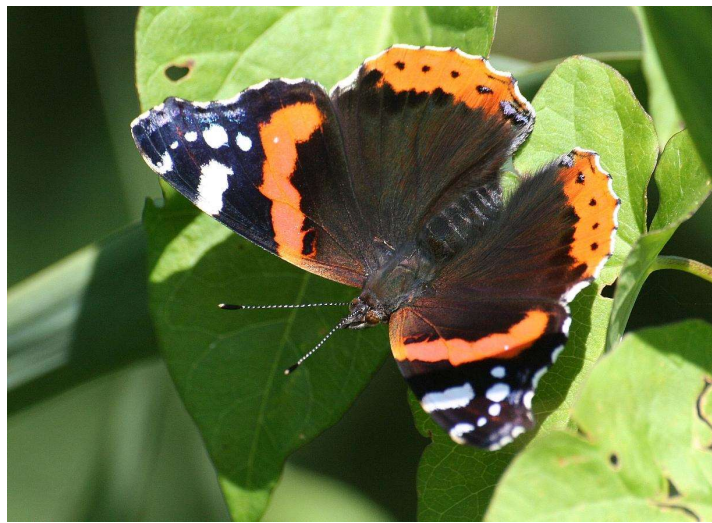


Manor Woods Valley Local Nature Reserve

Butterfly Report

2023



**Surveyed by Rachael Harvey and Peter Loy-Hancocks
Report prepared by Peter Loy-Hancocks**

Manor Woods Valley Group



1. Introduction and Methodology

Manor Woods Valley Group members, Rachael Harvey and Peter Loy-Hancocks, undertook three butterfly survey visits in Manor Woods Valley Local Nature Reserve during the summer of 2023. This was the fifth consecutive survey year. In order to facilitate comparisons within and between years, seven transects were established within the site in 2019 (see figure 1). These same transects were followed in subsequent years.

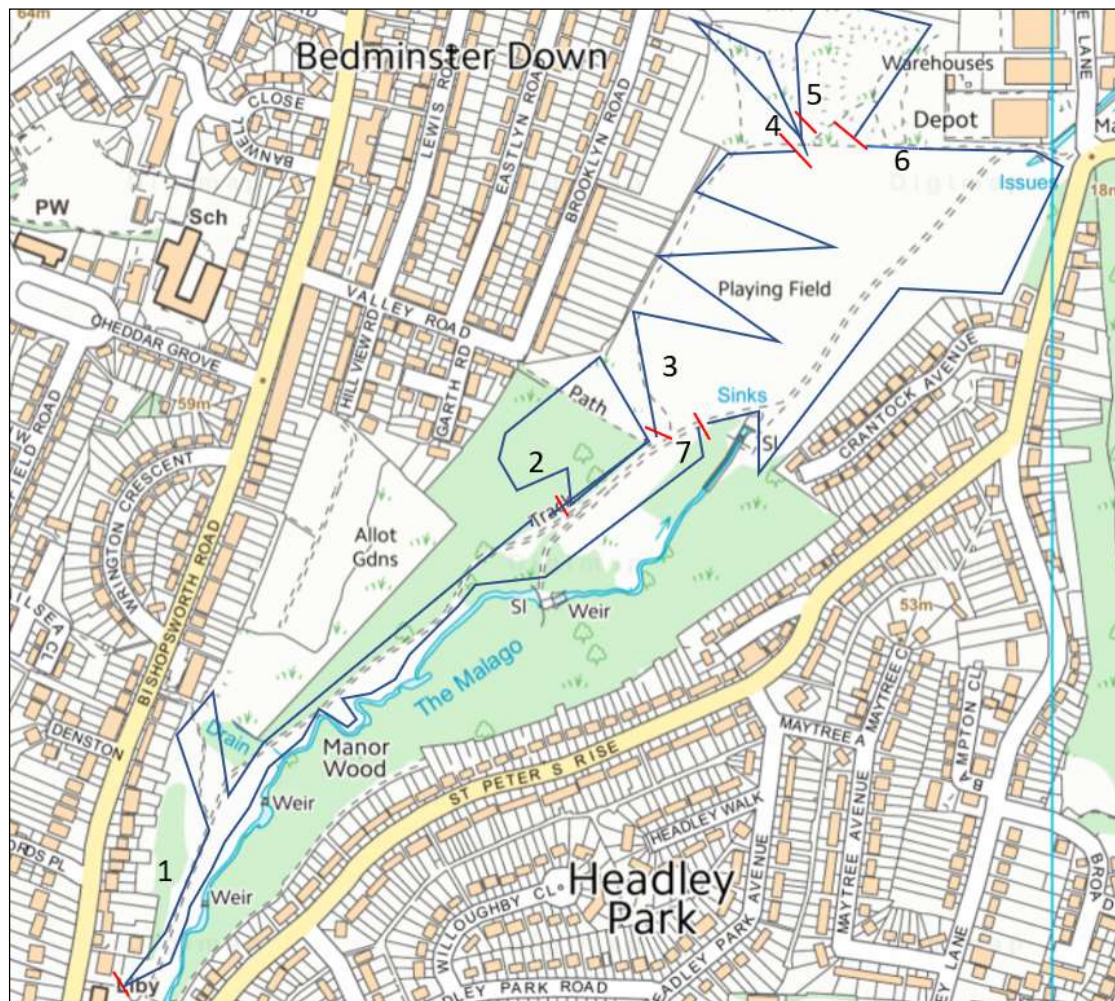


Figure 1: Butterfly survey transects within Manor Woods Valley

The numbers of each butterfly species within a 'virtual' approximately 6m wide and 6m long box, centred on the surveyor as they walked, were noted on to field recording forms. These records form the basis of this report. All relevant records were submitted to Bristol Regional Environmental Records Centre (BRERC).

Additional records were obtained through casual observations made by the surveyor and others at different times throughout the year.

2. Results

Three survey visits were made in 2023.

The first survey was conducted around mid-day on 14th June, under a clear sky, at 25°C, on a breezy day. A total of 56 butterflies of six species were recorded. The counts are summarised in table 1.

Species	Transect							Total
	1	2	3	4	5	6	7	
Large White					1			1
Common Blue			1	2				3
Red Admiral				1				1
Meadow Brown	7	2	26	5	2	3	1	46
Speckled Wood	1				1		1	3
Large Skipper			1		1			2
	8	2	28	8	5	3	2	56

Table 1: Butterfly counts on 14 June 2023

The second survey was conducted in early afternoon on 25th July, under 6/10 cloud cover and a temperature of 18°C with a light breeze. A total of 67 butterflies of twelve species were recorded. These counts are summarised in table 2.

Species	Transect							Total
	1	2	3	4	5	6	7	
Large White		1			1	1	1	4
Small White	2	1				1	1	5
Common Blue			6					6
Red Admiral	3							3
Painted Lady								0
Meadow Brown	1		22	3	4			30
Gate Keeper		1			5			6
Ringlet				2				2
Speckled Wood	1	1			1			3
Small/Essex Skipper			4					4
Peacock					2		1	3
Fritillary						1		1
	7	4	32	10	8	3	3	67

Table 2: Butterfly counts on 25 July 2023

The third survey was conducted in mid-afternoon of 15th August, under 2/10 cloud cover, in a gusty breeze and at 21°C. A total of 72 butterflies of eight species were recorded. These counts are summarised in table 3.

Species	Transect							Total
	1	2	3	4	5	6	7	
Large White	3	1	1	1	2		5	13
Brown Argus							1	1
Common Blue			12	4	1			17

Red Admiral	1							1
Meadow Brown	2	20		1	2			25
Gate Keeper	1				1			2
Speckled Wood		3		6		3	1	13
	3	5	36	13	5	3	7	72

Table 3: Butterfly counts on 15 August 2023

The total number of butterflies recorded in each transect are summarised in table 4. The overall total of butterflies recorded during the 2023 survey was 195.

	Transect							Total
No.								
Butterflies	1	2	3	4	5	6	7	
14-Jun	8	2	28	8	5	3	2	56
25-Jul	7	4	32	10	8	3	3	67
15-Aug	3	5	36	13	5	3	7	72
Total	18	11	96	31	18	9	12	195

Table 4: Total butterflies in each transect 2023

Brimstones, Orange Tips and Holly Blues were note earlier in the year, before the monitoring visits took place.

3. Discussion

As a mostly highly visible group of insects, butterflies are relatively easy to identify and count. Their numbers can vary greatly from year to year, but when monitored over a number of years, general population trends can be detected. In this context, butterflies are a good way of monitoring the general heath of the natural environment.

The ‘all-species’ butterflies index for the UK shows significant declines in both the long and short term of 15% and 2% respectively. This assessment of change is made on an analysis of the smoothed trend; long-term (1976 to 2022) and short-term (2017 to 2022). Since 1976, the smoothed trend for habitat specialist butterflies in the UK has declined significantly by 30%. Over the same period, the smoothed trend for species of the wider countryside shows no significant change. Since 2017, both short-term trends show no significant change. This indicator is comprised of two multi-species indices compiled by Butterfly Conservation (BC) and the UK Centre for Ecology & Hydrology (UKCEH) from data collated through the UK Butterfly Monitoring Scheme (UKBMS) including from the Wider Countryside Butterfly Survey (WCBS).

In 2022 scientists from Butterfly Conservation published the new Red List, which assesses all the butterfly species that have bred regularly in Great Britain against the rigorous criteria of extinction risk set out by the International Union for Conservation of Nature (IUCN). Of the 62 species assessed, four were noted as being extinct in Britain (Black-veined White, Large Tortoiseshell, Large Copper, and Mazarine Blue) with 24 (41% of the remaining species) classed as threatened (8 Endangered, 16 Vulnerable) and a further five (9%) as Near Threatened.

It may be worth noting that in 2023, several Black-veined Whites were recorded in Southeast London. These probably originated from an unauthorised release at this location. Only time will tell if a self-sustaining population develops. Also, Large Tortoiseshells do seem to be forming self-sustaining colonies in one or two places in Southern England. This may well be the start of a full scale recolonisation by this latter species.

With over 1200 recorded butterfly sightings, over a five-year period, it's possible to draw some conclusions about butterfly habitat preferences, numbers and species compositions in Manor Woods Valley.

It appears that 2019 was a particularly good year for butterflies in Manor Woods Valley; with 443 being recorded in that year compared with 202 (adjusted for three visits) in 2020, 219 in 2021, 170 in 2022 and 195 in the current year (see table 5).

The relatively low number of butterflies recorded in 2022 may be due to the early senescence of adult and caterpillar food plants due to the exceptional dry conditions that prevailed in summer this year. Total numbers recovered slightly in 2023, possibly due to the wetter, summer growing season, allowing meadow grasses and flowers to remain green, and therefore available as food plants for caterpillars, for a longer period.

The survey transects vary in length; when this is factored-in and the number of butterflies per 100m of transect length is calculated, it is evident that overall transects 3, 4 and 5 are significantly more attractive to butterflies than the other transects (see table 5). These three transects cover the Wildflower Meadow, Rabbit Field and Manor Woods Orchard respectively, and demonstrate the importance of sunny flower-rich meadows to butterflies.

Over the five-year period 2019-2023, transects 1, 2 and 6 have broadly similar relative butterfly levels. These cover predominantly woodland edges combined with regularly mown amenity grassland.

The relatively lower average count in transect 7 across the five years of this survey is probably due to the predominance of regularly mown amenity grass and a north-facing aspect along the transect. It is noticeable, however, that numbers increased in transect 7 in the last two years compared with the previous three years. This could have been due to a change in mowing practices, which means that more grass was left unmown for longer periods of time.

Butterflies	Transect							
Year	1	2	3	4	5	6	7	Total
2019	42	19	236	29	55	35	27	443
2020*	46	7	40	31	37	30	9	200
2021	36	19	69	20	33	28	14	219
2022	19	13	35	34	34	14	21	170
2023	18	11	96	31	18	9	12	195
Total	161	69	476	145	177	116	83	1227
Transect length (m)	675	350	700	160	235	650	750	3520
Butterflies/100m	24	20	68	91	75	18	11	35

Table 5: Butterfly counts per transect per year, and per 100m length of transect

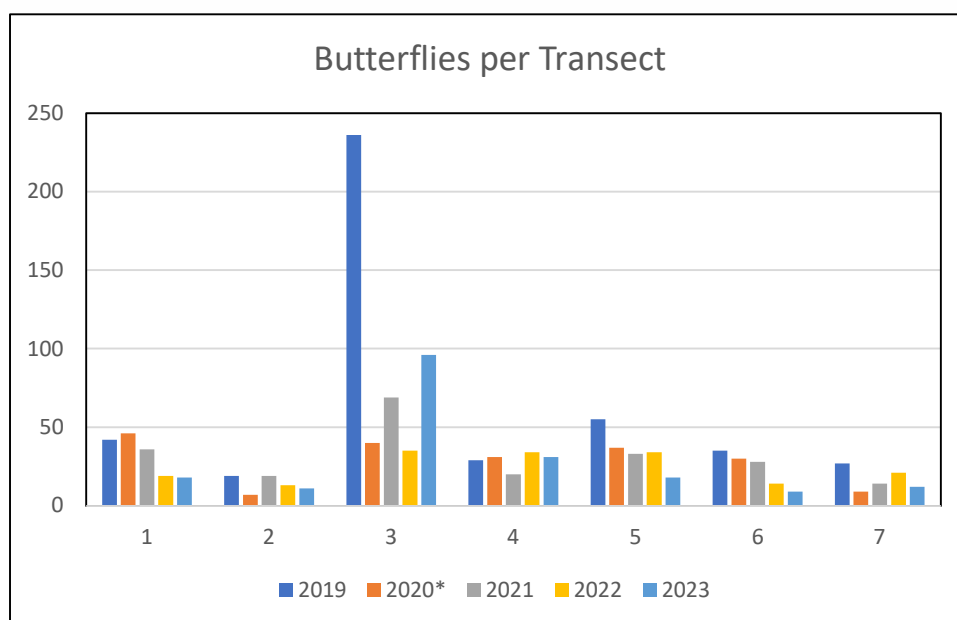


Figure 1: Butterfly counts per transect

There are 57 resident butterfly species in the UK, several of these have a limited geographical distribution. There are also 3 migrant species that occur often, but do not establish self-sustaining populations. 38 species have been recorded in the Bristol region since 2014 and reported to the BRERC online database. Exactly half of these – 19 - including one migrant, Painted Lady, have been recorded in Manor Woods Valley during the butterfly monitoring surveys (see table 6).

Two resident species, Brimstone and Orange Tip, occur frequently in Manor Woods Valley, but their peak numbers tend to pass before the summer survey window opens. An additional migrant species, the Clouded Yellow, has been recorded outside of the survey window. Therefore, a total of 22 of our 38 locally occurring resident or regular migrant butterfly species are confirmed as having been recorded in Manor Woods Valley since 2019.

On one occasion in each of two of the survey years a large orange butterfly was seen to fly across the transect route, near the interceptor. These were probably Silver-washed Fritillaries. Further survey work may reveal a colony on the site.

There are several butterfly species that have not been recorded in Manor Woods (since 2014), but which could occur. These include the Small Heath and Wall which favour open habitats and various Hairstreaks which favour woodlands and woodland edges.

A dedicated Purple Hairstreak Survey carried out in August 2021 failed to find any of this species.

A third of the butterfly species that have been recorded in Manor Woods Valley have no particular habitat preferences, a third are grassland specialists and a third are scrub or hedgerow (including woodland edge) specialist. Only one recorded species, the Speckled Wood, prefers woodlands proper. This breakdown reflects the range of habitats that occur on the site and likely under-recording of woodland specialist species.

Butterfly Counts							Habitat			
Species	2019	2020*	2021	2022	2023	Total	Flowery Grassland	Scrub/Hedges	Woods	All
Large White	19	33	34	20	18	124				✓
Small White	15	9	1	11	5	41				✓
Green-veined White	4	0	0	0	0	4				✓
Small Copper	0	0	2	1	0	3		✓		
Holly Blue	0	2	0	1	0	3		✓		
Brown Argus	5	0	0	1	1	7	✓			
Common Blue	25	9	8	16	26	84	✓			
Peacock	5	2	0	0	3	7				✓
Red Admiral	4	4	5	5	5	23				✓
Painted Lady	1	0	0	2	0	3				✓
Comma	2	2	12	2	0	18		✓		
Small Tortoiseshell	2	2	4	2	0	10		✓		
Marbled White	40	26	10	2	0	78	✓			
Meadow Brown	189	37	85	48	101	460	✓			
Gatekeeper	25	0	6	12	8	51		✓		
Ringlet	54	45	24	16	2	139		✓		
Speckled Wood	5	9	13	13	19	59			✓	
Small/Essex Skipper	27	18	8	12	4	65	✓			
Large Skipper	21	4	7	6	2	38	✓			
	443	202	219	170	194	1217	6	6	1	6
* adjusted for 3 visits										

Table 6: Butterfly species and habitat preferences

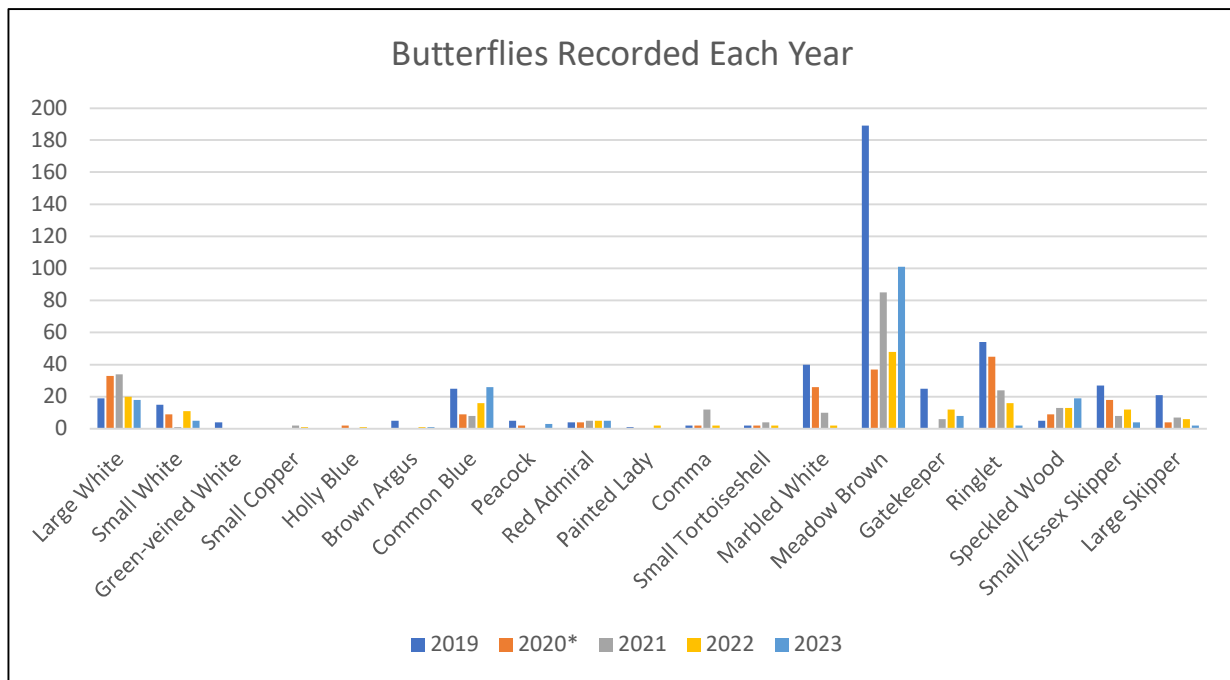


Figure 3: Butterflies recorded each year