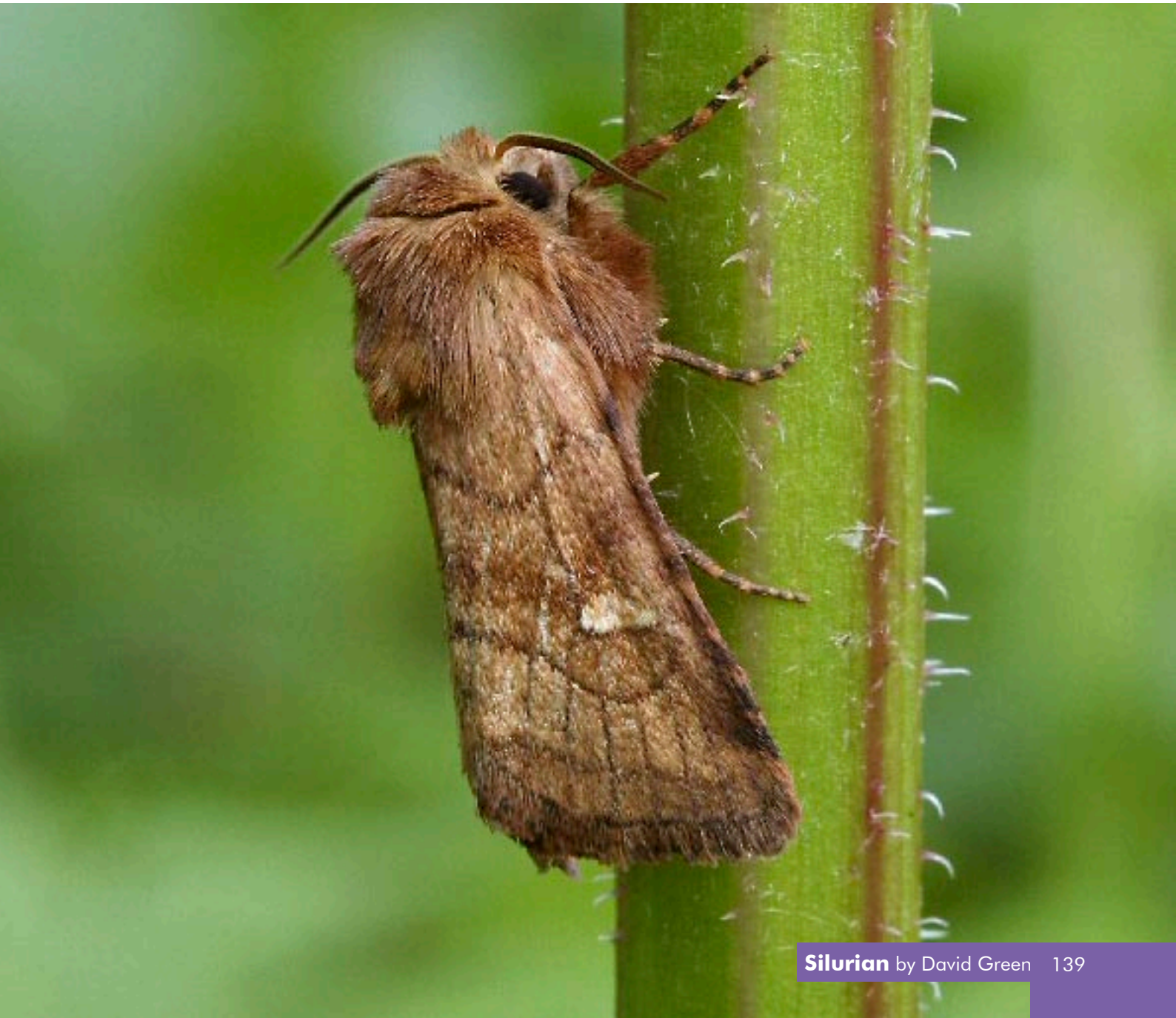
Survey - None specifically targeted at this species in England as the area where it is thought to occur (Olchon Valley) is so inaccessible (Michael Harper, *pers. comm.*).

Monitoring - None at present.

Management - More work on the habitat requirements of this species is needed before any specific management suggestions can be made.

Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Silurian.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site Safeguard & Management		
2. Undertake liaison with land managers in the Olchon Valley.	By 2011	NE, FC, NT, Wildlife Trusts, local volunteers
Research & Monitoring		
3. Set up a monitoring scheme to record this moth in the Olchon Valley at least once every three years.	By 2011	NE, NT, FC, Wildlife Trusts, local volunteers
4. Support ecological research aimed at identifying the best management practices for this species.	By 2011	NE, other grant awarding bodies



Silurian by David Green

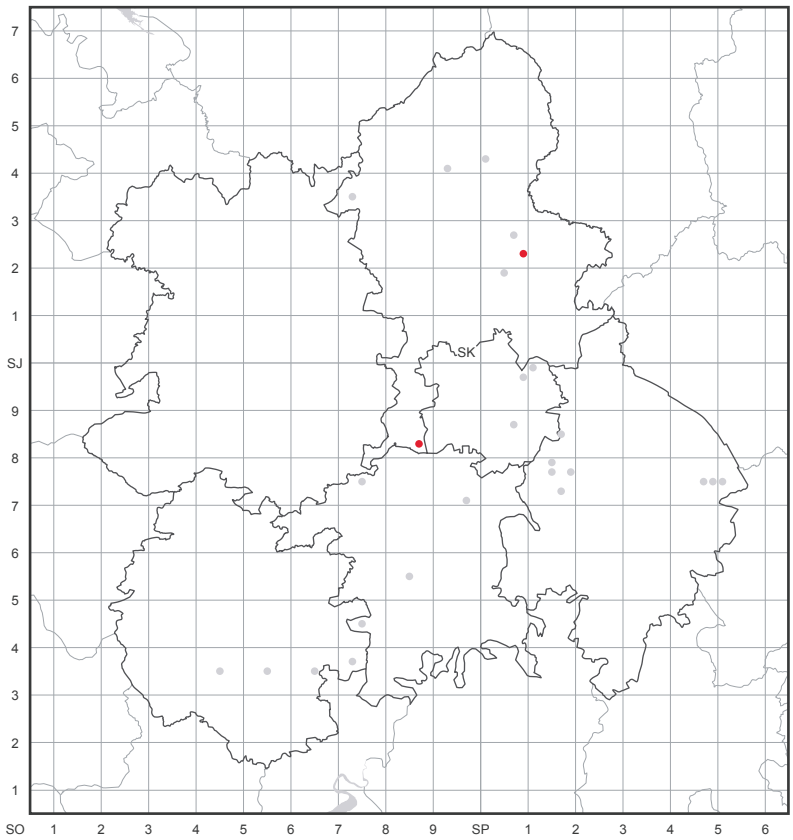
5.3.30 Sword-grass - *Xylena exsoleta* - Species Statement

Nationally Scarce - Notable B (Nb)
UK Biodiversity Action Plan: Priority Species

1. Current status

This species has been recorded in a wide range of habitats but mostly in uplands and moorlands. Its range has contracted northwards in recent decades and it is regularly recorded throughout Scotland. It also occurs in North Wales and in northern England. As this species is a suspected immigrant as well as a rare resident, the one record for Herefordshire in 1989 being thought to be a migrant. The Sword-grass was one of the target species of National Moth Night in 2003 when it was recorded at sites in the Outer Hebrides, Inverness-shire, Aberdeenshire and the Isle of Man (Hoare, Davis, Parsons & Bourn, 2004). A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005i). This moth was also recorded at one site in Staffordshire in 2006.

Sword Grass larva by Mike Williams



2. Current factors causing loss or decline - Unknown.

3. Current regional action - None.

4. Regional objectives for the species - Consider the possible presence of this species.

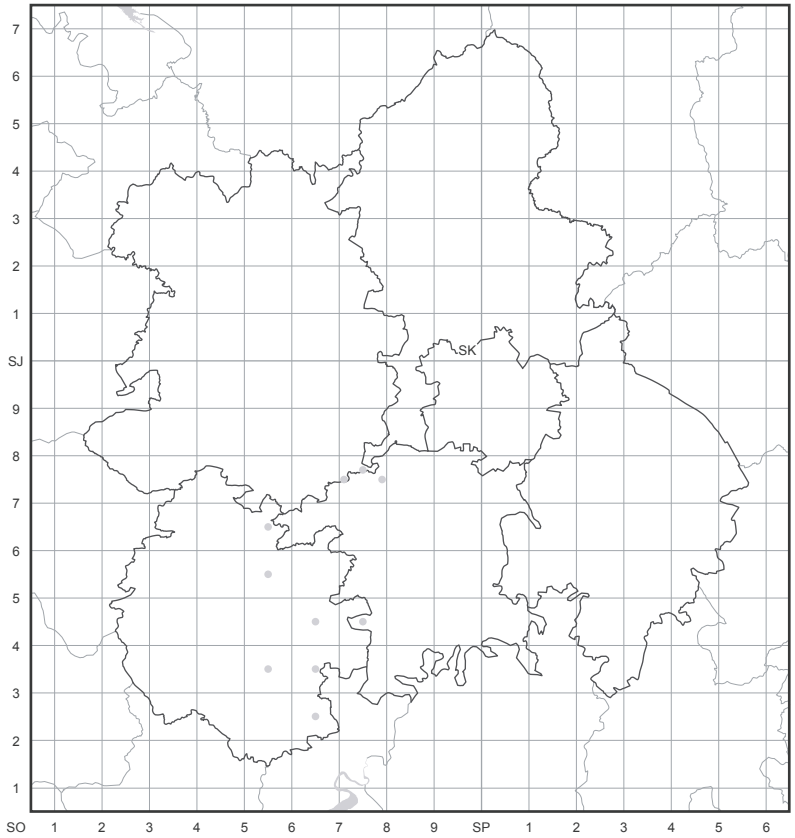
5. Proposed action - Survey only.

5.3.31 **Orange Upperwing** - *Jodia croceago* - Species Statement

UK Red Data Book (UK RDB) Category 1 (Endangered)
UK Biodiversity Action Plan: Priority Species

1. Current status
Historically this moth always had a southern distribution in the UK with records from e.g. Wiltshire, Oxfordshire, Surrey and Sussex. No British colonies are currently known although there are post 1980 records from six areas of the country including Cornwall, Devon, Surrey, South Wales and Shropshire (see Riley 1991). The Shropshire records are not currently on the West Midlands moth database so their locations do not appear on the map shown below.

The larvae of the Orange Upperwing feed on oak (*Quercus spp.*). One important feature of sites may be the presence of oaks which retain their leaves in winter, e.g. young oak saplings and coppice re-growth (UK Biodiversity Action Plan, 1999).



2. Current factors causing loss or decline - A reduction in oak coppice may have led to a decline in this species.

3. Current regional action - Some targeted survey for this species e.g. at the Wyre Forest but no new records.

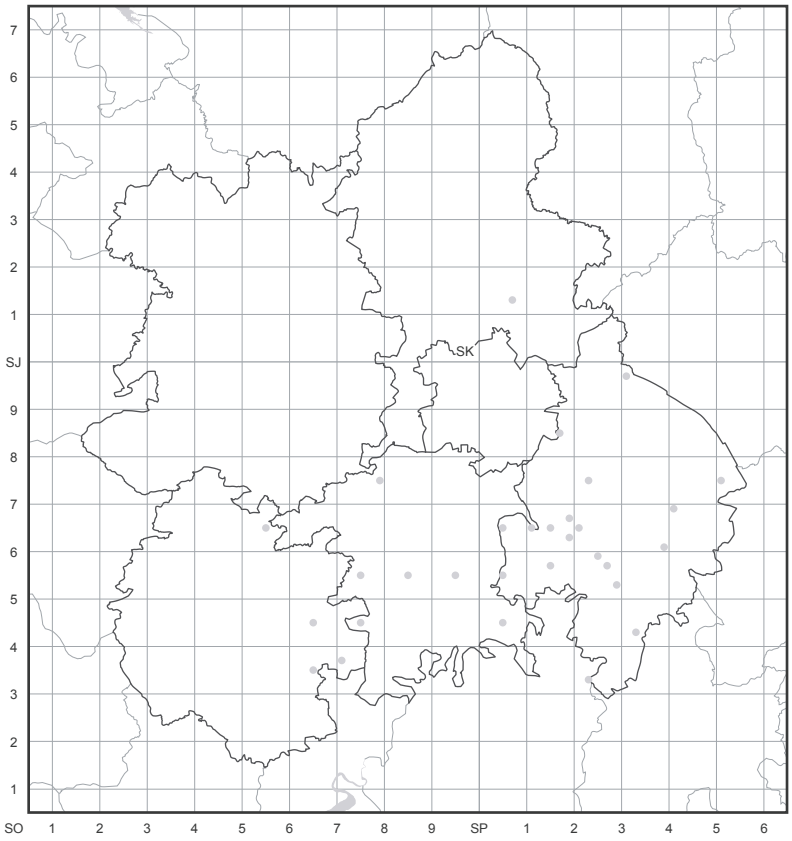
4. Regional objectives for the species - Consider the possible presence of this species.

5. Proposed action - Survey only.

5.3.32 White-spotted Pinion - *Cosmia diffinis* - Species Statement

Nationally Scarce - Notable A (Na)
UK Biodiversity Action Plan: Priority Species

1. Current status
A species which was formally widespread in central and southern England and parts of Wales (UK Biodiversity Action Plan, 1999). It has only recently been regularly recorded on a number of sites in the Huntingdon area of Cambridgeshire with only occasional sporadic records elsewhere. However, in 2002, populations of this species were re-found in Essex and Bedfordshire. In the West Midlands region, there have been no records since the 1970s apart from one Worcestershire record in 2007 which has just been confirmed. As this site is privately owned and the owner does not wish this site to become widely known, the location of this new record is not shown on the map. Larvae feed on elm (*Ulmus spp.*). A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005j).



2. Current factors causing loss or decline - Dutch Elm disease. Many elms are continuing to die of Dutch Elm disease as they reach 3-4m high.

3. Current regional action - Some targeted survey for this species.

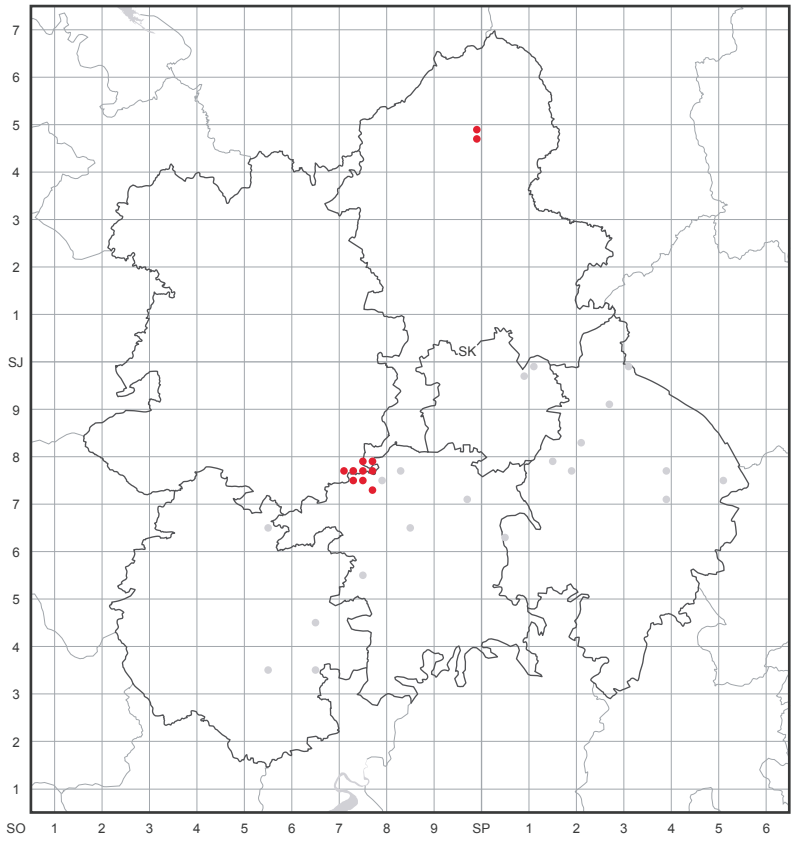
4. Regional objectives for the species - Continue to consider the possible presence of this species.

5. Proposed action - Survey only.

5.3.33 Common Fan-foot - *Pechipogo strigilata* - Action Plan

Nationally Scarce - Notable A (Na)
UK Biodiversity Action Plan: Priority Species

Distribution and Status - A species which used to be present throughout most of southern England and Wales but which has now significantly declined and only survives in a small number of oak woods on heavy clay soils in the Midlands and south-central England. It still occurs on a small number of sites in the West Midlands region with the Wyre Forest being an important national stronghold for this species (Grundy, 2002, 2003c, d, 2005c, in prep.). Within the Wyre Forest, the main population centre for this species is in the Dowles Brook and Park Brook corridors with smaller population centres being found at Brandlodge Coppice, Postensplain, Seckley Wood and at nearby Burnt Wood (Grundy, 2003c). It was also recorded in the Breakneck Bank area in 2007 (Dave Grundy, *pers. comm.*).



Habitat - Occurs in broad-leaved woodland where larvae initially feed on fresh or wilting foliage of oak (*Quercus spp.*), with larger larvae feeding on withered and decaying leaves on the tree or on the ground (UK Biodiversity Action Plan, 1999).

Threats
- Cessation of coppicing and other forms of traditional woodland management.

Survey - Project to survey and monitor this species in the Wyre Forest annually from 2002. The highest numbers recorded were 93 adults and 45 larvae in 2006 (annual comparisons being made using rates of adults per trap and larvae found per hour of search, see Grundy, 2008). The most effective way of recording adults is by using Skinner Moth traps with a technique of 'branch snapping' being developed to locate larvae (Grundy, 2003c,d). In 2002, this moth was also recorded in an area of the Consall Nature Park in Staffordshire (Grundy, 2003a). These Consall records were the first records for this species at this site since 1989. Targeted survey of Haugh Wood in 2006 a former site for this moth in Herefordshire produced no records (Jordan, 2007)

Monitoring - Annual monitoring visits to the Wyre Forest since 2002 (see above and e.g. Grundy 2002, 2003c,d, 2006c, 2008). Occasional larval counts have been undertaken at Consall e.g. in 2004 (James Hill, *pers. comm.*).

Management - As a result of all the work at the Wyre Forest a clearer understanding of the habitat requirements of this moth is starting to emerge. It appears to need both drier track side habitats and damper humid areas of dense canopy away from track sides to survive. In years with average or wet weather, most larvae are found along track sides, but appear to be subject to parasitism and predation. In drier years larvae are able to survive better away from track sides in more humid woodland and in these areas suffer much less predation and parasitism. This combination of factors appears to give an increase to population levels which could be vital to survival (from Grundy, 2008).

Publicity - A species factsheet has been produced (Wigglesworth, Parsons & Warren, 2005k).

Actions and Targets

Action	BC's Targets	Possible Partners
Policy and Legislation		
1. Ensure local strategic documents (District Local Plans, County Structure Plans etc) contain policies that safeguard and promote BAP species such as the Common Fan-foot.	Ongoing	Local Authorities, Wildlife Trusts, etc
Site/Species Protection & Management		
2. Continue liaison with the managers of sites occupied by Common Fan-foot to ensure they are aware of the importance of this species and the habitats it may occupy.	Ongoing	Local volunteers, NE, Wildlife Trusts, FC, Staffordshire County Council
Research & Monitoring		
3. Continue with annual larval counts at the Wyre Forest and Consall Nature Park.	Ongoing	Local volunteers, NE, Wildlife Trusts, FC, Staffordshire County Council
4. Survey at least three other historic regional sites for this species by a combination of larval and adult searches.	By 2011	NE, FC, Wildlife Trusts, RSPB, LAs, local volunteers
5. Support further ecological research aimed at identifying the best management practices for this species.	Ongoing	NE, other grant awarding bodies
Communication, Education and Publicity		
6. Increase awareness among the general public of the importance of this species in the region, how to record it and appropriate management by events, articles and press releases. Aim for at least 1 every three years.	By 2011	Local volunteers, NE, FC, Wildlife Trusts

Common Fan Foot larva and adult by Dave Grundy

6. Medium priority moths

UK BAP Common and Widespread Priority Species - based on data from Rothamsted Research Station - to go on a widespread but rapidly declining group list (but included here for research only purposes).

Ghost Moth - *Hepialus humuli*
Pale Eggar - *Trichiura crataegi*
Lackey - *Malacosoma neustria*
Oak Hook-tip - *Watsonalla binaria**
Oak Lutestring - *Cymatophorima diluta*
Small Emerald - *Hemistola chrysoprasaria*
Blood-vein - *Timandra comae*
Mullein Wave - *Scopula marginepunctata*
Oblique Carpet - *Orthonama vittata*
Red Carpet - *Xanthorhoe decoloraria*
Dark-barred Twin-spot Carpet - *Xanthorhoe ferrugata*
Shaded Broad-bar - *Scotopteryx chenopodiata*
Galium Carpet - *Epirrhoe galiata*
Grey Mountain Carpet - *Entephria caesiata*
Dark Spinach - *Pelurga comitata*
Spinach - *Eulithis mellinata*
Small Phoenix - *Ecliptopera silaceata**
Pretty Chalk Carpet - *Melanthia procellata*
Grass Rivulet - *Perizoma albulata*
Streak - *Chesias legatella*
Broom-tip - *Chesias rufata*
V-moth - *Macaria wauaria*
Latticed Heath - *Chiasmia clathrata*
August Thorn - *Ennomos quercinaria**
Dusky Thorn - *Ennomos fuscantaria**
September Thorn - *Ennomos erosaria*
Brindled Beauty - *Lycia hirtaria**
Figure of Eight - *Diloba caeruleocephala*
Garden Tiger - *Arctia caja*
White Ermine - *Spilosoma lubricipeda*
Buff Ermine - *Spilosoma luteum**
Cinnabar - *Tyria jacobaeae*
Garden Dart - *Euxoa nigricans*
Autumnal Rustic - *Eugnorisma glareosa*
Small Square-spot - *Diarsia rubi**
Neglected Rustic - *Xestia castanea*
Heath Rustic - *Xestia agathina*
Double Dart - *Graphiphora augur*
Dot Moth - *Melanchra persicariae*
Broom Moth - *Melanchra pisi*
Hedge Rustic - *Tholera cespitis*
Feathered Gothic - *Tholera decimalis*
Powdered Quaker - *Orthosia gracilis*
Shoulder-striped Wainscot - *Mythimna comma**
Minor Shoulder-knot - *Brachylomia viminalis*
Sprawler - *Asteroscopus sphinx*
Brindled Ochre - *Dasypolia templi*
Deep-brown Dart - *Aporophyla lutulenta*

Green-brindled Crescent - *Allophyes oxyacanthae*
Dark Brocade - *Blepharita adusta*
Flounced Chestnut - *Agrochola helvola*
Brown-spot Pinion - *Agrochola litura*
Beaded Chestnut - *Agrochola lychnidis*
Centre-barred Sallow - *Atethmia centrago**
Sallow - *Xanthia icteritia*
Dusky-lemon Sallow - *Xanthia gilvago*
Grey Dagger - *Acronicta psi**
Knot Grass - Acronicta rumicis*
Mouse Moth - *Amphipyra tragopoginis*
Dusky Brocade - *Apamea remissa**
Large Nutmeg - *Apamea anceps**
Rosy Minor - *Mesoligia literosa*
Ear Moth - *Amphipoea oculea*
Rosy Rustic - *Hydraecia micacea*
Haworth's Minor - *Celaena haworthii*
Crescent - *Celaena leucostigma*
Rustic - *Hoplodrina blanda**
Mottled Rustic - *Caradrina Morpheus**
Anomalous - *Stilbia anomala*
White-marked - *Cerastis leucographa***
Red Chestnut - *Cerastis rubricosa***

* No evidence of local declines in these species. Oblique Carpet, Galium Carpet, Dark Spinach and Neglected Rustic were always very local and uncommon in the West Midlands.

** These two species have declined markedly in West Midlands and could be added to the list. The chief cause of specific and general decline in moth numbers and distribution remains habitat loss through a lack of woodland management, and loss of wet habitats and unimproved grasslands (Tony Simpson & Michael Harper, *pers. comm.*).

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