

Butterfly Monitoring Report 2023

The United Kingdom Butterfly Monitoring Scheme (UKBMS) is one of the longest running insect monitoring schemes in the world. The scheme began in 1976 and now records data on over 2,000 sites per year. Butterfly transects are a way of monitoring the number and variety of butterflies present at a site from year to year. Full (all species) transects are carried out weekly throughout the main period in which butterflies fly in the UK (April to September).

In 2023 only the Swaddywell reserve was monitored because of the expected disruption to the Etton-Maxey reserve due to the Anglian Water pipeline work.

Transects are 1-2km in length and are walked by Langdyke volunteers over a route that provides a fair representation of the habitats present at each site. This transect is 'fixed', in other words the same route is followed each year, and is split into sections which are of equal length with each section representing a change in habitat or management type.

1. *Swaddywell Transect*

The transect for Swaddywell Quarry is shown in Figure 1 below. It is split into 8 sections and was walked weekly between the 8th April (week number 2) and the 28th September (week number 26). No data was collected for weeks 1, 3 and 22. The transect is 1,860 metres in length and the principal habitat type is dry semi/unimproved (flower rich) chalk/limestone grassland.

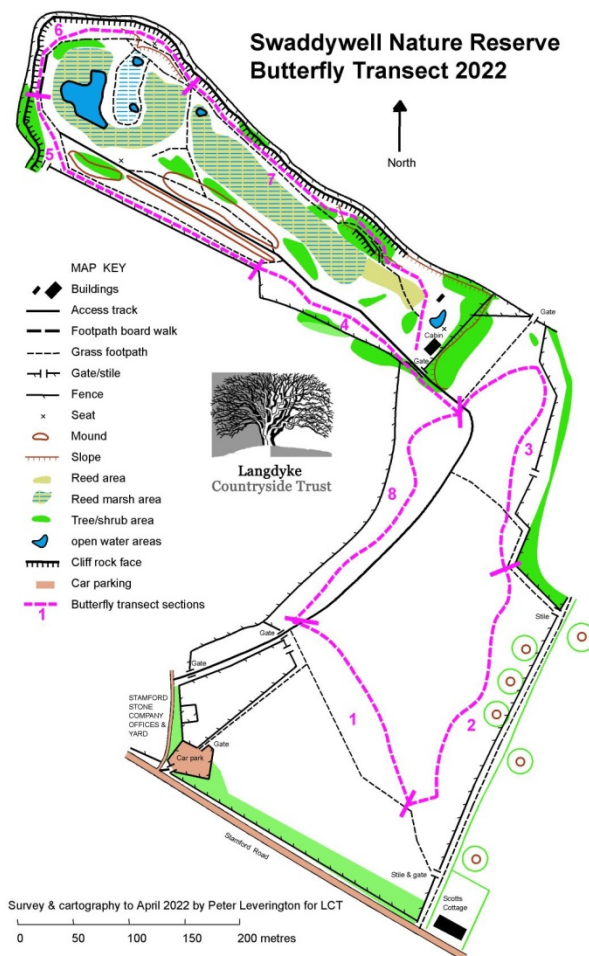


Figure 1 - Map of the Swaddywell reserve showing the butterfly transect split into 8 sections

1.1 Swaddywell Transect Results

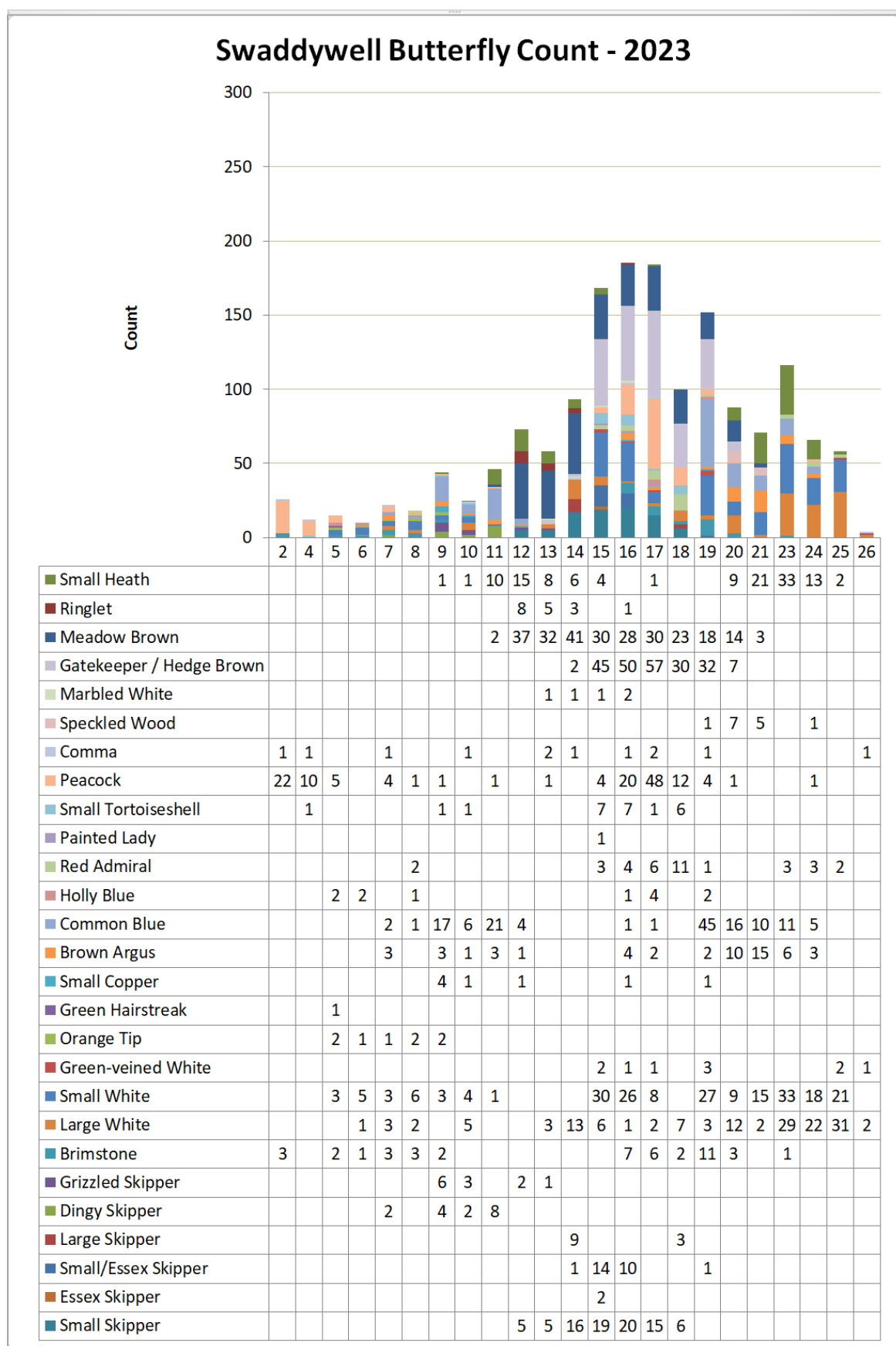


Figure 2 - Graph showing individual butterfly counts by week for the Swaddywell reserve

1.2 Swaddywell in summary:

- 27 different butterfly species were recorded over the 23 weeks. This is one extra than was recorded in 2022, Brown Argus.
- The top 3 butterfly species recorded were Meadow Brown, Gatekeeper and Small White.
- No one species was recorded in every week of the survey, the most consistent being the Large White which was recorded in 17 of the 23 weeks.
- The highest number of butterflies, 185 individuals across 18 species, was recorded on the 20th July (week 16)
- The lowest number of butterflies, 4 individuals across 3 species, was recorded on the 28th September (week 26).
- Butterflies were recorded in each section of the transect, and the section with the highest total butterfly count over the whole monitoring period was S6 (see Figure 3).
- Red Lists are the standard, objective way of assessing the extinction risk of species at global, continental and country levels. The latest Red List (May 2022) for butterflies categorises half of Britain's remaining species as Threatened (Endangered or Vulnerable) or Near Threatened. The Swaddywell reserve currently has no species in the Endangered category, 2 species (Grizzled Skipper and Small Heath) in the Vulnerable category and no species in the Near Threatened category. All other butterflies recorded at Swaddywell are classified as Least Concern.

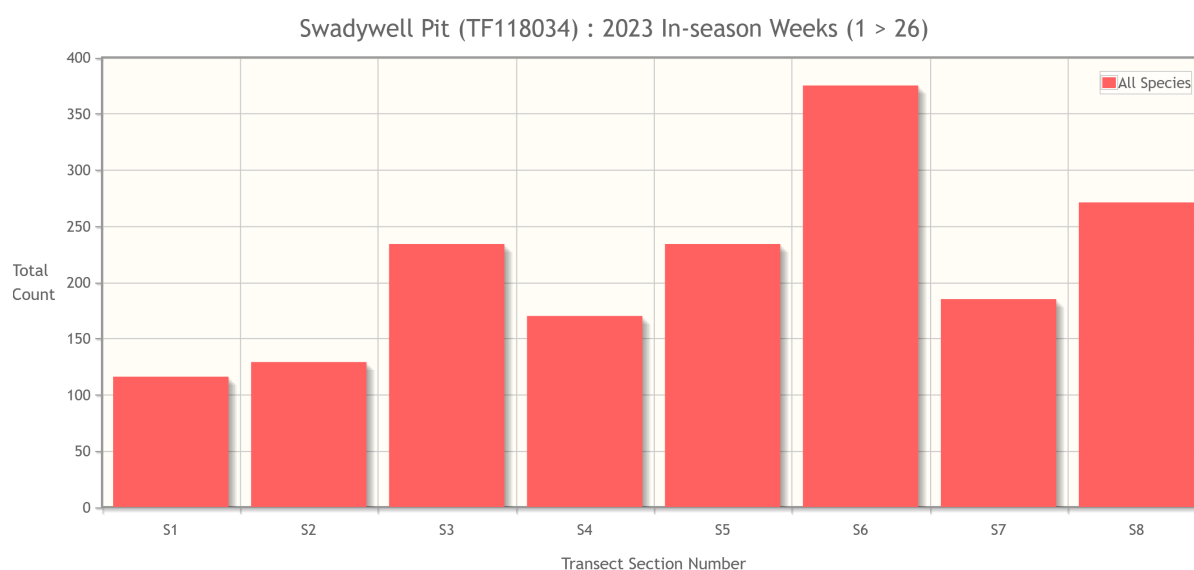
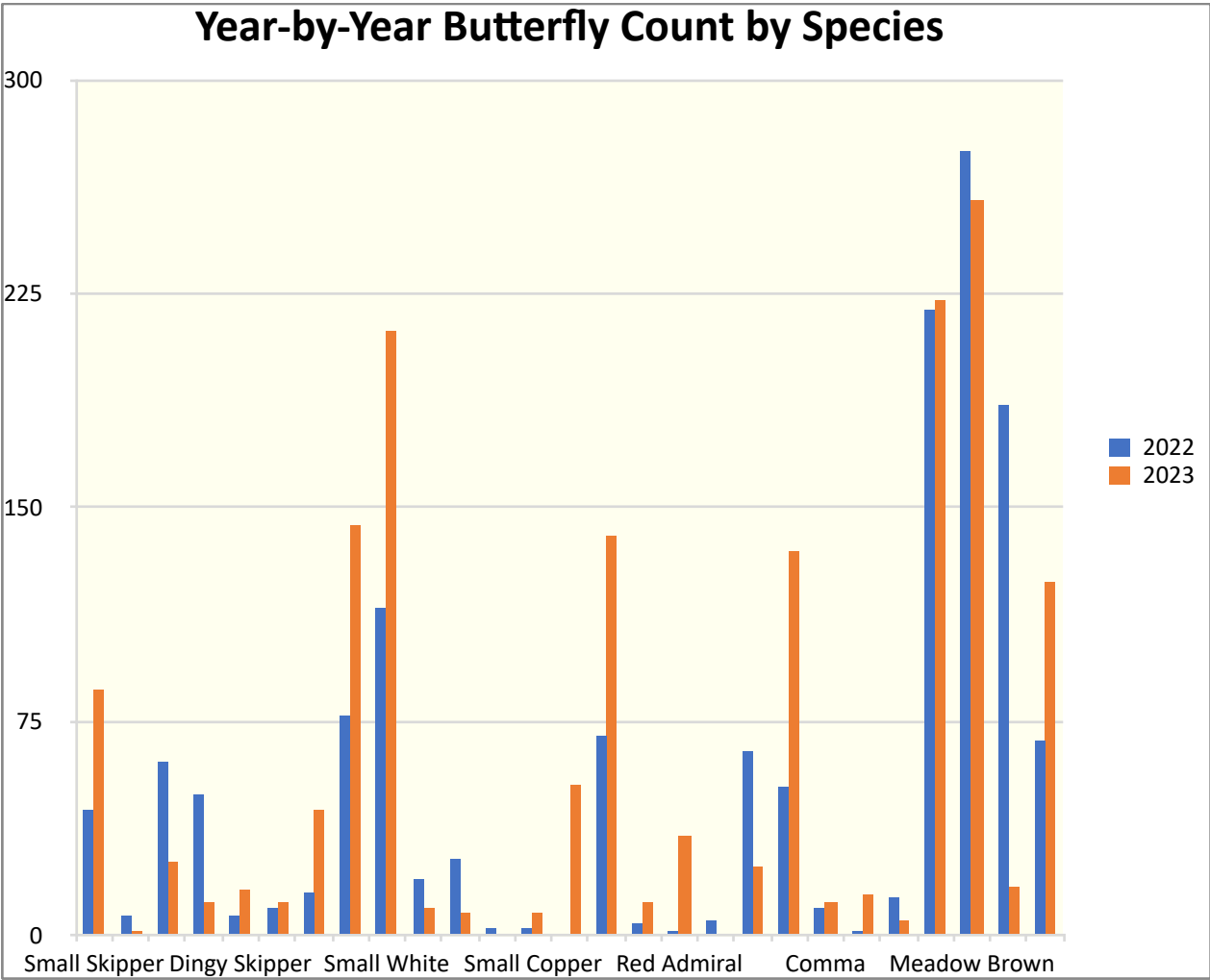
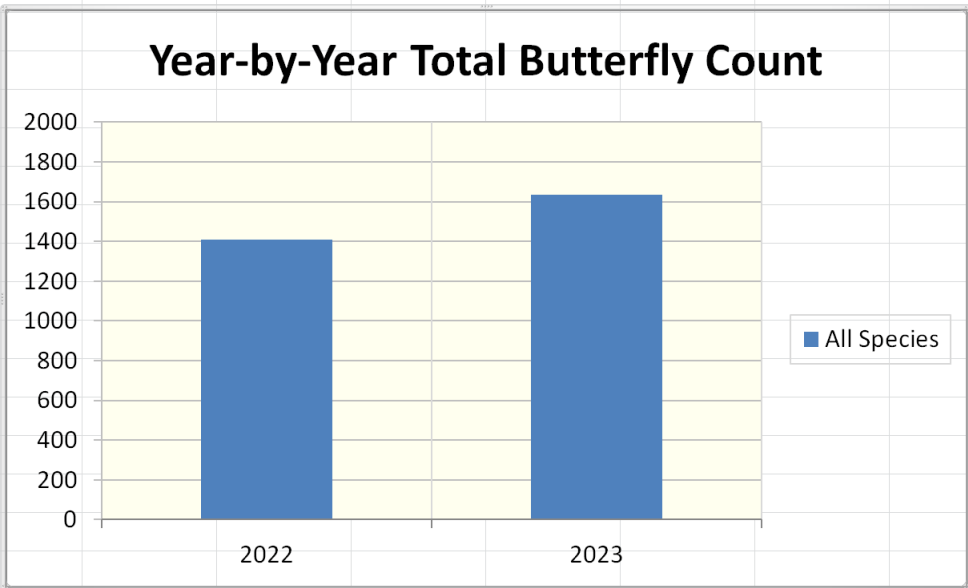


Figure 3 - Graph showing the total butterfly count for each transect section on the Swaddywell reserve

1.3 Swaddywell year-by-year trends



- Two years is a very short time to assess trends in butterflies and it should be noted that there are naturally year to year fluctuations in butterfly populations. However.....

- Overall there was a 16% increase in the number of butterflies counted in 2023 compared with 2022.
- Sixteen species increased in numbers in 2023 compared with 2022.
- The biggest increases were for Red Admiral (up 1,650%), Speckled Wood (up 600%), Holly Blue (up 200%) and Brimstone (up 193%).
- Eleven species decreased in numbers in 2023 compared with 2022.
- The biggest declines were for Ringlet (down 91%), Painted Lady (down 80%), Large Skipper (down 76%) and Essex Skipper (down 71%).

1.4 National year-by-year trends

- The following analysis is taken from UKBMS National Survey Official Results for 2023.
- 2023 shows about a third of the species assessed in the UK showing a significant long-term decline in abundance (33%), and the same (33%) showing a significant long-term increase
- Overall, 2023 was a slightly above average year for butterflies, ranking 23rd in the 48-year series. Four of the 58 species assessed had their best year on record at UK level: Chequered Skipper, Brimstone, Red Admiral, and Large Blue. These results match what we saw for Brimstone (up 193%) and Red Admiral (up 1,650%) at Swaddywell.
- Two species recorded their worst year on record: Small Pearl-Bordered Fritillary and Small Tortoiseshell. These results match what we saw for Small Tortoiseshell (down 63%) at Swaddywell.
- Brown Argus had its 2nd best year on record, and Marbled White, Comma, Black Hairstreak, and Holly Blue had their third best year on record. Grizzled Skipper and Green-veined White had their 3rd worst years since 1976. A further large annual decline for Small Tortoiseshell resulted in the 5th worst year on record for this species, continuing the significant long-term decline of this common and widespread species (down by 82% since 1976).

1.5 Drivers of change

- Weather conditions can create noticeable fluctuations in butterfly populations from one year to the next as they impact butterfly development and activity directly, as well as indirectly (e.g. via impacts on habitat). Generally, butterflies tend to fare better with warm sunny weather during their flight period. Met Office data shows that 2023 had some significant record-breaking months, although the weather fluctuated considerably each month with cold snaps across the start and end of the year, a warm summer, with named storms from August and across Autumn, and more rain than average across the year. Eight months of the year were warmer than average. 2023 had the warmest June on record, although the UK's highest temperature was in September, which is a rarity.