

# Weir Wood LNR – Whillet's Meadows Butterfly & Moth Report 2023

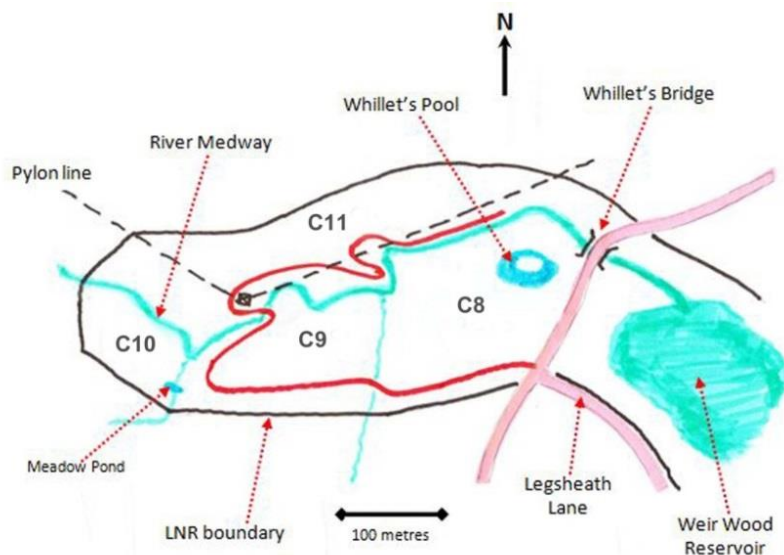
## Introduction

A butterfly recording path was established in 2011 through the meadows at Whillet's. Since then, we have published annual reports describing the management of the meadows and detailing the results of regular butterfly and moth transect counts & occasional moth surveys.

We have attempted to ensure a butterfly count was carried out at least once each week during the season (1<sup>st</sup> March to 31<sup>st</sup> October) and results are given for each species (Section 3). Moth species results are all reported in Section 4.

## 1. The recording area and technique

The meadows at Whillet's form the western end of the Weir Wood Local Nature Reserve (LNR) and Site of Special Scientific Interest (SSSI). Apart from the occasional open day there is no public access. In 2011 the Friends of Weir Wood Society initiated regular butterfly recording in these meadows and monitoring has continued each year since. The approximate route of the recording path is shown as a thick red line on the map, but in recent years we have recorded on a walk covering both sides of each meadow in a circular edge route that ensures we cover all areas and habitats. But are careful not to double count.



The main habitats, meadows C8, C9, C10 & C11 on the map, correspond to the similarly numbered compartments in the LNR Management Plan (2022 - 2027) and are described in the next section. All butterflies that could be seen and identified from or near the path were recorded, (this is not the same as traditional transect recording where observations are restricted

to a limited distance from the path, but the meadows have clear boundaries, so it is reasonable to take our counts as valid indicators of species presence and annual trends). The survey results are given in Section 3.

## 2. The meadows management history.

The 2011 & 2012 reports give the history of the meadows and the improvement actions taken. The 2013 to 2015 reports update the management taken in the meadow for those years.

During October 2015, seed was sown in parts of Compartment 8 & 9 to increase the flower diversity. (See earlier reports). The results in 2016 & 2017 showed no obvious increase in flowers or diversity from those seeded areas. As this seeding method did not give any noticeable improvements for the effort required, it was decided not to continue with any further area scraping and seed sowing.

Since 2018 we have seen some slow natural increase in the numbers and spread of some species of wildflowers previously sown, and we decided just to manage the meadows by allowing the spread of wildflowers by natural seeding.

Up to 2015 we had always cut 100% of the meadows which was the only way we could make it economic to have the hay baled and removed, but in June 2016 the access bridge into Compartment 11 was condemned for vehicles. This meant the only cutting we could carry out in 2016 was with a small lightweight grass cutting machine. These cuts were carried out in just the vital areas, the seeded areas sown in 2015 of Comps 8 & 9, plus all the transect paths, and a small area with Yellow Rattle in Comp 11 which benefits from a cut. The cuttings were not cleared as the small machine we used had cut them to a mulch, which was not ideal.

Unfortunately, the condemned bridge situation lasted until late September 2017. By that time, we had lost our baling contractor who had sourced his hay elsewhere and was no longer interested in taking ours. We then found we were unable to find a replacement contractor who would cut and bale at reasonable cost. As we were no longer under pressure to have a 100% cut, we now cut less of each meadow which actually gives some general wildlife benefit, so we decided to try and cut around 50% of the flower meadows each year on a rotational basis.

In 2017 & 2018 we trialled carrying out a tractor cut and then using our own volunteer labour to hand rake the cuttings into piles, which were hand collected and heaped at the edges of each meadow but the hand raking and piling to meadow edges was proving a very arduous task for our elderly volunteers so in 2019 we decided that hand raking the meadows by volunteers was really asking too much of them.

A contractor was finally found that could not only cut the meadow but also had a collection box attachment that would pick up the cuttings and could then pile them in a heap at the edge of each meadow. This was more expensive than just cutting but was affordable. At the end of September 2019, we cut over 50% of some meadows and were pleased with the results.

In both 2020 & 2021 we used the same contractor as in 2019 with a grass collection box and the cuttings were again heaped at the meadow edge. We cut approx. 40% to 60% of each meadow, and again this was arranged to be completed at the end of September and cuts were maintained to ensure all normally cut meadow areas received a cut on at least a 2 yearly cycle.

In 2022 we were hoping to be able to put some grazing cattle on the meadows for the winter, organised through the nearby Ashdown Forest grazing scheme, unfortunately the Ashdown Forest management eventually decided they were unable to carry this out for us that winter. We had put off cutting the meadows hoping for winter grazing instead and by the time we knew it was not going to be possible, we were too late to organise our usual contractor to carry out the cut & pick up service of previous years.

Unlike the very wet summer of 2021 we had a very hot dry summer in 2022 which meant the herbage and grass growth had been much reduced, so we decided to just arrange a cheaper tractor grass cut with no collection but only over a much more reduced amount of the meadows.

In 2023 it was clear that cattle grazing was not going to be an option, so in September we used our grass collection box contractor and cut at least 50% of each meadow to make up for the very limited cutting in 2022. We also carried out some summer hand cutting to reduce the increasing amount of Meadowsweet.

The details of the management and flora for each meadow for 2023 are detailed within the compartment reports that follow. All the habitat pictures for each compartment were taken by Bob Johnson in 2023.

## Compartment 8

We decided the Meadowsweet was still overly dominant although some cutting was done in 2022. So, in July 2023 some further Meadowsweet hand cutting and clearance work was carried out. We still retained stands of the plant in some areas of this meadow but the work meant future control of this species would be easier.

In September 2023 the right side of the main path to the river bridge was tractor cut and the arisings were heaped at the meadow edge which represented about 70% of this meadow which included the lower area. The left side of the wide access path being left uncut.

The dominant flora species are Meadowsweet, Knapweed, Marsh Thistle, St John's Wort, Sneezewort also Yellow Rattle, Tufted Vetch, Meadow Vetchling, Sneezewort.

There is a good mix of other flowers including: Common Birds-foot Trefoil, Bugle, Lesser & Greater Stitchwort, Meadow and Creeping Buttercup, Bluebell, Pignut, Goatsbeard, Catsear, Angelica, Hogweed, Hedge Bindweed, Ribwort Plantain, Creeping Cinquefoil, Tormentil, Clovers, Yarrow, Robin & Water mint. A Southern Marsh Orchid flowered again and was caged to stop it being eaten and it set seed.

Meadowsweet dominance will now be controlled as previously mentioned. Marsh Thistle occasionally needs to be controlled. Both Yellow Rattle & Common Birds Foot Trefoil densities remained low after being badly affected by being over topped by grass in 2021. Sneezewort & St John's Wort had another good year, but the Ragged Robin patch has been lost.

This meadow is usually good for Common Blue, Gatekeeper, Meadow Brown, Orange Tip & Ringlet, the top area is drier and normally has the lowest sward height and attracts more of the smaller butterflies and is usually a good area for the moth, Burnet Companion.



Taken on 8th May - Looking up towards the meadows access gate, in the foreground are the pink/white flowers of Cuckoo flower the food plant of Orange Tip butterflies.





Taken on 11th June – View down the meadow towards the river bridge . The foreground shows yellow of Buttercup, and orange of Sorrel, also the purple of Marsh Thistle amongst Foxtail & Cocksfoot grasses.



Taken on 2<sup>nd</sup> July - Looking down from access gate. Showing the purple of Knapweed, yellow of St John's Wort & White in distance of meadowsweet.





Taken on 9<sup>th</sup> December – From the bottom of the meadow alongside reed-bed area looking across the bottom and back towards access gate. The river having overtopped its banks and flooded out into the meadows.

## Compartment 9

In September 2023 we cut about 60% of the normally cuttable meadow area that included the areas not cut last year, and areas where bracken is evident that we are regularly cutting to try and reduce. The cut covered most of the right side of the top drier area above the ditch line with the sleeper bridge only leaving a small uncut area near the main path where Devils-bit Scabious was still in flower.

This top area above the ditch line has a good mix of the common meadow species and includes areas of Knapweed, Betony, which is notably increasing and spreading, Cat's Ear, Clovers, Ox-eye Daisy, Yellow Rattle, Common Sorrel and Ribwort Plantain. Devils-bit Scabious is also established in one area. Several beehives are also based in this area.

Below the ditch line are the lower wetter areas. There is an area to the lower far left (west side of transect) that is too rough and wet to machine cut and represents about 20% of the whole meadow that we never cut. This is amongst the wettest and marshiest areas within the compartment and contains plants such as Common Hemp-nettle, Meadowsweet, Purple Loosestrife, Marsh Ragwort, Gipsywort, Water Mint and a stand of Whorled Mint a water mint hybrid, Angelica and Hogweed. Ragged Robin has also been seen at one area near the fence. There is also now a small amount of Common Fleabane but Tussock Grass remains dominant in this area.

The only management of this uncuttable area is to remove sapling trees to maintain an open area, and there are some clumps of bramble which are cut to control their ground spread. We can give occasional winter flooding to the wet area to help maintain the marsh habitat, but in recent years with wet winters & high reservoir water levels flooding has not been necessary.



The central marshy area to the right of the transect path as far as the bridge was cut. This area contains mostly rushes and sedges and is dominated by Sharp-flowered Rush but also includes the more wet loving plants such as Lesser Spearwort, Marsh Bedstraw, Cuckoo Flower, Angelica and increasing amounts of Water Mint. A few Snakeshead Fritillaries still survive but within a few days of flowering they are eaten.

There is a grassier area below the central rush based area that was also cut. In this lower area Tufted Vetch is becoming more common and we have some Cranesbill. It is one of the areas where Small Heath butterflies and Brown Argus butterflies have been seen on the wing.

The area to the right-hand side of the bridge is grassier and drier and was left uncut. The area includes a good amount of Marsh Woundwort and Water Mint which is again increasing but is a favoured plant by many butterflies. There are several clumps of Stinging Nettles around the edges, usually used by Peacock & Small Tortoiseshell butterflies.

All the perimeter transect and access paths were also cut.

All cuttings in this meadow were picked up and heaped in piles at meadow edges.

Within the meadow's cuttable areas the poisonous invasive plants of Hemlock Water Dropwort & Ragwort are controlled by hand cutting. However, now it is no longer being cut & baled for fodder, the need for strict Ragwort control is less necessary, and we allow some Marsh Ragwort.

This meadow complex attracts a wide spread of butterfly species but particularly attracts Meadow Brown & Ringlet, Green-veined White, Small Copper, Small & Large Skippers.



Taken on 28<sup>th</sup> July – Looking from the bridge at the drier top area showing a purple mass of Betony and some yellow of St John's Wort and to the left a white sneezewort.





Taken on 28<sup>th</sup> July – Showing in foreground white of Angelica, yellow of St John's Wort, Purple of Knapweed, behind is white of meadowsweet and another Angelica.



Taken on 22nd August – Looking across meadow pond showing on the left flowers of Purple Loosestrife and in front foreground the light flowers of Water Mint.





Taken on 15<sup>th</sup> September – Taken from the bridge looking down the meadow from the bridge just after grass cutting, the uncut triangle to the right held still flowering Devils-bit Scabious.

### Compartment 10

This meadow is being intentionally left uncut, the ground being too uneven for the main cutting machinery to operate, except for a small pedestrian mower that is able to cut a perimeter path for refugia tin access. The only other cutting has been by hand to control any invading tree scrub.

This meadow contains mostly coarse tussocky grasses the main flora being the larger flowers such as Hogweed, Hemlock Water Dropwort, and Angelica, plus a stand of wild raspberries. The butterfly recording transect historically did not specifically include this meadow, but any butterflies seen are noted.



Taken on the 2<sup>nd</sup> August – In foreground is a Tufted Hairgrass with the white of Hemlock Water Dropwort showing behind.



## Compartment 11

In 2023 we cut approx. 50% of the usually cuttable meadow area and represented mainly the areas not cut last year.

The area to the east of the central barn owl box was left uncut apart from cutting perimeter access paths. This area has increasing Meadowsweet, Water Mint & Rushes. There is also an area in the far NE corner of the meadow which is never cut and is dominated by Meadowsweet and Hemlock Water Dropwort, this area we retain uncut for breeding Whitethroats which use the Hemlock as nest sites. Along the north eastern side field edge there is a stand of Common Fleabane that attracts Common Blue & Small Copper butterflies later in the season. Meadow Brown, Ringlet & Gatekeeper are the main species seen within the grassland. A Brown Hairstreak has been seen along the north side Blackthorn hedge/tree line in previous years.

The eastern recording path continues east into a wet uncut open glade which is often favoured by butterflies due to its sheltered nature. Water Dock is controlled in some areas to maintain some openness and suitability for butterflies. This area attracts Comma, Speckled Wood, Green-veined White, and an occasional Silver-washed Fritillary and other woodland species.

The meadow to the left of the barn owl box was cut as far as the ridge at the NW end of the meadow. The western areas of the meadow have improving flora with vetches & parsleys showing with Hogweed & Angelica, Knapweed, Meadowsweet & Bindweed, a little Yellow Rattle is present but meadow grasses remain dominant.

There is a section of meadow beyond the ridge which is more uneven and wet and unsuitable for cutting machinery so rarely has cutting been attempted, the main plant control is by hand removal of Hemlock Water Dropwort and tree saplings. An access path is maintained along the edge of this uncut area for refugia tin and butterfly recording.



Taken on 25th June – View looking back west from the eastern end of the meadow, showing mainly Soft Rush & Sharp flowered Rush.





Taken on 4<sup>th</sup> August – View direction same as on 25/6 picture. But now showing white of Meadowsweet & Hemlock Water Dropwort, purple of Water Mint & yellow of Greater Birds-foot Trefoil.



Taken on 4<sup>th</sup> August – A view of the western end toward the boundary hedge, with the uncuttable area in the background showing a purplish hue of Marsh Thistle heads. In the foreground is the white of Bindweed, Hedge Parsley & Angelica.





Taken on 4<sup>th</sup> August. View from within glade looking east. A large clump of water mint on the left foreground is very attractive to butterflies, with Water Dock & Rushes in front of the Willow trees.



Taken on 15<sup>th</sup> September. View from west looking east into eastern half just after cutting. The glade is behind the larger trees at the back.



### 3. Butterflies

We try and attempt at least one visit/week throughout the recording period from the 1st March to 31st October (35 weeks) if conditions are likely for butterflies to be on the wing. As some species are only on the wing for a short time, more visits are sometimes necessary and carried out in mid-summer on good weather recording days to try and gain accurate peak numbers rather than only one visit every week.

In 2023 we carried out 46 transect recording days, 2 more than in 2022, we did have some recording gaps in March only 2 visits were made, in September no visits after the 17/9, and in October only 2 recording visits were made.

Up to 2021 we had been maintaining at least 50 suitable weather recorded days throughout the season. The reduction may have some effect within the tables for numbers of days seen compared to earlier years when we had more recorders, but maximum counts will be less affected. The reduction being inclement weather or lack of availability of the recorders at certain times with only 2 regular recorders being available, namely Bob Johnson & Alastair Gray.

The 2023 butterflies first & last seen dates covered between 4<sup>th</sup> April and 15<sup>th</sup> October.

In 2023 March was mainly unfavourable weather and no butterflies were seen. Early October was okay but the weather then became wet during the latter part of the month.

In total 26 butterfly species were seen in 2023, 3 more than in 2022 from the 32 species that have been recorded in these meadows since full transects began in 2011.

There are three tables at the end of this section:

Table 1 shows Monthly peak counts for 2023 for each species seen.

Table 2 shows Annual peak counts for the last 5 years of the survey with a 5 yearly average.

Table 3 shows the previous transect years with each species annual peak counts for historical data comparison.

In 2007 the UK Biodiversity Action Plan (BAP) was produced which is a UK Government initiative that commits to protection of species and their habitat considered to be at risk and in decline. This does include several species of Butterfly that have been recorded within the meadows, these are highlighted as (BAP) where this applies.

The individual species tables are below, and show the results of our visits, with peak counts and first and last dates comparisons for the last five years (2019-2023).

#### Dingy Skipper – *Erynnis tages* (BAP)

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	23/8	1	1	23/8
2021	-	0	0	-
2022	-	0	0	-
2023	-	0	0	-

Not seen since 2020 and probably lost as a breeding species. The habitat is not ideal for this species.



### Essex Skipper – *Thymelicus lineola*

	First date	Peak count	Days seen	Last date
2019	22/7	9	2	29/7
2020	20/7	2	3	29/7
2021	18/7	1	1	18/7
2022	-	0	0	-
2023	27/6	2	3	20/7

This species looks very similar to the much commoner Small Skipper and only reliably identifiable by getting views of the antennae, we suspect this species may be under recorded.

### Small Skipper – *Thymelicus sylvestris*

	First date	Peak count	Days seen	Last date
2019	24/6	44	18	13/8
2020	23/6	29	17	9/8
2021	9/7	41	8	12/8
2022	7/6	36	10	7/8
2023	19/6	53	17	15/8

A good year with an increased peak count and long start to finish date.

### Large Skipper – *Ochlodes sylvanus*

	First date	Peak count	Days seen	Last date
2019	1/6	38	16	15/8
2020	28/5	10	24	9/8
2021	20/6	12	10	12/8
2022	12/6	14	12	31/7
2023	11/6	20	10	20/8

A good year with an increased peak count and small 2<sup>nd</sup> brood count in August giving good flight season.

### Silver Spotted Skipper – *Hesperia comma*

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	9/8	1	1	9/8
2021	-	0	0	
2022		0	0	
2023		0	0	

Not seen. A vagrant first seen in 2020. A chalk grassland loving species and probably just a one-off chance passing visit to the meadows.



### Orange Tip – *Anthocharis cardamines*

	First date	Peak count	Days seen	Last date
2019	17/4	8	14	1/6
2020	19/4	8	11	24/5
2021	11/4	6	12	1/6
2022	17/4	10	11	22/5
2023	20/4	15	11	6/6

A good year with peak numbers, and on the wing over a reasonable period.

### Marbled White – *Melanargia galathea*

	First date	Peak count	Days seen	Last date
2019	17/7	1	1	17/7
2020	6/7	2	2	11/7
2021	18/7	1	2	19/7
2022	3/7	1	2	10/7
2023	27/6	3	7	23/7

A good year as seen earlier and more often over a longer flight period and an increased peak count.

### Large White – *Pieris brassicae*

	First date	Peak count	Days seen	Last date
2019	17/6	2	15	21/9
2020	23/4	2	15	20/9
2021	9/7	1	6	6/9
2022	20/6	5	8	12/9
2023	3/5	4	11	15/9

Not a breeding species at the site as we do not have its caterpillar food plants. Probably only passing migrating butterflies attracted to the site for nectar feeding.

### Small White – *Pieris rapae*

	First date	Peak count	Days seen	Last date
2019	24/6	3	15	6/9
2020	6/7	3	14	13/9
2021	13/7	6	9	18/9
2022	17/4	4	11	21/8
2023	2/7	3	11	15/10

Another species more attracted to the site for nectar feeding than plants suitable for their breeding. Seen over a long period but more frequent in the Autumn.



### Green-veined White – *Pieris napi*

	First date	Peak count	Days seen	Last date
2019	13/5	6	21	21/9
2020	9/5	8	33	20/9
2021	11/5	8	17	12/9
2022	23/4	6	24	25/9
2023	22/4	14	21	5/9

A good year seen in increased peak numbers during late July and August, spring breeding generation numbers were still very low, but seen regularly over a long period.

### Clouded Yellow – *Colias croceus*

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	20/7	1	4	20/9
2021	24/8	2	1	24/8
2022	7/8	1	2	10/10
2023		0	0	

A fairly rare passage migrant species, not recorded this year.

### Brimstone – *Gonepteryx rhamni*

	First date	Peak count	Days seen	Last date
2019	24/3	2	3	22/6
2020	23/4	2	3	3/8
2021	29/3	2	7	5/9
2022	15/3	1	5	14/8
2023	15/4	3	6	15/8

A woodland rather than meadow species which is maintaining its average, high numbers are not expected. It is only seen during its early April/May & then 2<sup>nd</sup> brood in August breeding cycles.

### Speckled Wood – *Pararge aegeria*

	First date	Peak count	Days seen	Last date
2019	1/4	3	26	21/9
2020	2/6	4	14	20/9
2021	1/6	9	12	6/10
2022	17/4	4	23	9/10
2023	30/5	9	14	7/10

Primarily a woodland species which had a good high count from its August 2<sup>nd</sup> brood sightings, and though only occasionally seen in the Spring it was a good year for this species.



### Small Heath – *Coenonympha pamphilus* (BAP)

	First date	Peak count	Days seen	Last date
2019	27/6	2	5	1/9
2020	2/6	4	5	17/8
2021	8/6	5	10	12/9
2022	6/8	3	6	24/8
2023	30/5	1	3	27/8

Our wet habitat is not typical of areas you would expect to find this species. It was a poor year with 2 early sightings and one late sighting only.

### Ringlet – *Aphantopus hyperantus*

	First date	Peak count	Days seen	Last date
2019	27/6	132	14	4/8
2020	20/6	28	19	6/8
2021	9/7	54	8	4/8
2022	20/6	86	10	6/8
2023	20/6	19	9	3/8

It was a surprisingly poor year with the lowest peak count we have ever had, after what seemed a good result last year.

### Meadow Brown – *Maniola jurtina*

	First date	Peak count	Days seen	Last date
2019	17/6	97	28	13/9
2020	7/6	73	35	6/9
2021	20/6	55	21	12/9
2022	12/6	72	18	4/9
2023	11/6	101	25	15/9

A good year. Peak counts were in late June early July and numbers were reasonable over a good deal of the period they were on the wing.

### Gatekeeper – *Pyronia tithonus*

	First date	Peak count	Days seen	Last date
2019	8/7	76	17	26/8
2020	26/6	33	18	23/8
2021	13/7	46	12	29/8
2022	10/7	57	9	14/8
2023	2/7	47	15	27/8

Another good year. Although peak count was down on last year, it was a good flight season with the usual late emergence of this species. The high counts being during late July & early August.



### Red Admiral – *Vanessa atalanta*

	First date	Peak count	Days seen	Last date
2019	22/4	2	21	20/10
2020	23/4	4	24	6/9
2021	5/5	4	22	11/10
2022	20/3	2	14	9/10
2023	4/4	9	28	15/10

A good year, seen regularly over a long period. The later summer period was the more productive but regular well into the autumn, with large migration numbers being reported around the country. Unusually by chance one was noted very early before the recording season on 19<sup>th</sup> February.

### Painted Lady – *Vanessa cardui*

	First date	Peak count	Days seen	Last date
2019	22/6	4	15	1/9
2020	-	0	0	-
2021	20/6	3	3	9/8
2022	16/5	2	8	14/8
2023	10/7	1	2	11/7

A scarce migrant species with one being seen just on two days in July.

### Peacock – *Aglais io*

	First date	Peak count	Days seen	Last date
2019	29/3	5	15	21/9
2020	19/4	5	18	6/8
2021	19/4	6	17	9/10
2022	15/3	4	16	12/9
2023	9/4	16	20	15/8

A very good year, sightings over a long period and seen regularly with high peak numbers. There were two definite broods with counts of up to 7 in the spring and a high of 16 during August was our highest ever recorded peak count for this species.

### Small Tortoiseshell – *Aglais urticae*

	First date	Peak count	Days seen	Last date
2019	10/6	1	1	10/6
2020	23/4	3	13	6/8
2021	18/4	3	12	29/8
2022	10/4	2	11	21/8
2023	27/6	2	2	2/7

Numbers have again declined and would now appear to be in serious trouble as a breeding species at the meadows with a low count and a flight season of only a week. Nationally this species is in serious decline.



### Comma – *Polygonia c-album*

	First date	Peak count	Days seen	Last date
2019	29/3	4	21	6/10
2020	23/3	13	29	1/10
2021	19/4	5	14	5/9
2022	20/3	5	17	12/9
2023	4/4	9	24	7/10

Another good year, numbers were seen regularly over a long period with a peak count of 9 in July.

### Small Copper – *Lycaena phlaeas*

	First date	Peak count	Days seen	Last date
2019	13/5	4	27	6/10
2020	26/5	13	31	6/10
2021	11/5	8	24	27/9
2022	24/4	18	22	10/10
2023	5/6	6	20	7/10

A reasonable year, although peak counts were well down and it was later on the wing than usual, but was then seen over a long period with spring and autumn breeding periods and a peak count in August.

### Holly Blue – *Celastrina argiolus*

	First date	Peak count	Days seen	Last date
2019	22/4	1	5	26/8
2020	26/4	1	6	1/9
2021	11/5	1	3	22/8
2022	-	0	0	-
2023	10/7	5	9	3/9

This more woodland species has had a very good year, a peak count of 5 in August and seen fairly regularly around the meadows area often seen feeding on water mint.

### Common Blue – *Polyommatus icarus*

	First date	Peak count	Days seen	Last date
2019	26/5	12	29	21/9
2020	20/5	27	29	11/10
2021	8/6	5	17	12/9
2022	2/6	10	17	8/10
2023	5/6	5	10	15/9

A poor year. With a low peak count and reduced days seen the species has notably declined. There was very little of its Common Birds-foot trefoil food plant evident in the meadows this year which is probably the reason for its poor season.



### Chalkhill Blue – *Polyommatus coridon*

	First date	Peak count	Days seen	Last date
2019	29/7	1	1	29/7
2020	-	0	0	-
2021	-	0	0	-
2022	-	0	0	-
2023		0	0	

The unexpected sighting in 2019 was not repeated. It's normally a chalk grassland species but are fond of feeding on Knapweed & Scabious flowers which we have, so always a possibility of a vagrant visiting.

### Brown Argus – *Aricia agestis*

	First date	Peak count	Days seen	Last date
2019	26/5	1	2	8/8
2020	30/7	5	11	19/9
2021	10/8	4	8	6/9
2022	31/7	2	1	31/7
2023	11/6	1	6	3/9

After it was seemingly becoming established it declined in 2022, Although only singles seen we do have the Cranesbill food plant within the meadows. Although our habitat is not ideal for this species, so will be interesting to see if it can recover.

### Purple Emperor – *Apatura iris*

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	-	0	0	-
2021	-	0	0	-
2022	-	0	0	-
2023		0	0	

Not a meadow species, last seen in 2015 at the woodland end.

### Purple Hairstreak – *Neozephyrus quercus*

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	-	0	0	-
2021	23/8	1	1	23/8
2022	-	0	0	-
2023	16/7	1	1	16/7

Not a meadow species, usually reported from within the woodland glade in C11 but seen in C9 on bramble feeding. A species associated with frequenting the tops of oak trees.



Green Hairstreak – *Callophrys rubi*

	First date	Peak count	Days seen	Last date
2019	-	0	0	-
2020	-	0	0	-
2021	-	0	0	-
2022	-	0	0	-
2023		0	0	

Not normally a meadow species, last seen on 7<sup>th</sup> May 2016.

Brown Hairstreak – *Thecla betulae* (BAP)

	First date	Peak count	Days seen	Last date
2019	15/9	1	2	21/9
2020	-	0	0	-
2021	5/9	2	2	6/9
2022	-	0	0	-
2023	1/8	1	3	20/8

This very elusive butterfly which rarely flies is not directly a meadow species, laying its eggs on Blackthorn. But interestingly one was seen on three separate occasions during August.

Silver Washed Fritillary – *Argynnis paphia*

	First date	Peak count	Days seen	Last date
2019	5/7	1	3	15/8
2020	11/7	1	3	6/8
2021	12/8	1	2	5/9
2022	10/7	1	3	6/8
2023	1/8	1	1	1/8

Not a meadow species, and was seen near the woodland glade area.

Marbled White



Male Small Skipper

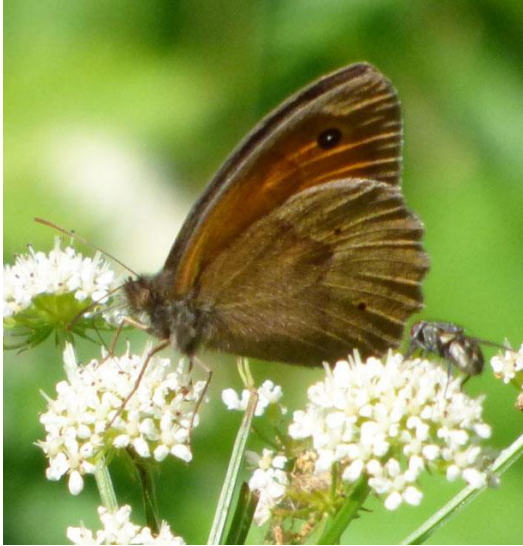


Small Heath





Meadow Brown



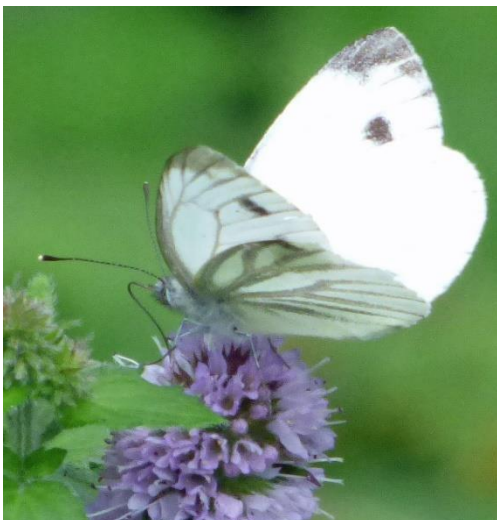
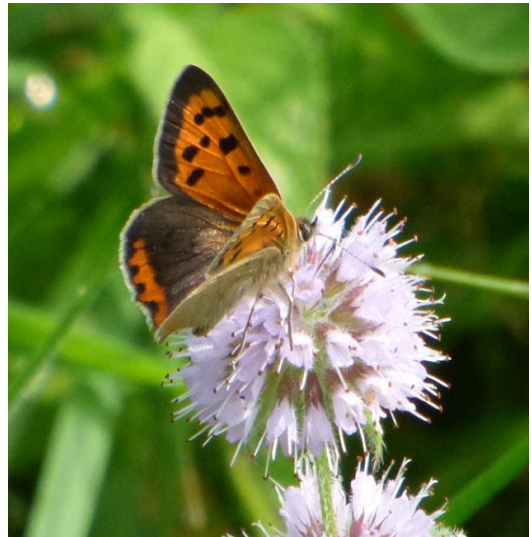
Male Orange Tip on Cuckoo flower



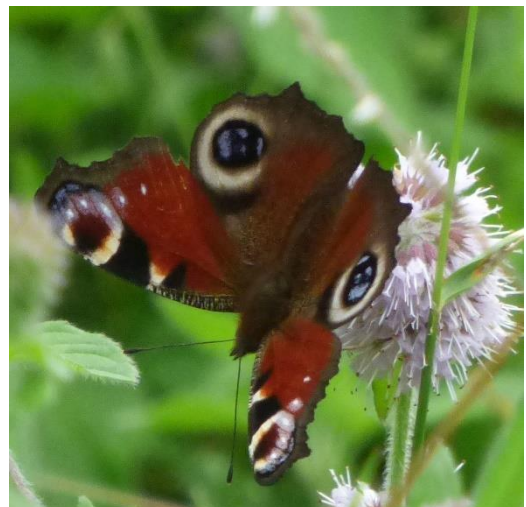
Comma on Water Mint



Small Copper on Water Mint



Green-veined White



Peacock

Table 1

WHILLET'S BUTTERFLY PATH - MONTHLY PEAK COUNT - 2023								
SPECIES	March	April	May	June	July	August	September	October
Essex Skipper				1	2			
Small Skipper				24	53	2		
Large Skipper				20	16	1		
Large White			1	1	4	3	1	
Small White					2	2	3	1
Green-veined White		1	1	1	12	14	1	
Marbled White				1	3			
Clouded Yellow								
Brimstone		1	2			3		
Speckled Wood				1		9	7	1
Small Heath			1	1		1		
Ringlet				17	19	1		
Meadow Brown				99	101	40	2	
Gatekeeper					47	38		
Silver-washed Fritillary								
Orange Tip		3	15	2				
Red Admiral		1	3	1	9	6	1	3
Peacock		2	7	1	11	16		
Small Tortoiseshell				1	2			
Comma		1	1	3	9	3		1
Painted Lady					1			
Small Copper				3	3	6	1	3
Holly Blue					2	5	1	
Common Blue				4		5	2	
Brown Argus				1	1	1	1	
Purple Hairstreak					1			
Brown Hairstreak						1		
COUNT DAYS per MONTH	2	6	7	7	8	9	5	2

The above Table 1 species monthly peak count list covers only those species actually seen during 2023. The total count days over the 2023 period was 46.

Although we try to carry out a butterfly survey once a week, weather permitting. During March & October a combination of poor weather and availability meant we only visited twice in March and twice in October the last visit date was the 15<sup>th</sup> October.



Table 2

## 5 YRLY ANNUAL PEAK COUNTS 2019-2023

SPECIES	2019	2020	2021	2022	2023	Average 2019 - 2023
Dingy Skipper		1				0.2
Essex Skipper	9	2	1		2	2.8
Small Skipper	44	29	41	36	53	40.6
Large Skipper	38	10	12	14	20	18.8
Silver-spotted Skipper		1				0.2
Orange Tip	8	8	6	10	15	9.4
Large White	2	2	1	5	4	2.8
Small White	3	3	6	4	3	3.8
Green-veined White	6	8	8	6	14	8.4
Marbled White	1	2	1	1	3	1.6
Clouded Yellow		1	2	1		0.8
Brimstone	2	2	2	1	3	2.0
Speckled Wood	3	4	9	4	9	5.8
Small Heath	2	4	5	3	1	3.0
Ringlet	132	28	54	86	19	63.8
Meadow Brown	97	73	55	72	101	79.6
Gatekeeper	67	33	46	57	47	50.0
Silver-washed Fritillary	1	1	1	1	1	1.0
Red Admiral	2	4	4	2	9	4.2
Purple Emperor						0
Painted Lady	4		3	2	1	2.0
Peacock	5	5	6	4	16	7.2
Small Tortoiseshell	1	3	3	2	2	2.2
Comma	4	13	5	5	9	7.2
Small Copper	4	13	8	18	6	9.8
Brown Hairstreak	1		2		1	0.8
Green hairstreak						0
Purple Hairstreak			1		1	0.4
Holly Blue	1	1	1		5	1.6
Common Blue	12	27	5	10	5	11.8
Chalkhill Blue	1					0.2
Brown Argus	1	5	4	2	1	2.6

Table 3

## WHILLET'S BUTTERFLY PATH - ANNUAL PEAK COUNTS

SPECIES	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Dingy Skipper	3				2			1		1			
Essex Skipper	1		1		6	1	1	1	9	2	1		2
Small Skipper	50	10	28	32	37	21	42	31	44	29	41	36	53
Large Skipper	11	4	4	7	22	3	9	12	38	10	12	14	20
Silver-spotted Skipper										1			
Orange Tip	10	17	4	10	8	3	2	5	8	8	6	10	15
Large White	1	2	18	2	2	14	5	3	2	2	1	5	4
Small White	3	2	8	8	11	12	3	7	3	3	6	4	3
Green-veined White	17	6	17	9	6	10	5	18	6	8	8	6	14
Marbled White							1		1	2	1	1	3
Clouded Yellow			1			1		1		1	2	1	
Brimstone		1	1	3	2	1	3	2	2	2	2	1	3
Speckled Wood	3	3	3	6	3	2	4	18	3	4	9	4	9
Small Heath			2		1		1		2	4	5	3	1
Ringlet	65	31	51	34	23	21	66	83	132	28	54	86	19
Meadow Brown	24	39	206	56	79	67	90	51	97	73	55	72	101
Gatekeeper	25	12	18	15	25	22	67	39	67	33	46	57	47
Silver-washed Fritillary								1	1	1	1	1	
Red Admiral	3	2	2	5	6	2	3	2	2	4	4	2	9
Purple Emperor					1								
Painted Lady	1	1			3	1	1	1	4		3	2	1
Peacock	1	1	2	3	6	1	3	3	5	5	6	4	16
Small Tortoiseshell	4	2	3	4	9	8	4	2	1	3	3	2	2
Comma	1	2	2	4	3	3	8	7	4	13	5	5	9
Small Copper	6	2	6	2	2	2	3	11	4	13	8	18	6
Brown Hairstreak								1	1		2		1
Green hairstreak						1							
Purple Hairstreak					1			4			1		1
Holly Blue			1		1	1	5	3	1	1	1		5
Common Blue	2	1	2	13	5	2	7	16	12	27	5	10	5
Chalkhill Blue									1				
Brown Argus									1	5	4	2	1

**White Admiral** - *Limenitis Camilla* is a woodland species not yet recorded in the meadows but has been recorded nearby in the past.

**Swallowtail Butterfly** – *Papilio machaon* Interestingly one was reported flying over the West End Car Park on 2/9/2019, an area not that far from Whillet's Meadows.



#### 4. Day flying moths.

The following day flying moth species were regularly looked for as part of the butterfly transect walks. The tables below show the last 5 years peak counts and first & last seen dates. Table 4 shows all the peak counts since 2011.

##### Burnet Companion – *Euclidia glyphica* (Day flying- Meadow species)

	First date	Peak count	Days seen	Last date
<b>2019</b>	26/5/19	12	6	30/6/19
<b>2020</b>	20/5/20	3	8	20/6/20
<b>2021</b>	23/5/21	3	6	27/6/21
<b>2022</b>	16/5/22	8	11	26/6/22
<b>2023</b>	16/5/23	6	6	19/6/23

Another acceptable year with a peak count of 6 and regular sightings over the normal flight season.

##### Mother Shipton – *Callistege mi* (Day flying- Meadow species)

	First date	Peak count	Days seen	Last date
<b>2019</b>	26/5/19	1	1	26/5/19
<b>2020</b>	24/5/20	1	2	1/6/20
<b>2021</b>	-	0	0	-
<b>2022</b>	8/5/22	3	5	2/6/22
<b>2023</b>	29/5/23	2	2	5/6/23

Only seen twice and within a short flight period, hopefully seeing two will mean some eggs are laid as the species remains vulnerable as a breeding species within the meadows.

##### Silver Y – *Autographa gamma* (Day flying- Meadow species - Migrant)

	First date	Peak count	Days seen	Last date
<b>2019</b>	26/5/19	1	8	30/8/19
<b>2020</b>	9/5/20	3	8	6/9/20
<b>2021</b>	27/6/21	4	8	18/9/21
<b>2022</b>	-	0	0	-
<b>2023</b>	19/6/23	16	6	20/7/23

A mainly migrant species, and although sightings were over a limited period a high peak count of 16 was a nice record after not being seen last year.

##### Narrow-bordered Five-spot Burnet – *Zygaena lonicerae* (Day flying- Meadow species)

	First date	Peak count	Days seen	Last date
<b>2019</b>	-	0	0	-
<b>2020</b>	-	0	0	-
<b>2021</b>	-	0	0	-
<b>2022</b>	-	0	0	-
<b>2023</b>	-	0	0	-

None reported again this year. Last recorded 25/7/15.

Six Spot Burnet – *Zygaena filipendulae* (Day flying- Meadow species )

	First date	Peak count	Days seen	Last date
<b>2019</b>	12/7/19	2	2	29/7/18
<b>2020</b>	29/7/20	1	1	29/7/20
<b>2021</b>	18/7/21	1	1	18/7/21
<b>2022</b>	5/7/22	3	2	10/7/22
<b>2023</b>	2/7/23	2	2	11/7/23

This was a new species in 2018 but is struggling to establish, a pair was seen which remains encouraging.

Cinnabar – *Tyria jacobaeae* (Day flying- Meadow species – *(BAP research)*)

	First date	Peak count	Days seen	Last date
<b>2019</b>	5/6/19	1	5	5/7/19
<b>2020</b>	24/5/20	4	4	20/6/20
<b>2021</b>	13/6/21	1	4	9/7/21
<b>2022</b>	-	0	0	-
<b>2023</b>	19/6/23	2	2	2/7/23

It was a better year. The Marsh Ragwort that grows within the meadows is a Cinnabar food plant but not its preferred food of Common Ragwort, so pleasing that 8+ Caterpillars were also seen on 11/7/23.



Taken on 10<sup>th</sup> July 2022 - Mating joined pair of Six Spot Burnet Moths.



A Six Spot Burnet Moth



## General

(BAP research) These are species that are on the UK Biodiversity Action Plan because they are species that have been highlighted for research by Butterfly Conservation as species that, although still common, are in rapid decline and of conservation concern.

Other not true day flying moths, but amongst those considered most easily disturbed macro moth species that we recorded in the meadows by day in 2023 were:

Common Carpet – 1 on 16/5 & 21/5

Shaded Broad Bar – 1 on 10/7 & 4/8 (BAP research)

Silver Ground Carpet – 1 on 19/6

Straw Dot – 1 on 19/6

Yellow Shell – 1 on 4/7 & 8/8

We occasionally see some true night flying species that sometimes get disturbed or are noted resting in the meadow area by day, those seen by day in 2023 were:

Large Yellow Underwing – 1 on 24/6

The day flying micro moths are generally not recorded because many of this group are difficult to ID, and we are unable to reliably identify to individual species. However a couple of species were seen and identification confirmed.

Mother of Pearl – 1 on 16/8 & 5/9

Brown China Mark – 1 on 27/6, 10/7, 20/8 & 5/9, with 2 on 4/8 and usually seen at Meadow Pond.

Although a few sessions of over-night moth box trapping have been carried out in the past, none were carried out this year.



Taken on 11<sup>th</sup> June 2023 - A Brown China Mark micromoth hanging on vegetation near the water. The view is of the wing underside and body. This species habitually hangs upside during the day when resting/hiding. Its caterpillar larvae are unusual as they are fully aquatic feeding on water plants.

Table 4

**WHILLET'S BUTTERFLY PATH - MOTH ANNUAL PEAK COUNTS**

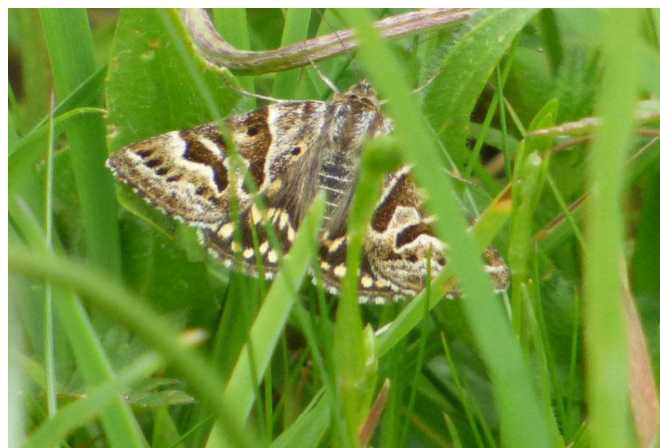
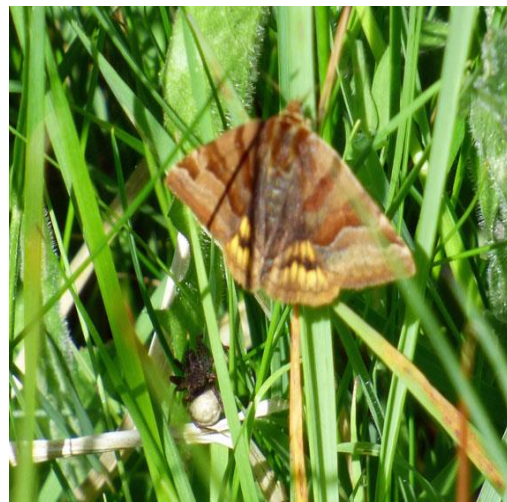
SPECIES	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Burnet Companion	1	3	1	5	4	5	7	7	12	3	3	8	6
Mother Shipton	1	0	0	1	1	1	1	2	1	1	0	3	2
Silver Y	0	3	3	1	2	10	2	8	1	3	4	0	16
Cinnabar	1	1	0	1	2	1	1	0	1	4	1	0	2
Narrow-bordered Five Spot Burnet	0	0	0	2	1	0	0	0	0	0	0	0	0
Six Spot Burnet	1	0	0	0	0	0	0	2	2	1	1	3	2

*A Black neck Moth – Lygephila pastinum was seen on 3/7/2011 but not recorded since.*

Silver Y with wings Open



Burnet Companion taken on 22/5/2022.



Mother Shipton taken on 24/5/2020.





Cinnabar Moth taken on 27/6/2023.

### **Acknowledgments**

The wildlife recording team consisted of *Bob Johnson and Alastair Gray* who carried out all the daytime butterfly transect and moth counts plus occasional inputs by Work Party volunteers. All the butterfly section pictures were taken by Bob Johnson & Alastair Gray. Moth section pictures by Bob Johnson.

Report by Bob Johnson - 15<sup>th</sup> December 2023