



Ymddiriedolaeth Natur
Sir Faesyfed
Radnorshire
Wildlife Trust

Pentwyn Farm

Butterfly Survey Results 2023



Orange-tip. Photo credit: Silvia Cojocar

A review of Butterfly surveys carried out at Pentwyn Farm as part of the Butterfly Monitoring Scheme (UKBMS) transects and methodology.
Report prepared by RWT volunteer Martyn Moore.

Methodology

This was the second year that regular Butterfly surveys had been carried out by Radnorshire Wildlife Trust Volunteers and Trainees at Pentwyn Farm. Two transects had been defined in 2022 to cover the north and south sides of the site, and the same routes and survey method were adopted in 2023. Regular transects were walked between May and September. Together the groups completed 12 transects surveys and managed to record a total of 719 butterflies during the season.

Survey Results and Species Abundance

Species	North	South
Common Blue	1	-
Dark Green Fritillary	3	-
Essex Skipper	1	1
Green-veined White	3	-
Holly Blue	-	1
Large Skipper	1	-
Large White	6	12
Meadow Brown	146	298
Orange-tip	3	6
Peacock	3	2
Red Admiral	2	6
Ringlet	32	101
Small Copper	1	2
Small Skipper	2	25
Small Tortoiseshell	3	11
Small White	8	33
Speckled Wood	5	-
Wall Brown	1	-
Total Result	221	498

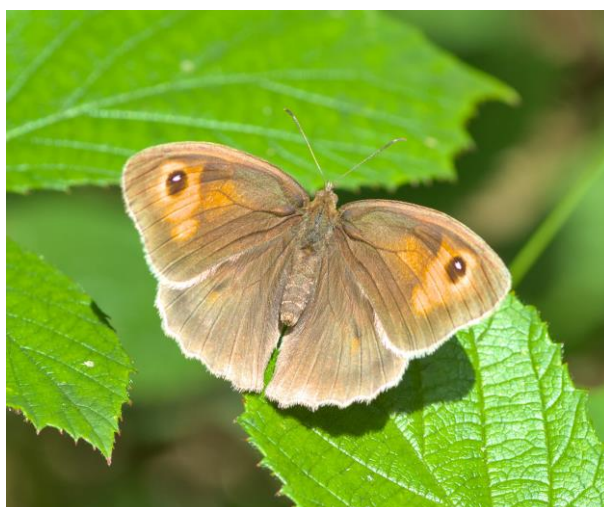
A total of 18 different species were recorded across both sides of the site, and by far the most common species was Meadow Brown, accounting for 62% of butterflies seen all year.

This is unsurprising since the Meadow Brown is one of the most common grassland butterflies in Wales. It can be seen on the wing from June to September, at Pentwyn the peak in numbers for this species were noted on surveys carried out in early July.

The second-most common species was Ringlet, accounting for 18% of sightings. Ringlets are relatively common in Wales and use a variety of sheltered habitats such as woodland edges, meadows and hedgerows. Other regularly sighted butterflies were Small Skipper and Small White.

The least common species were Common Blue, Holly Blue and Wall Brown, these each had only one sighting throughout the survey period.

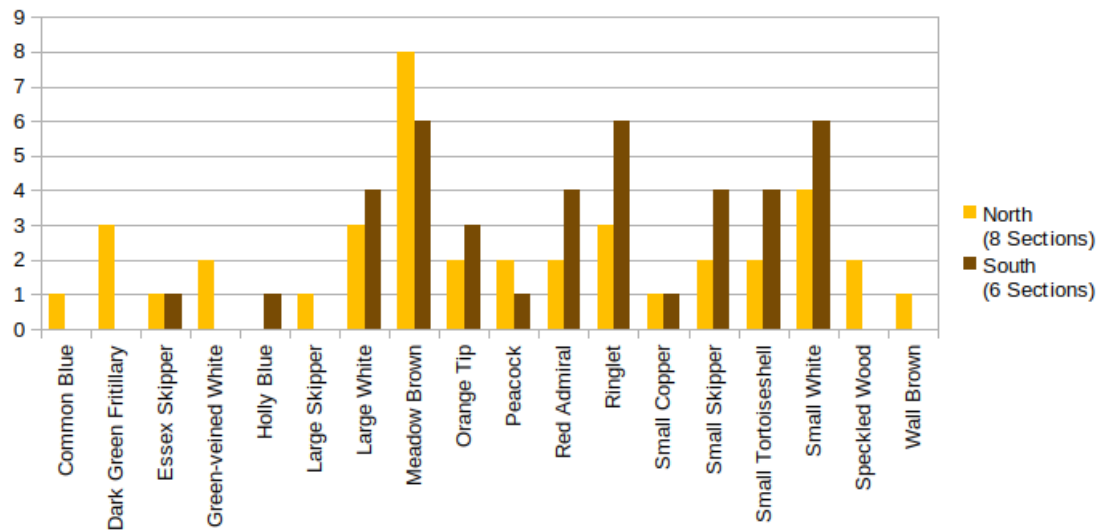
In most species a larger abundance was often seen on the south side of the farm, this is likely due to the lower altitude of the south transect and more sheltered grassland areas. However, the greatest diversity in species was observed on the north transect, a reflection of the greater variety of habitat across the north side, comprising of areas such as Bracken and scrub on the steep slopes leading down to the Lugg, marshy grassland, semi-improved grassland, and the sheltered wooded areas surrounding the Dingle.



Meadow Brown

Species Distribution

The following chart shows the species distribution across the site by counting the number of transect sections where each species was seen.



11 species were recorded in both the north and south sides of Pentwyn, these include the ubiquitous Meadow Brown that was the only species recorded in every section of both transects. Small White and Ringlet were recorded in all sections of the south transect, but less so on the north side. Large White, Small skipper and Red Admiral were also widely distributed. Small Copper and Essex Skipper were noted of both sides despite the relatively low number of records for these species.

6 species were recorded exclusively on the north side of the farm. Green-veined White are a relatively common species in Wales and typically found in most habitats, it is unclear why they are absent from any part of the site and only seen in such small numbers. Likewise with the Common Blue, a butterfly that inhabits a wide range of grassy habitats.

Dark-green Fritillary was recorded in 3 sections, but only on the north transect. This species is a strong flyer and can tolerate windy conditions, its preferred habitat being the more exposed grassy sites, accordingly the majority of sightings were along the top of the north transect. It's larval food-plant is Common Dog Violet. According to the site botanical survey Dog Violet is most abundant in the lower fields 14 and 15 on the north side, however the adult butterflies were not observed in these sectors.

Speckled Wood was seen in two sectors of the north transect but in mostly in the lower areas at the end of the transect (section 8). This species is typically found in open areas of woodland, these habitat requirements correlate with the shelter provided in the Dingle area of site.

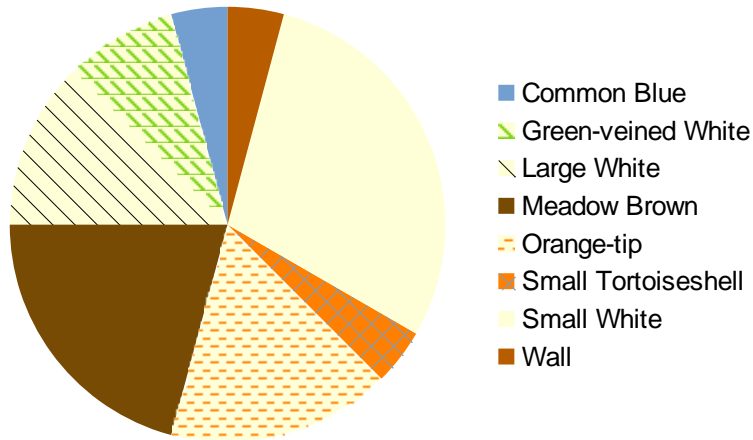
Only 1 species, Holly Blue, was seen exclusively on the south side. Associated with Holly during the early season and Ivy during the later months, this single sighting was on 15th August so would have been part of the year's second brood.



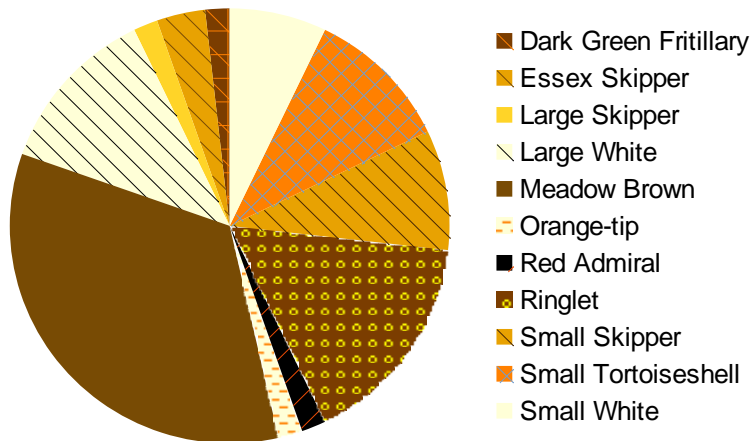
Holly Blue

Seasonal Changes

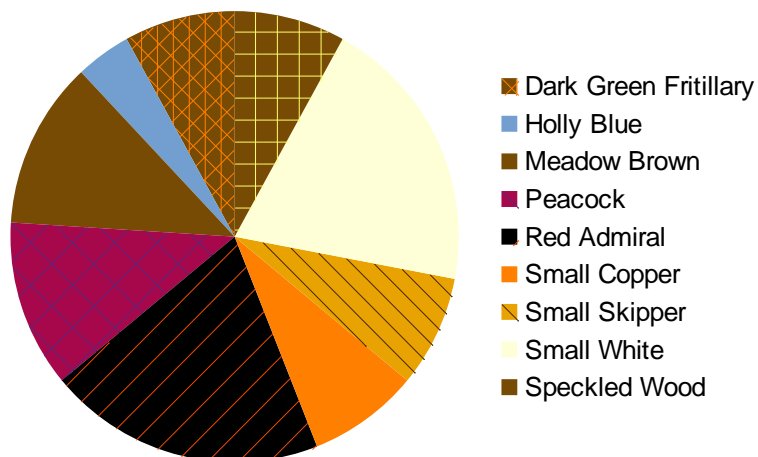
Comparing the proportions of species seen at different parts of the season provides us with some extra details; initially during the early part of the survey season, considered here as from **May to mid-June**, the most common species were Small White, with many Orange-tip, Large White and Meadow Brown also on the wing.



In the period from **mid-June to end of July**, Meadow Brown took over as the most common species, and Large White remained abundant. Ringlet butterflies were seen in good numbers, and only during this period. Sightings of Small White were reduced, and there was a sharp drop-off in Orange-tip butterfly sightings.



In **August and September**, the most commonly seen butterfly was again the Small White, this resurgence in sightings is interesting as it reflects the way this species has two generations each year. Red Admiral became more abundant, Peacock and Small Copper butterflies were only recorded during this later part of the season.



Individual Records

In addition to the formal surveys conducted by the volunteers and trainees, other visitors to Pentwyn also made their own records of the butterflies they had encountered. Many of these were submitted via the LERC Wales App. These records have proved to be important as two species were noted by visitors that were not otherwise seen during the regular transects. These were Painted Lady on 23rd June, and Comma on two occasions 13th July and 29th September, both species were recorded on the north side.

Comparison with previous year's

Monitoring at Pentwyn began in 2022, so it is possible to compare this year's results with the previous season, although the period is too short to reveal any particular trends. Combining transect data with the visitor's records provides the following summary. Note this is of the number of records made, not the quantity of individual butterflies seen.

Common name	Species name	Number of records	
		2022	2023
Brimstone	<i>Gonepteryx rhamni</i>	1	-
Comma	<i>Polygonia c-album</i>	-	2
Common Blue	<i>Polyommatus icarus</i>	-	1
Dark Green Fritillary	<i>Speyeria aglaja</i>	-	3
Essex Skipper	<i>Thymelicus lineola</i>	1	2
Gatekeeper	<i>Pyronia tithonus</i>	3	-
Green-veined White	<i>Pieris napi</i>	5	5
Holly Blue	<i>Celastrina argiolus</i>	-	1
Large Skipper	<i>Ochlodes sylvanus</i>	1	1
Large White	<i>Pieris brassicae</i>	16	10
Meadow Brown	<i>Maniola jurtina</i>	45	38
Orange-tip	<i>Anthocharis cardamines</i>	3	6
Painted Lady	<i>Vanessa cardui</i>	-	1
Peacock	<i>Aglais io</i>	1	4
Red Admiral	<i>Vanessa atalanta</i>	3	6
Ringlet	<i>Aphantopus hyperantus</i>	18	11
Small Copper	<i>Lycaena phlaeas</i>	1	2
Small Pearl-bordered Fritillary	<i>Boloria selene</i>	1	-
Small Skipper	<i>Thymelicus sylvestris</i>	2	8
Small Tortoiseshell	<i>Aglais urticae</i>	9	7
Small White	<i>Pieris rapae</i>	18	16
Speckled Wood	<i>Pararge aegeria</i>	-	2
Wall	<i>Lasiommata megera</i>	3	1
	Total:	131	127

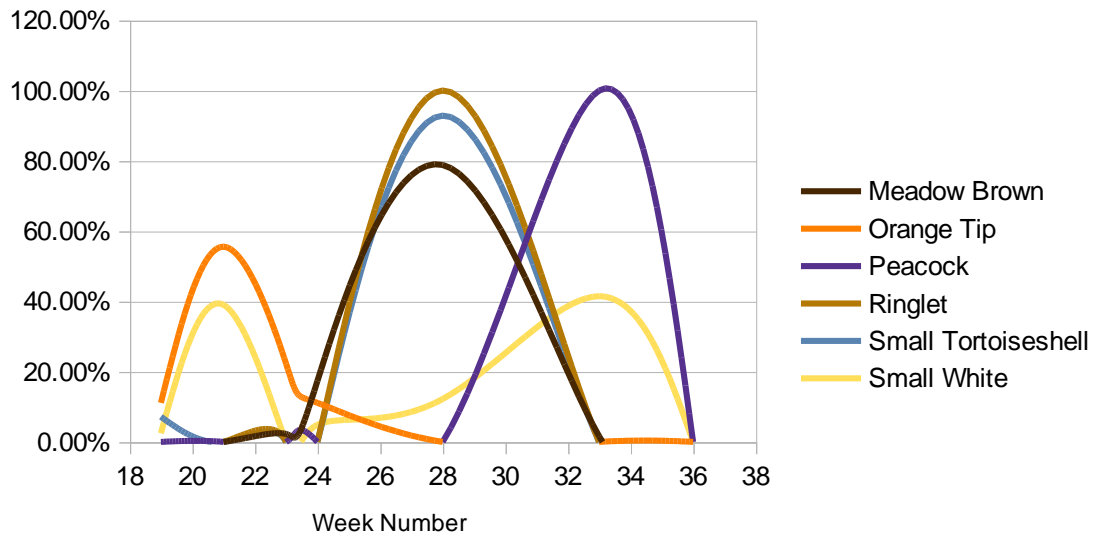
In 2022 there were fewer survey days carried out over a shorter season between May and August, despite this there were still more sightings recorded than in 2023. The particular species that show a drop in numbers were common mid-summer Butterflies such as Large White, Meadow Brown and Ringlet.

2023 was notable for having a hot June, following by dull and wet unsettled weather through July and August. This has likely affected the abundance of summer flying species. Sightings of Orange-tip (an early species) and also Small Skipper and Peacock (later season species) were less affected by the mid-summer weather and were recorded in good numbers.

There are 3 species recorded in the previous year that were not found in 2023: Brimstone, Gatekeeper and Small Pearl-bordered Fritillary.

Phenology

As noted previously, the Small White typically has two generations per year in Radnorshire, and this can be seen if we plot when the sightings were made across the season. The following chart shows the relative abundance in a given week for those species that had a good number of records.



Meadow Brown and Ringlet were both observed to peak in mid-summer. Orange-tip was most abundant in May, and Peacock was on the wing late in the season. While these seasonal characteristics may be well known to experienced observers, it is nice to see that the details replicated in our survey.

A single individual Small Tortoiseshell was recorded at the start of the survey period in week 19 (early May), with the main peak of sightings made in week 28 (early July). In this species the adult butterflies hibernate over-winter and are able to be on the wing in March.

In 2023 the survey period started with the first transect carried out on 12th May, and so the peak of Small Tortoiseshell first generation was not effectively covered during the transects. The emergence of the new generation in the summer was well recorded. In future years it is recommended to begin the survey period in April.



Small Tortoiseshell

Acknowledgements

Thank you to the volunteers and RWT trainees that spent the summer walking the site and gathering records. The results of these transects have all been submitted to the UK Butterfly Monitoring Scheme. To see how these records are being put to good use then check out the 'State of UK Butterflies 2022' report produced by UKBMS.

References: UK-BMS data used for analysis / Pentwyn Phase 1 Habitat Survey 19/09/23 for local habitat details / Field by Field Botanical Assessment of RWT Pentwyn Farm, Autumn 2021 / www.ukbutterflies.co.uk for national habitat and seasonal data / photographs by Martyn Moore.