

Highnam Butterfly Crescent. A summary report of findings and work carried out between February 2018 and February 2021 by volunteers in association with, and with advice from Butterfly Conservation Gloucestershire Branch under a 3 year licence from the land owner, Tewkesbury Borough Council.

Appendices

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Site description

This is an exceptional woodland edge site for butterflies and other insects, because it is sheltered, warm and sunny, with an adequate spread of nectar plants through spring and summer, as well as grasses which caterpillars of the meadow butterflies require as food plants.

This grassland scrub offers a wide variety of micro-habitats. Within the grasses are a series of zones, e.g. sparser warm dry areas beloved by Marbled Whites and Meadow Browns, and the slightly cooler, lush grasses further down the slope favoured by Ringlets. Of the 21 species recorded, others, less common and declining such as Small Copper and Small Tortoiseshell, may also breed here as their larval food plants and nectar are on site.

The wider area, beyond the wood and playing field, consists of intensively farmed arable monocultures and some grazing, where comparable good insect habitat has been lost in the last year, from changes in land management, making sensitive management of the Crescent even more crucial.

Matters needing attention

Community engagement

Having removed the majority of the overshadowing saplings, **the main priority now is to continue to educate, inform and involve local residents and the relatively high proportion of visitors to the site who don't live in Highnam** but drive in to walk their dogs, visit the play area, or walk up from Over Farm Shop.

The Butterfly Crescent is crossed by walkers, children and dogs, through to the woodland beyond.

To the uninitiated eye the area presents as uncut grass and scrubby trees and possibly of no value. There may even be a misguided temptation to 'tidy' by those unaware of its high wildlife value, especially in winter, when there is little visible activity.

At present, a lack of awareness still has a detrimental impact on the area, such as free-running dogs and fouling, litter and unnecessary trampling of the habitat. This situation has the potential to deteriorate further with increased footfall as more visitors are attracted in to the new play equipment, and the mooted addition of barbecue / picnicking facilities creates longer visits.

The majority of these issues can be resolved by **clearly marking the site and communicating what happens there**. Most people are considerate and change their behaviour when they are aware of and understand what's special about the area.

For this to happen, **the site needs to be marked. A visitors' board might be helpful, and even more useful, a small regularly updated board** of what you can see this month for instance and what's happening, to actively involve people and generate enjoyment.

There is scope for a creative community project here, e.g. **marking the extent of the boundary** with, for instance, wooden pegs displaying creatures found within the site, either whittled into the wood or painted on. Examples of this kind of demarcation can be found throughout the country on reserves and wildlife sites. (Appendix 6)

Butterfly Conservation suggests a small change to the cutting of the playing field turf, not on the Crescent itself but on the playing field immediately in front of the Crescent – a one to two metre wide strip could be cut to a height of 15cm in order to slow down kicked balls. This would be helpful in protecting the wider diversity of flowering plants that occur mainly at the front of the Crescent. Ubico said it would be possible to raise the cutters higher.

Lassington Wood and the wildlife hedge that backs the Crescent filter out cold easterly winds. This needs to be borne in mind when considering future maintenance.

- Woodland thinning works need to be staggered
- Hedge laying carried out over 3 or 4 winters in sections

From its growth pattern it appears that the hedge has not been laid during its life. The top has been mechanically cut by Ubico, TBC's contractor, prior to commencement of the licence. This type of maintenance leads to a very thin and bare base, which is the case here.

Native hedgerows are best maintained by periodic laying, a process which reduces the height, thickens the base and restarts the growing process, producing an A-shaped structure which is of high wildlife value.

Southern boundary shelter belt This is largely made up of ash, and the likelihood is in time these larger trees will also succumb to ash dieback, so some forward planning **now** would be advisable.

If the mooted housing development goes ahead directly adjacent, there will be increased turbulence from the built landscape, so again forward planning with planting now would allow time for them to become established and help alleviate adverse effects.

This is an opportunity to introduce a more diverse range of native hedgerow trees such as wayfarer, guelder rose, field maple, hawthorn, hazel and birch. This would assist with filtering, bulk up the shelter belt, add wildlife interest and food and look attractive.

Drainage from the whole slope of the playing field results in this area at the bottom of the slope being extremely wet. Some planting of native willow which are not particularly evident in this area would help with water absorption, bind the run off areas where soil is being eroded and offer a great source of early pollen for bees.

Ongoing surveying. There is plenty of scope here for more interesting information gathering to involve the community in, particularly:

- Holly Blue butterflies have not been recorded on the site, but are present in the locality, so perhaps a good challenge to find.
- There has been an independent recording of White-letter Hairstreak, but numbers of this species are unknown and require ongoing surveying. This will determine whether this location can be considered a Key Site.
- Silver-washed Fritillaries have not been recorded on the site over the last 3 years, but they do occur close by in Highnam Wood.
- Identifying and surveying grass species to ensure each meadow butterfly's preferred larval food plants are still growing on the Crescent.

Zones on site and current maintenance programme

For this section refer to: **Appendix 3** for each butterfly's habitat requirements.
Appendix 1 habitat vegetation map

It is important to appreciate that while the meadow butterflies are only seen flying in the summer, other stages of their lifecycle are present all year round: eggs, caterpillars and pupae. Some caterpillars will feed during the winter when the weather is mild.

Grass management

While it is accepted practice to reduce grass vigour through a) cutting and removal and b) introducing yellow rattle to parasitise grass roots, this is not necessarily the best plan of action here. The breeding species here are predominantly meadow butterflies, each requiring its own niche from thick tussock to tall stems, cool damp and lush and finer lower growing grass species – all already found on site. It's working well at the moment. Insensitive management could be highly detrimental to one or more butterfly species.

It is always a good idea to make changes in patches, not over the whole site so that any invertebrates can move from one area to another, thereby not eliminating any one species in one go. Here are some ideas:

- Grass – when it becomes thick and rank: cut like a chequer board in alternate 60cm squares to provide shelter for caterpillars and pupae in uncut squares. Remove cut grass.
- Tall grasses – ensure some are left standing for overwintering Small and Essex Skipper caterpillars.
- Grass tussocks – ensure some remain uncut for overwintering and feeding caterpillars.

Trees, shrubs and other important plants

During sapling clearance, occasional trees and shrubs have been left for their habitat, as well as general amenity value.

Report on Highnam Butterfly Crescent, January 2021, by Karen and David Nicholls with support from Butterfly Conservation

- **Prunus** – early and attractive blossom, excellent early bee pollen/nectar and later fruit
- Stand of **blackthorn** (zone 1) There are 2 varieties, one flowering earlier than the other which extends the availability of early pollen/nectar. A bay was cut into this thicket extending back towards the hedge (in response to advice to not let the two areas merge, for ease of maintenance). The following summer, this created an enriched sheltered area and it was observed to be heavily populated by meadow butterfly species during surveys in 2019, and knapweed in particular has also subsequently self-sown into the bay. Responding to this unplanned positive outcome, two further bays were cut in early spring 2020.
- **Hawthorn** – not common elsewhere in the adjoining woodland edges apart from in the Butterfly Crescent hedge. Blossom/nectar source. Autumn fruit for birds and mice.
- **Field maple** – autumn seed and colour
- Occasional random species of sapling (often oak) are pruned in winter, to about 1 metre height to create a low scrub storey for perching and roosting insects and light shade during extreme hot spells. Buff-tip moth caterpillars were recorded feeding on such an oak in summer 2020.
- **Brambles**. Because of their tendency to grow invasively, their high value is often overlooked. Zone 3 is a highly strategic stand of established bramble in full sun. 13 butterfly species on the Crescent use it as a substantial nectar source. Physically it forms a sheltering structure like a hedgerow, which gives huge protection to the mixed hedgerow behind it. There are often remarkable numbers of butterflies and other insects in this area during July and August enjoying the warmth and food source. Bramble is also important for around 35 species of moth. This stand is immediately adjacent to the grassland where the meadow butterflies breed. Bramble has a long flowering season offering pollen and nectar and late summer butterflies feast on the fruit to take them through winter hibernation. (The thrush family also stock up on blackberries.) Maintenance is carried out in the winter by a single cut of around 1-1.25m around the perimeter to check outward growth. Elsewhere the site has a large amount of bramble. This is now easier to manage through scything off the top to contain regrowth and spread, and complete root removal when time and ground conditions allow.

Thistle stand (zone 5) – a top order plant with high nectar value for many of the breeding and visiting butterflies (13 species on the Crescent use it as a substantial nectar source). These thistles have not proved to be vigorous as anticipated, but they may need some heading back in the future to contain them within their zone.

It is useful to have some **nettles** set aside in a sunny location for the caterpillars of Small Tortoiseshell, Comma, Peacock and Red Admiral butterflies.

The site contains **ragwort**, which plays a vital role especially after hot dry spells, as it is the predominant nectar source in later summer. 18 of the 21 species recorded on site use this as a substantial nectar source. The Cinnabar moth breeds on site and ragwort is essential, as it is its larval food plant. There also appears to be a shorter growing species that usefully flowers later when there is little other nectar available.

A single pulling of the whole plant, preferably just before seed burst, leaving a few flowering stems keeps the plants' occurrence to useful levels without swamping the site and becoming invasive. Flower heads with feeding Cinnabar caterpillars need to be left. (Gathered plants are placed in a builders' rubble sack to rot down seed heads over several months).

Native plants and seed have been offered to add to the site. However, Butterfly Conservation advised against this, it being considered preferable to allow natural colonisations to occur as the sapling trees are removed.

At an internationally recognised time of crisis in insect number decline, this habitat is bucking the trend and deserves conservation priority – and it is simple to do.

Karen and David Nicholls,
Highnam residents and Butterfly Conservation Volunteers. February 2021

Copies of report to:

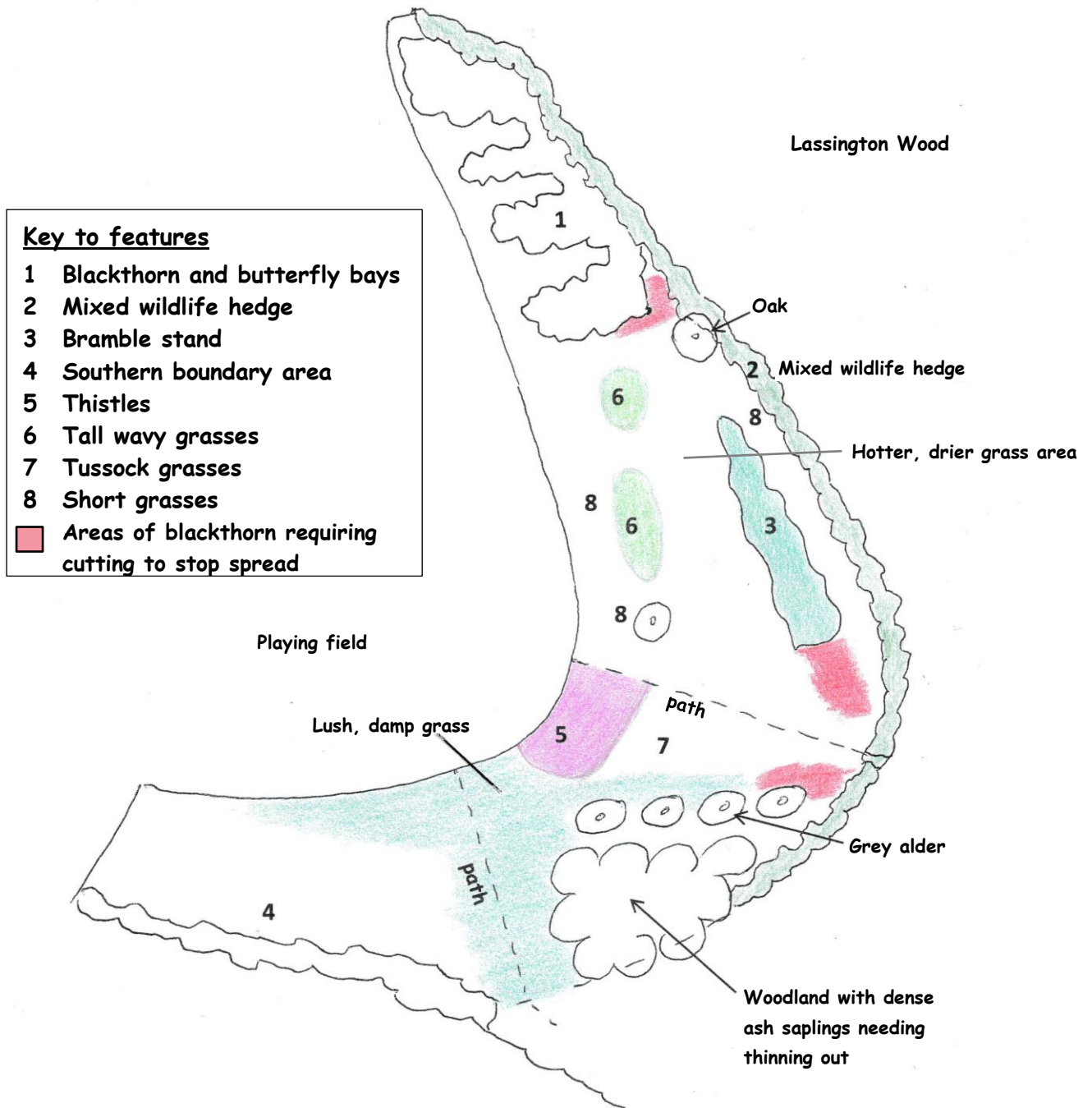
Andy Noble – Assets Manager, Tewkesbury Borough Council
Councillor Cate Cody – Tewkesbury Borough Council
Councillor Jill Smith – Tewkesbury Borough Council & Highnam Parish Council
Councillor Bill Badham – Highnam Parish Council
Gloucestershire Centre for Environmental Records

Appendices

Appendix 1

Highnam Butterfly Crescent - habitat vegetation map

Sketch - not to scale



Appendix 2

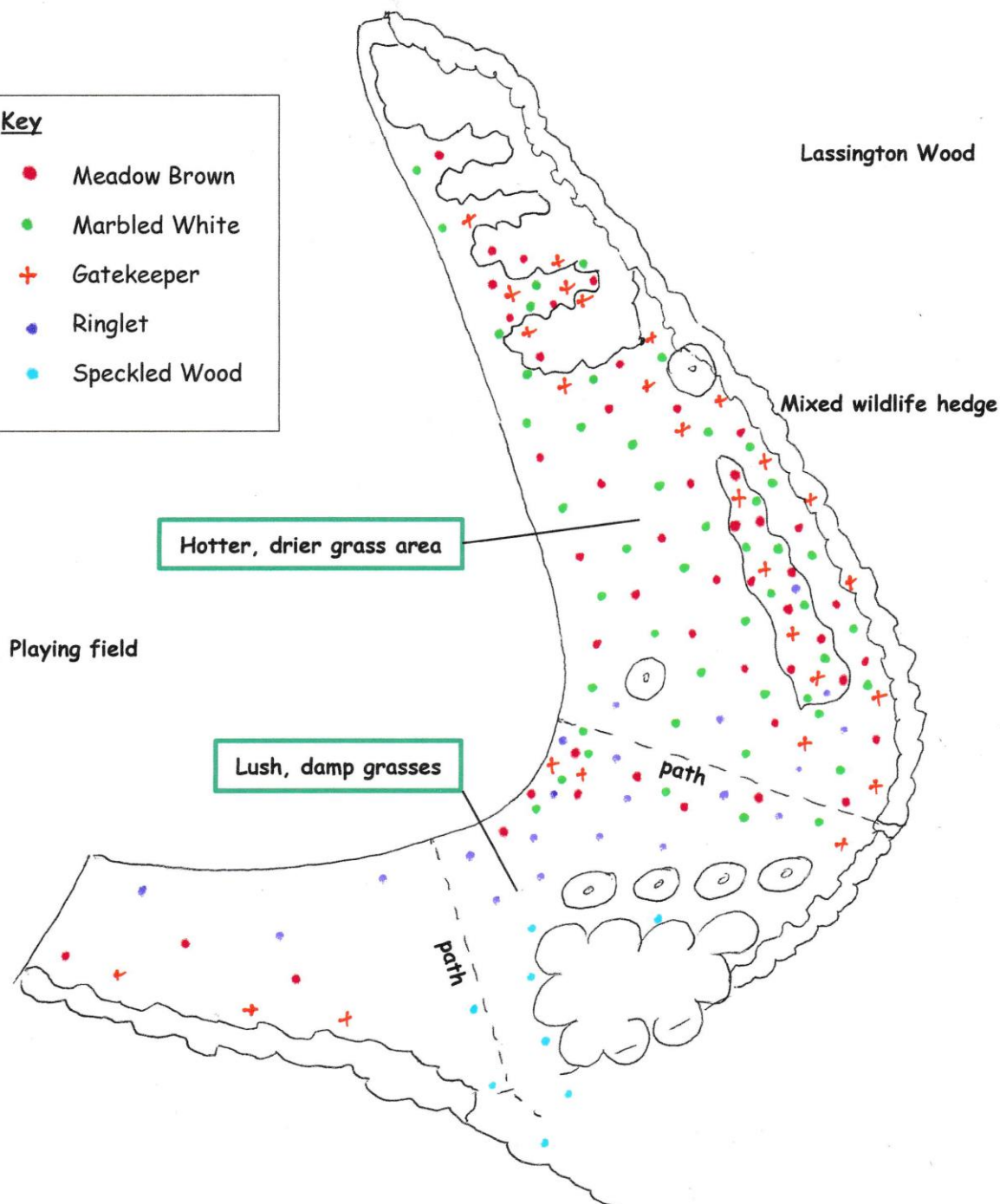
Highnam Butterfly Crescent

Grassland/meadow butterflies - preferred zones




Sketch - not to scale


Key	
●	Meadow Brown
●	Marbled White
+	Gatekeeper
●	Ringlet
●	Speckled Wood



Appendix 3 Grassland butterflies' life cycles with specific habitat requirements

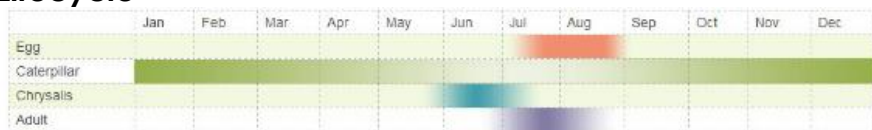
- Adult butterflies lay their eggs on Crescent grasses
- Grassland butterflies spend most of the year – up to 10 months – as caterpillars
- Caterpillars feed on specific grasses for several months – some in milder winters
- They pupate low down in situ
- Butterflies are indicator species re health of insects in general
- Vulnerable to agricultural intensification

Meadow Brown													
Lifecycle													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Egg													
Caterpillar													
Chrysalis													
Adult													
Larval food plants: grasses – bents, meadow-grasses, fescues, Cock's-foot, False Brome, Downy Oat-grass													BC Pete Withers
Adult nectar: primarily knapweeds and thistles, but also brambles, buttercups, Common Fleabane, Hemp-agrimony, ragworts, Selfheal, Wild Marjoram, Wild Privet, Wild Teasel and Yarrow													
Notes on the Butterfly Crescent:													
<ul style="list-style-type: none"> • Most recorded on one visit – 47 (03.07.2019) • Thrives on open grasslands 													

Gatekeeper													
Lifecycle													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Egg													
Caterpillar													
Chrysalis													
Adult													
Larval food plants: grasses – bents, meadow-grasses, fescues, Cock's-foot, False Brome, Downy Oat-grass													BC Andrew Cooper
Adult nectar: primarily brambles and ragworts. Also Thistles, Hemp-agrimony, Red Clover Wild Privet, Wild Thyme, and Common Fleabane													
Notes on the Butterfly Crescent:													
<ul style="list-style-type: none"> • Most recorded on one visit – 32 (18.07.2018) • Sedentary species rarely found far from its colony • Likes sunny areas where hedgerows and shrubs grow close to rough grassland • Vulnerable to hedgerow removal 													

Ringlet

Lifecycle



BC Andrew Cooper

Larval food plants: Grasses: Cock's-foot, False Brome, Common Couch, Meadow-grasses (various) and Tufted Hair-grass

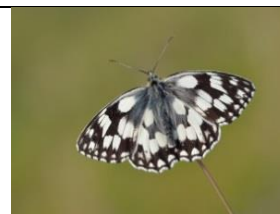
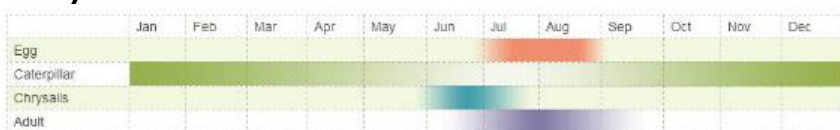
Adult nectar: Bramble, Fleabane, Hemp Agrimony, Kidney Vetch, Marjoram, Privet, Ragwort and Thistles

Notes on the Butterfly Crescent:

- Most recorded on one visit – **53** (29.06.2018)
- Fairly sedentary species and forms self-contained colonies within the confines of its site
- Favours sheltered damper areas with tall lush grasses, especially around scrub and hedgerows. Prefers partial shade and to be near plentiful nectar sources
- Favourite larval foodplants – Cock's-foot and False Brome where these grow as lush coarse uncropped tussocks

Marbled White

Lifecycle



BC Bob Eade

Larval food plants: Grasses: Red Fescue, Sheep's-fescue, Tor-grass and Yorkshire-fog

Adult nectar: Thistles, Carline Thistle, Knapweeds, Marjoram, Red Clover, Thyme, White Clover and Yarrow

Notes on the Butterfly Crescent:

- Most recorded on one visit – **80** (03.07.2019)
- Found in distinct colonies
- Favours unimproved grassland where grasses grow tall

Speckled Wood

Lifecycle




BC Bob Eade


Larval food plants: grasses: Cock's-foot, Common Couch, False Brome and Yorkshire-fog


Adult nectar: primarily Honeydew / Sap. Also Bramble, Cuckooflower, Dandelion, Fleabane, Privet and Ragwort

Notes on the Butterfly Crescent:



- Most recorded on one visit – **5** (13.08.2019)
- Favours sheltered dappled sunshine in and around woodland
- Favours damper areas where grasses used as larval food plants grow lush and tall
- Overwinters as a larva or pupa

<h1>Large Skipper</h1>													
Lifecycle													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Egg													
Caterpillar													
Chrysalis													
Adult													
Larval food plants: Grasses especially Cock's-foot. Also False Brome, Purple Moor-grass, Tor-grass and Wood Small-reed												BC Iain Cowie	
Adult nectar: Bird's-foot Trefoil , Bramble, Bugle, Dandelion, Field Scabious, Kidney Vetch, Knapweeds, Privet, Thistles, Vetches and Yarrow													
Notes on the Butterfly Crescent:													
<ul style="list-style-type: none"> • Most recorded on one visit – 6 (27.06.2019) • Favours tall, uncut long grasses in sheltered areas of grassland / scrub 													

<h1>Small Skipper</h1>													
Lifecycle													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Egg													
Caterpillar													
Chrysalis													
Adult													
Larval food plants: tall flowering grasses mainly Yorkshire-fog. Also Cock's-foot, Creeping Soft-grass, False Brome, Meadow Foxtail and Timothy												BC Iain Leach	
Adult nectar: Betony, Bird's-foot Trefoil, Bramble, Dandelion, Fleabane, Knapweeds, Marjoram, Red Clover, Sanfoin, Thistles and Vetches													
Notes on the Butterfly Crescent:													
<ul style="list-style-type: none"> • Most recorded on one visit – 30 (11.07.2019). Some of these will have been Essex Skipper, which has also been identified on the Crescent • Difficult to distinguish from the Essex Skipper but has slightly different needs • Prefers more open rough grassland sites than Large Skipper 													

<h1>Essex Skipper</h1>													
Lifecycle													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Egg													
Caterpillar													
Chrysalis													
Adult													
Larval food plants: primarily Cock's-foot. Also Common Couch, Creeping Soft-grass , False Brome, Meadow Foxtail, Timothy and Tor-grass												BC Iain Leach	
Adult nectar: primarily Thistles. Also Fleabane, Heather, Red Clover and White Clover													
Notes on the Butterfly Crescent:													
<ul style="list-style-type: none"> • Difficult to distinguish from the Small Skipper but has slightly different needs • Likes tall, dry grassland growing in open but sunny situations • Spends much of its life at egg stage 													

Although not a grass feeder, the Cinnabar Moth is included here, as it is dependent on the Ragwort.

<h2>Cinnabar Moth</h2>	
<p>Lifecycle</p> <ul style="list-style-type: none"> • Eggs – May-Jul: laid in batches of 30-40 on ragwort • Larvae – Jun-Aug: initially feeding in groups on summer days • Pupae – Aug-May: in leaf litter or below soil surface • Adult moth – May-Aug: often flying during daytime 	<p>BC James O'Neill</p>
<p>Larval food plants: Ragwort</p> <p>Adult nectar: a range of nectar sources</p>	 <p>BC Koen Thonissen</p>



Appendix 4 Butterfly Flight Periods for all species recorded on the Crescent

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Small Skipper									
Essex Skipper									
Large Skipper									
Brimstone									
Large White									
Small White									
Green-veined White									
Orange-tip									
White-letter Hairstreak									
Small Copper									
Common Blue									
(Holly Blue)									
Red Admiral									
Painted Lady									
Small Tortoiseshell									
Peacock									
Comma									
Speckled Wood									
Marbled White									
Gatekeeper									
Meadow Brown									
Ringlet									
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov

Appendix 5 Butterfly species identified and recorded on Highnam Butterfly Crescent from July 2018 to October 2020

Species	Maximum count on one visit
Small Skipper*	30 (some will have been Essex Skipper)
Essex Skipper*	1 (positive identification)
Large Skipper	6
Brimstone	2
Large White	3
Small White	8
Green-veined White	2
Orange Tip	4
Small Copper	1
Common Blue	10
Red Admiral	1
Painted Lady	7
Small Tortoiseshell	1
Peacock	3
Comma	7
Speckled Wood	3
Marbled White	80
Gatekeeper	30
Meadow Brown	47
Ringlet	53

*Both species are hard to identify apart, but both are present on the Crescent. It is standard practice to record as Small/Essex Skipper.

Appendix 6

GWT Coombe Hill reserve marker posts



Appendix 7 Highnam Butterfly Crescent – plant species identified

Flowering plants

bee orchid, bird's foot trefoil, cinquefoil, common centaury, corn parsley(?), creeping buttercup, creeping thistle, dandelion (one or two), dock, field bindweed, forget-me-not, goose grass, greater knapweed, ground ivy, hawk bit, hogweed, lesser celandine, lesser knapweed, lesser stitchwort, meadow buttercup, medick, nettle, oxeye daisy, pignut, prunella / selfheal, pyramidal orchid, ragwort, red clover, ribbed plantain, sorrel, spear thistle, speedwell, trefoil, violet, white campion, white clover, wood avens

Trees / shrubs

ash, bramble, briar rose, blackthorn, common elm, dog rose, early flowering plum, grey alder, guelder rose, hawthorn, hop, oak, privet, spindle

Grasses

fescues, bents, couch, cock's foot **plus others to be identified.**

Appendix 8 Other insects, birds, amphibians and mammals observed on site

Mammals: rabbits, roe deer, mice

Amphibians: toad

Birds: sparrow hawk, green woodpecker, blue tit, great tit, marsh tit, blackbird, chiffchaff, great spotted woodpecker, jay, magpie, song thrush, yellowhammer, wood pigeon, robin

Invertebrates: dragonfly, beautiful demoiselle, hoverflies, bumblebees, honey bees, ladybirds, harlequin ladybird larvae, stag beetle, ants, marble gall wasp, various species of spider, variegated oak aphid

Moths: mother shipton, cinnabar, larvae of buff tip

Appendix 9

History of involvement in the site

In July 2017 a large number of meadow butterflies were recorded on this 0.3 hectare area of grassland/scrub/woodland edge between Lassington Wood and the playing field.

Butterflies are good indicator species. Their presence in such high numbers showed that the area was a very good habitat, especially at a time of general declines in butterfly and other insect species. However, increasing encroachment of sapling trees, shading out the grasses, led to concern about the area's future.

A report was written to raise awareness and interest in the area and species recorded.

With no obvious response to the report, permission was sought from Tewkesbury Borough Council (land owner) to clear some of the saplings. TBC required this work to be insured and licensed and Butterfly Conservation Gloucestershire Branch gave their support and expertise to get this underway.

For insurance purposes, the licence agreement between TBC and BC restricted work parties to the use of hand tools only. Removal of encroaching tree saplings has therefore been a gradual process and this has had a positive outcome in allowing close observation of how the site works for wildlife.



Appendix 10

What has been achieved

- Casual Recording data regularly submitted. New butterfly species have been recorded on site. (21 species recorded to date)
- Much has been cleared, excessive bramble, ash, oak and other saplings, ragwort pulled to avoid spread. Zonal grass cutting and removal
- Evidence of flowering plants naturalising cleared areas
- Flowering plant survey conducted through 1 calendar year.
- 2 education evenings and one work party run with Highnam scouts. Leaders and youngsters involved and motivated, well received by parents as well.
- Work party for Duke of Edinburgh's Award students March 2020.
- Junior GWT wildlife group visited for education session summer 2018 and came back to help on a winter work party.
- More of the local community know about the area and the presence of butterflies, through chatting to passers-by and temporary seasonal notices explaining specific management.
- Regular articles have been published in the Village Link Magazine – giving general and local trends/what to look out for next month etc.
- There appears to be a growing acceptance locally that this habitat is there and is of value.
- A Butterfly Conservation Gloucestershire Branch Committee Member has attended and supported 2 local residents' wildlife interest group events
- There has been so much learned from working on the site. The plants, why it works, how and why it could support butterfly and moth species even better.
- Attendance on training courses.
- Support from 2 Borough Councillors with interest in the environment, on issues relating to licensing et al.
- None of this would have been possible without Butterfly Conservation Gloucestershire Branch's pool of knowledge and advice given in a generous and open manner.

Appendix 11

Butterfly Crescent site location, Highnam, Gloucestershire

Marked in red

Highnam Butterfly Crescent is 0.3 hectares of rough grassland/scrub backed by a mixed hedgerow which abuts Lassington Wood, beside the community's playing field at Highnam.



OS grid reference SO 80253 20198

Nearest post code: GL2 8LL

Area approx. 0.3 hectares

Older Google aerial view of the site – probably the year the football changing rooms were built. Shows how open the grassland was at the time.



Appendix 12 Photos of Highnam Butterfly Crescent



Varied species of flowering grasses



Winter grassland



Between the bramble stand and hedge –
before works



Between the bramble stand
and hedge – after winter work



Shade from dense ash saplings before
clearance



Dense saplings before clearance



Further bramble and sapling clearance in progress – autumn 2020



Extent of clearance end of 2020