

BATCHELORS FARM NATURE RESERVE

BIODIVERSITY REVIEW 2020

Dolphin Ecological Surveys
on Behalf of Burgess Hill Town Council



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1.0 Desk Study

A desk study of the biological information available for Batchelors Farm was based on a data request to the Sussex Biodiversity Record Centre (SxBRC) and consultation with local naturalists who know the site. The SxBRC report provides details of any records they have of protected and designated species that have been recorded from Batchelors Farm and its immediate surroundings.

The results include important information about several legally protected and priority species that occur on a site immediately adjoining Batchelors Farm. It is extremely likely that these species will also occur on Batchelors Farm which has very similar, contiguous habitats. Targeted fauna surveys in future would serve to confirm this assumption.

Key species protected or designated under UK law recorded from on or adjacent to the site are:

- Brown Hairstreak (2018 Batchelors Farm Nature Reserve) W&C Act Sch5, NERC S41
- Small Heath (2018 Batchelors Farm Nature Reserve) NERC S41
- Dormouse (2018 Batchelors Farmhouse) Hab Reg Sch2, W&C Act Sch5, NERC S41
- 7 bat species (2018 Batchelors Farmhouse) Hab Reg Sche2, W&C Act Sch5, NERC S41
- Lesser spotted woodpecker (2018 Batchelors Farmhouse) NERC S41 Red list
- Slow worm, grass snake, common lizard (2018 Batchelors Farmhouse) W&C Act Sch5, NERC S41

[Key to Level of Protection \(full details can be found in the SxBRC data report held by BHTC\)](#)

Hab Reg Sch 2 = Conservation of Habitats & Species Regulations 2010 Schedule 2 (European protected animals)

W&C Act Sch5 = Wildlife & Countryside Act 1981 Schedule 5 (Animals which are protected)

NERC S41 = Natural Environment and Rural Communities Act 2006 Section 41 (“species of principal importance for the purpose of conserving biodiversity in England”)

UKBAP = UK Biodiversity Action Plan Species of Principal Concern (Priorities for UK conservation action)

In 2018 it was found that Batchelors Farm supports a strong population of the Brown Hairstreak, a butterfly that depends on the presence of sympathetically managed blackthorn in scrub or hedges. Neil Hulme of Butterfly Conservation Sussex branch has provided clear advice on appropriate hedgerow management to benefit this species (see appendix).

David Cook, a local butterfly expert, kindly provided information on butterfly species that he has observed on the site in the period 2015-2020 (see appendix for list of species). As well as extensive brown Hairstreak egg laying these comprise records of 31 butterfly species observed on the site, which represents more than 50% of the Sussex butterfly fauna. This includes some habitat specialists and declining species that are of conservation significance, for example Green Hairstreak and Purple Emperor.

Although there are good records of butterfly species observed at Batchelors Farm, more comprehensive biological data derived from formal surveys as well as from ad hoc records would be invaluable. It could be used to increase understanding of the flora and fauna of the site so that the management regime can be fine-tuned if necessary.

2.0 Field Surveys & Habitat Assessments

2.1 Methods & Constraints

In July 2005 a vegetation survey and ecological assessment of Batchelors Farm was carried out and the results were included in the 2005 Management Plan report. This information was updated for the 2020 management plan review via a walkover vegetation assessment that was carried out in June 2020.

The results of the two assessments, carried out 15 years apart are not directly comparable for several reasons.

On both occasions similar walkover survey methods were used to assess the habitats but the species recorded during such surveys will not be comprehensive lists, rather they are representative samples. There were also seasonal timing differences between the two surveys (fieldwork was done in late July 2005 and in early June 2020).

In 2005 vegetation records were divided into grassland, hedgerows, ponds & stream habitats. An estimated measure of species abundance was given for plants in the hedgerow habitat, which at that time was taken to include the hedge bases and ditches.

Importantly the 2005 survey took place after the hay had been cut. This inevitably reduced the number of grassland plant species it was possible to identify in the meadows and meant that their relative abundance could not be estimated accurately. However, comparing the records suggests that the 2005 hedge base habitat included species from unmown meadow margins that were subsequently included in the meadow habitat in 2020.

In June 2020 the meadows had not yet been mown and during the walkover survey it was possible to record the relative abundance of species in the meadows with some confidence using the DAFOR scale (D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare, L used to denote local concentrations). Recording a measure of the relative abundance of meadow species is particularly important to help with future monitoring of change in grassland sward diversity.

2.2 Survey Results

The results of the 2020 habitat assessment walkover survey are summarised below as a series of target notes with an accompanying map. Photos of key features and habitats are included with the target notes.

The vascular plant species that were recorded from the different habitats on Batchelors Farm in 2005 and in 2020 can be found in a series of tables in section 3 where both the scientific and common names of species are shown.

Because of the differences in the way that vegetation was assessed and recorded in the two surveys the species tables must not be seen as direct comparisons, however they do give an indication of broad changes in habitat composition over time.

In general terms the habitats at Batchelors Farm appear to be developing very well under the management regime that has been adopted by BHTC since 2005. The meadows are gradually becoming more flowery and provide better habitat for a range of invertebrates and other fauna. The hedgerows are increasingly wide and dense under less intensive management and the wetland area has developed more rich and complex vegetation.

To measure the changes in species and habitat development would need greater survey and monitoring resources.

Batchelors Farm Target Note Map



2.3 Target Notes from the 2020 Habitat Assessment

The following target notes correspond to numbers shown on the Target Note Map.

TN1

New footpath entrance from Keymer Road with good tall herb and shrubby edges.



View eastwards along footpath to Keymer Road

TN2

A small meadow with a fairly diverse, flowery sward. Common knapweed present in places. Dense hedgerows around all its edges but signs of Ash die-back on the northern boundary.

TN3

Mixed planted trees and shrubs around the water tower fence include Hazel, Rowan, Oak, Hawthorn, Alder and Ash. Signs of Ash die-back. Some gaps that could be re-planted.

TN4

Free-growing scrubby boundary with Bramble banks, a ditch and an old fenceline. Adjoining land is Batchelors Farmhouse property, subject to planning applications and with records of numerous legally protected species.

TN5

Boundary comprises a line of mature trees, including oaks, on an old bank and ditch with a wide band of Nettle and Bramble.

TN6

Very rich hedgerow habitat with frequent suckering Blackthorn. Also has Hawthorn, Field maple, Spindle, Dogwood and a large, veteran, open-grown Oak. A major fallen limb from this tree has been retained in situ.

TN7

Large, eastern meadow with a flowery sward including a high proportion of clovers and Creeping cinquefoil. Downslope the sward is wetter with increasing amounts of Marsh foxtail. The southeastern corner has a slightly more coarse sward with locally frequent Hogweed and Creeping thistle. Targeted weed control may be needed in future.

TN8

Location of the seepage line noted in 2005 is now much less wet but marked by growth of coarse, tall herbs especially Hemlock water-dropwort, Nettle and Docks.

TN9

Southern boundary east of the stream is gappy with mature trees and sparse shrubs but with long views to the South Downs. In the southeastern corner there is an area of valuable scrub habitat and a wide bank of Bramble.



Bramble bank adjoining dense scrub

TN10

A rich hedgerow with much Blackthorn and Bramble. Likely to be particularly valuable habitat for nectaring insects.

TN11

A wide, diverse buffer habitat of tall herb and wetland vegetation adjoining the stream. Formerly very eroded, this area has been fenced and now supports frequent Hemlock water-dropwort, Great willowherb, Nettle, Hogweed and tussocky grasses. Potentially a very valuable area for a range of native fauna.



Tall herb vegetation in the wetland area

TN12

Southern boundary west of the stream comprises a wide band of scrub (much of it outside BHTC boundary) and mature trees. Recent scrub clearance to allow new fencing which should recover to become a dense, scrubby margin. Some supplementary shrub planting would be beneficial.

TN13

The western meadow, largest of the grassland areas with a network of well-used paths, on an east-facing slope. Likely to be a habitat rich in grassland invertebrates including bees, hoverflies, grasshoppers, crickets, spiders and butterflies. The sward is quite sparse and grass-dominated on the upper slopes with predominantly fine-leaved grasses such as Common bent, Red fescue and Sweet vernal-grass.

Wildflowers noted in this meadow include Common cat's-ear, Meadow buttercup, Red clover, Common sorrel and Goat's-beard. Ox-eye daisy is especially frequent in the low sward of the lower slopes along with Meadow vetchling, clovers and much Sweet vernal-grass. The southeastern corner has locally frequent Creeping thistle and Tall fescue, possibly indicating an area of disturbed ground. Paths around the entrance over the railway line in the northwestern corner are very trampled and were cracked in the dry summer of 2020 but are likely to become waterlogged and muddy in wet weather.



Bare ground near the site entrance looking south towards the orchard

TN14

A community orchard, planted in a fenced compound in the southwestern corner of the site. Some fruit trees have died and young, self-sown oaks are becoming established. Dense scrub and Bramble occurs along the railway embankment and is spreading into the herb-rich grassland sward. The remains of old anthills are visible and the grassland has an abundance of typical meadow wildflowers including Ox-eye daisy, Common knapweed, Common birds-foot-trefoil, Lesser stitchwort, Perforate St Johns-wort, Common sorrel and Selfheal.

Infrequent management of the grassland in the orchard has allowed an increase in tussocky grasses including False oat-grass and Meadow foxtail and Creeping thistle is locally frequent in this area. This sunny, sheltered and largely undisturbed area appears to be a particular hot-spot for butterflies and potentially other invertebrates as well as small mammals and reptiles. During the June 2020 survey visit Marbled White, Small Heath, Common Blue, Large Skipper and Meadow Brown butterflies were frequent here.



View of the orchard

TN15

The planted Oak avenue in the western meadow appears to be thriving.



The Oak avenue in the western meadow

TN16

Mature parkland Oak trees are prominent on the lower slopes of this meadow. These and other veteran and mature trees are an extremely important feature of Batchelors Farm with ecological, landscape and historic value. Further upslope there are some large blocks of deadwood and the remains of fallen old trees that have been retained. There appears to be some regrowth from the stumps and the deadwood is a valuable feature in its own right. There are abundant Oak seedlings in the vicinity of the old stumps and some of these could be protected to grow on as part of the next generation of parkland trees.



Deadwood and naturally regenerating oaks in the western meadow

TN17

The upper reaches of the stream are fenced and an almost impenetrable thicket of Willow, Bramble and tall herb vegetation has developed. This is fringed by diverse wetland vegetation including Reed sweet-grass, Hemlock water-dropwort and Pendulous sedge. The structurally complex vegetation provides an excellent undisturbed habitat for breeding birds. Immediately downstream this fenced wetland area grades into the unfenced area.

TN18

The unfenced wetland habitats on the western side of the stream include a wet flush with Bulrush, Gipsywort and Rushes on the site of the in-filled pond, tall herb fen and willow scrub. These merge with the drier grassland vegetation and Bramble scrub to form a structurally complex and species-rich part of the site. Native Black poplars planted near the old pond have thrived and more wetland plant species are present now than in 2005.



Wetland vegetation and Black Poplars around the old pond site

TN19

Near the central footbridge over the stream there is a small, eroded area where dogs paddle in the water. Damage to surrounding vegetation and habitats appears to be minimal and some wildlife, such as specialist invertebrates, will benefit from the availability of bare ground and so this use should be tolerated at its current level. Oak saplings are establishing on the edge of the wetland

area and there are some old anthills on the break of slope between the dry meadow and the wetland strip. The wooden hand rails of the footbridge have a lush covering of lichens.



Central footbridge and trampled stream bank

TN20

The northern edge of the large meadow comprises a dense, scrubby outgrown hedgerow with a good mixture of trees and shrubs. Within this boundary there is a standing dead tree which provides valuable habitat for wildlife including tree hole nesting birds, such as woodpeckers. A fine mature Oak is present at the eastern end of this boundary.



The northern boundary hedgerow

TN21

A small area of open structured, wet woodland is present in the corner of the small meadow, next to the upper extent of the stream. Silver birch, Alder and Oak are present over a ground flora of Bramble and Nettle.

3.0 Plants Recorded in 2005 vs 2020

3.1 Plants Recorded in the Meadows

The meadows at Batchelors Farm have been agriculturally improved in the past and still support some bulky, agriculturally productive grass species, for example Perennial rye-grass, Meadow foxtail and Yorkshire fog as well as a considerable amount of White clover. However, these indicators of sward improvement are much less prominent in the meadows than they were in 2005.

The grassland areas vary somewhat in character but consistently support frequent Meadow buttercup and clovers with a range of grasses that includes fine-leaved species such as Meadow barley, Sweet vernal-grass, Crested dogs-tail, Red fescue and Common bent.

Grasses are highlighted in green and the wildflowers that are most strongly associated with biodiverse Wealden meadows are highlighted in pink.

Scientific Name	Common Name	July 2005 (presence)	June 2020 (abundance)
<i>Agrostis capillaris</i>	Common bent	x	ALD
<i>Agrostis stolonifera</i>	Creeping bent	x	A
<i>Alopecurus geniculatus</i>	Marsh foxtail		LF
<i>Alopecurus pratensis</i>	Meadow foxtail	x	F
<i>Anthoxanthum odoratum</i>	Sweet vernal-grass		FLA
<i>Arrhenatherum elatius</i>	False oat-grass		LF
<i>Bromus hordeaceus</i>	Soft brome		O
<i>Carex hirta</i>	Hairy sedge	x	LF
<i>Centaurea nigra</i>	Common knapweed		OLF
<i>Cirsium arvense</i>	Creeping thistle	x	O
<i>Convolvulus arvensis</i>	Field bindweed	x	
<i>Cynosurus cristatus</i>	Crested dogs-tail	x	O
<i>Dactylis glomerata</i>	Cocks-foot	x	OLF
<i>Elytrigia repens</i>	Common couch	x	LF
<i>Festuca rubra</i>	Red fescue	x	F
<i>Glechoma hederacea</i>	Ground-ivy		OLF
<i>Heracleum sphondylium</i>	Hogweed	x	
<i>Holcus lanatus</i>	Yorkshire fog	x	F
<i>Hordeum secalinum</i>	Meadow barley	x	OLF
<i>Hypericum perforatum</i>	Perforate St Johns-wort		R
<i>Hypochaeris radicata</i>	Common cat's-ear		OLF
<i>Jacobaea erucifolia</i>	Hoary ragwort		R

Scientific Name	Common Name	July 2005 (presence)	June 2020 (abundance)
<i>Jacobaea vulgaris</i>	Common ragwort		O
<i>Lathyrus pratensis</i>	Meadow vetchling		R
<i>Leucanthemum vulgare</i>	Ox-eye daisy		OLF
<i>Lolium perenne</i>	Perennial rye-grass	x	FLA
<i>Lotus corniculatus</i>	Common birds-foot-trefoil	x	OLF
<i>Matricaria discoidea</i>	Pineappleweed	x	
<i>Oenanthe crocata</i>	Hemlock water-dropwort		LA
<i>Phleum pratense</i>	Timothy	x	
<i>Plantago lanceolata</i>	Ribwort plantain		O
<i>Plantago major</i>	Greater plantain	x	LF
<i>Poa trivialis</i>	Rough meadow-grass		OLF
<i>Polygonum aviculare</i>	Knotgrass	x	
<i>Potentilla reptans</i>	Creeping cinquefoil		OLF
<i>Prunella vulgaris</i>	Selfheal		LF
<i>Ranunculus acris</i>	Meadow buttercup	x	F
<i>Ranunculus repens</i>	Creeping buttercup	x	FLA
<i>Rumex acetosa</i>	Common sorrel	x	O
<i>Rumex crispus</i>	Curled dock	x	O
<i>Rumex obtusifolius</i>	Broad-leaved dock	x	O
<i>Schedonorus arundinaceus</i>	Tall fescue		LF
<i>Stellaria graminea</i>	Lesser stitchwort	x	O
<i>Taraxacum officinale agg.</i>	Dandelion	x	OLF
<i>Tragopogon pratensis</i>	Goat's-beard		OLF
<i>Trifolium pratense</i>	Red clover	x	OLF
<i>Trifolium repens</i>	White clover	x	F
<i>Urtica dioica</i>	Common nettle	x	OLA
<i>Vicia cracca</i>	Tufted vetch		O
<i>Vicia hirta</i>	Hairy tare		LF
<i>Vicia sativa</i>	Common vetch		O
Total number of grasses		11	16
Total number of meadow wildflowers		5	14
Total number of species recorded in the meadows		29	46

3.2 Plants Recorded in the Wetland Areas

In 2005 the wetland area included open water and very eroded pond banks with limited marginal and emergent vegetation as well as tall herb vegetation along the edge of the stream.

By 2020 the pond had been filled in and the wetland area had been fenced for some years to allow its vegetation to recover. Plants were thus recorded from contrasting wetland habitats in the two surveys.

In 2020 the trees and shrubs alongside the stream were not included as part of the wetland so these have been removed from the 2005 list to make the comparison more clear.

Species most strongly associated with aquatic, wetland or wet grassland habitats are highlighted in purple.

Scientific Name	Common Name	July 2005 (presence)	June 2020 (presence)
<i>Agrostis stolonifera</i>	Common bent	x	
<i>Ajuga reptans</i>	Bugle	x	
<i>Alopecurus pratensis</i>	Meadow foxtail		x
<i>Arrhenatherum elatius</i>	False oat-grass		x
<i>Calystegia sepium</i>	Hedge bindweed		x
<i>Carex hirta</i>	Hairy sedge	x	
<i>Carex otrubae</i>	False fox-sedge		x
<i>Carex pendula</i>	Pendulous sedge		x
<i>Ceratophyllum demersum</i>	Soft hornwort	x	
<i>Crepis capillaris</i>	Smooth hawk's-beard	x	
<i>Dipsacus fullonum</i>	Common teasel		x
<i>Epilobium hirsutum</i>	Great willowherb	x	x
<i>Galium aparine</i>	Common cleavers	x	x
<i>Glyceria maxima</i>	Reed sweet-grass	x	x
<i>Glyceria notata</i>	Plicate sweet-grass	x	x
<i>Heracleum sphondylium</i>	Hogweed		x
<i>Holcus lanatus</i>	Yorkshire fog		x
<i>Hypericum maculatum</i>	Imperforate St John's-wort	x	
<i>Juncus effusus</i>	Soft rush	x	x
<i>Juncus inflexus</i>	Hard rush	x	x
<i>Lemna minor</i>	Common duckweed	x	
<i>Lotus pedunculatus</i>	Greater birds-foot-trefoil	x	
<i>Lycopus europaeus</i>	Gipsywort		x
<i>Myriophyllum aquaticum</i>	Parrot's-feather (an invasive species)	x	
<i>Oenanthe crocata</i>	Hemlock water-dropwort		x

Scientific Name	Common Name	July 2005 (presence)	June 2020 (presence)
<i>Populus nigra ssp. betulifolia</i>	Black poplar (planted)		x
<i>Pulicaria dysenterica</i>	Fleabane		x
<i>Ranunculus repens</i>	Creeping buttercup		x
<i>Rubus fruticosus</i>	Bramble	x	x
<i>Rumex conglomeratus</i>	Clustered dock		x
<i>Rumex obtusifolius</i>	Broad-leaved dock		x
<i>Salix cinerea</i>	Grey willow	x	x
<i>Salix fragilis</i>	Crack willow		x
<i>Torilis japonica</i>	Upright hedge-parsley	x	
<i>Typha latifolia</i>	Bulrush	x	x
<i>Urtica dioica</i>	Common nettle	x	x
Total number of species associated with wetland habitats		12	15
Total number of species recorded in the wetland areas		20	25

3.3 Plants Recorded in the Hedgerows

In 2005 plants were recorded from the hedgerows, hedge bottoms and adjacent ditches. Relative abundance was only recorded from these areas of the site because the meadows had been mown, which prevented estimates being made from the grassland habitats. Many of the non-woody species that were recorded in these habitats in 2005 will have been included with the meadow flora in the 2020 survey.

The species totals in this table are particularly misleading because in 2005 considerably more survey effort was expended on recording along the hedgerows than in 2020.

The species of most ecological significance in the hedgerow habitats are the woody species and herbaceous plants typical of woodland ground flora. These are highlighted in blue.

Scientific Name	Common Name	July 2005 (presence)	June 2020 (presence)
<i>Acer campestre</i>	Field maple	x	x
<i>Acer pseudoplatanus</i>	Sycamore	x	
<i>Alnus glutinosa</i>	Alder		x
<i>Alopecurus pratensis</i>	Meadow foxtail	x	
<i>Anisantha sterilis</i>	Barren brome	x	
<i>Anthriscus sylvestris</i>	Cow parsley	x	x
<i>Arrhenatherum elatius</i>	False oat-grass	x	x
<i>Arum maculatum</i>	Lords-and-ladies	x	
<i>Betula pendula</i>	Silver birch		x

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Scientific Name	Common Name	July 2005 (presence)	June 2020 (presence)
<i>Brachypodium sylvaticum</i>	False-brome	x	
<i>Calystegia sepium</i>	Hedge bindweed	x	x
<i>Carex hirta</i>	Hairy sedge	x	
<i>Carpinus betulus</i>	Hornbeam	x	
<i>Cirsium arvense</i>	Creeping thistle	x	x
<i>Cirsium vulgare</i>	Spear thistle	x	x
<i>Cornus sanguinea</i>	Dogwood	x	x
<i>Corylus avellana</i>	Hazel	x	x
<i>Crataegus monogyna</i>	Hawthorn	x	x
<i>Dactylis glomerata</i>	Cocks-foot	x	x
<i>Deschampsia cespitosa</i>	Tufted hair-grass	x	
<i>Epilobium hirsutum</i>	Great willowherb	x	x
<i>Epilobium parviflorum</i>	Hoary willowherb	x	
<i>Euonymus europaeus</i>	Spindle	x	x
<i>Fraxinus excelsior</i>	Ash	x	x
<i>Galium aparine</i>	Common cleavers	x	x
<i>Geranium robertianum</i>	Herb Robert	x	
<i>Glechoma hederacea</i>	Ground-ivy	x	x
<i>Hedera helix</i>	Ivy	x	x
<i>Helminthotheca echioides</i>	Bristly ox-tongue	x	
<i>Heracleum sphondylium</i>	Hogweed	x	x
<i>Holcus lanatus</i>	Yorkshire fog	x	
<i>Hyacinthoides non-scripta</i>	Bluebell	x	
<i>Ilex aquifolium</i>	Holly	x	x
<i>Jacobaea vulgaris</i>	Common ragwort	x	
<i>Juncus effusus</i>	Soft rush	x	
<i>Juncus inflexus</i>	Hard rush	x	
<i>Lathyrus pratense</i>	Meadow vetchling	x	
<i>Lonicera periclymenum</i>	Honeysuckle	x	x
<i>Lotus pedunculatus</i>	Greater birds-foot-trefoil	x	
<i>Malus sylvestris</i>	Crab apple	x	
<i>Mercurialis perenne</i>	Dog's mercury	x	

Scientific Name	Common Name	July 2005 (presence)	June 2020 (presence)
<i>Phleum pratense</i>	Timothy	x	
<i>Potentilla reptans</i>	Creeping cinquefoil	x	
<i>Prunus spinosa</i>	Blackthorn	x	x
<i>Quercus robur</i>	Pedunculate oak	x	x
<i>Rosa arvensis</i>	Field rose		x
<i>Rosa canina</i>	Dog rose	x	x
<i>Rubus fruticosus</i>	Bramble	x	x
<i>Rumex crispus</i>	Curled dock	x	x
<i>Ruscus aculeatus</i>	Butcher's broom	x	
<i>Salix caprea</i>	Goat willow	x	
<i>Salix cinerea</i>	Grey willow	x	x
<i>Salix fragilis</i>	Crack willow		x
<i>Sambucus nigra</i>	Elder	x	x
<i>Schedonorus giganteus</i>	Giant fescue	x	
<i>Scrophularia auriculata</i>	Water figwort	x	
<i>Silene dioica</i>	Red campion	x	
<i>Solanum dulcamara</i>	Bittersweet	x	
<i>Stachys sylvatica</i>	Hedge woundwort	x	
<i>Tamus communis</i>	Black bryony	x	
<i>Torilis japonica</i>	Upright hedge-parsley	x	
<i>Urtica dioica</i>	Common nettle	x	x
<i>Veronica chamaedrys</i>	Germander speedwell	x	
<i>Viburnum opulus</i>	Guelder-rose	x	
<i>Vicia cracca</i>	Tufted vetch	x	
Total number of woody species (including climbers)		20	19
Total number of wildflowers typical of woodland habitats		12	2
Total number of species recorded in the hedgerows		61	31

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Appendix 1

Hedgerow Management in the Burgess Hill 'Green Belt' Guidance provided by Neil Hulme of Sussex Butterfly Conservation 2018

The extensive hedgerows found around the Burgess Hill 'green belt' are rich in blackthorn, a thorny shrub which grows particularly well on the heavy clay soils that shape the Low Weald landscape of the area. These hedgerows have considerable wildlife value and benefit a wide variety of insects, animals and birds.

Mid Sussex District Council and Burgess Hill Town Council have been working together, with advice from the charity Butterfly Conservation, to improve the way in which these hedgerows are managed. One of the most important species of butterfly found around the urban fringes of the town is the beautiful and elusive Brown Hairstreak. This national rarity has declined in distribution by 49%* since 1976 and its abundance has fallen by 58%* since 2005.

The annual cutting of blackthorn-rich hedgerows removes the vast majority of the Brown Hairstreak's eggs, which are laid on the outermost parts of the shrub and particularly on the young suckering growths which appear along the hedgerow base each spring.

By cutting just one third of the length of each hedgerow, or the entire length of one-in-three hedgerows each winter, the survival rate of the Brown Hairstreak butterfly can be greatly increased. This cutting regime will still prevent the hedgerows from getting out of control, as every third year the bushiest part is cut back to its original position, encouraging the start of the new regrowth cycle.

The advantages of managing the hedgerows in this manner go far beyond assisting the Brown Hairstreak alone. The sections which went uncut over the previous winter will bear far more of the beautiful white blossom which characterises this area every spring. The flowers provide a huge amount of nectar for the pollinating insects that are so vital to a healthy environment. They will also produce more of the shrub's fruit, the sloe, each autumn. This larder of food will help many birds and mammals survive the harsh conditions of winter.

The rotational cutting of just parts of the network of hedgerows will add greater diversity to their structure, providing a wider range of habitats suitable for a wider range of species. The bushier sections in the last year of the cycle are particularly important for nesting birds.

The Brown Hairstreak – Burgess Hill's butterfly

The majority of the UK's Brown Hairstreaks can be found in the three stronghold areas of the Low Weald, West Country and southwest Wales, with West and Mid Sussex probably supporting the strongest population. The town's 'green belt' is now home to such large numbers that the Brown Hairstreak can be claimed as 'Burgess Hill's butterfly'. However, its elusive habits make it hard to see.

This is our latest species of butterfly to emerge each year and the adults are seldom seen before August, flying until early October. The males emerge first and congregate high in the canopy of ash and other trees, where they feed on the honeydew secreted by aphids while awaiting the arrival of females. The males will seldom descend to ground level and are most active in the canopy during the early part of the morning.

The females, which differ from the males by having large, bright orange patches on their chocolate-brown wings, will only drop down to lay their eggs on blackthorn (or related species of *Prunus* such as bullace and plum) in very warm, sunny conditions. They slowly crawl amongst the shrubs, carefully selecting a location at the base of a spine or in a fork before laying one or two of their robust, highly ornate eggs. The best time to observe them is between mid morning and mid afternoon.

The egg is attached with a strong cement and robustly constructed to survive through the winter. The superbly camouflaged caterpillar hatches the following spring and grows slowly on a diet of blackthorn leaves throughout the summer, moulting its skin three times as it matures. When fully grown it will crawl to the ground where it forms a plump brown chrysalis. A new butterfly emerges after about four weeks and the fascinating life-cycle of the Brown Hairstreak begins again.

* Source: Fox et al. (2015). *The State of the UK's Butterflies 2015*. Butterfly Conservation and the Centre for Ecology & Hydrology, Wareham, Dorset

Appendix 2

Butterfly sightings at Batchelors Farm 2015-2020 provided by local naturalist David Cook

Small White

Large White

Green-veined White

Brimstone

Small Tortoiseshell

Red Admiral

Peacock

Comma

Orange Tip

Large Skipper

Small Skipper

Essex Skipper

Dingy Skipper

Small Copper

Purple Hairstreak

Purple Emperor

Brown Hairstreak

Green Hairstreak

Wall

Ringlet

Painted Lady

Meadow Brown

Clouded Yellow

Gatekeeper

Marbled White

Small Heath

Speckled Wood

Common Blue

Brown Argus

Holly Blue

Dark Green Fritillary