

BUTTERFLY CONSERVATION UPPER THAMES BRANCH

Purple Emperor (A. iris) Report for 2020

Summary- 2020

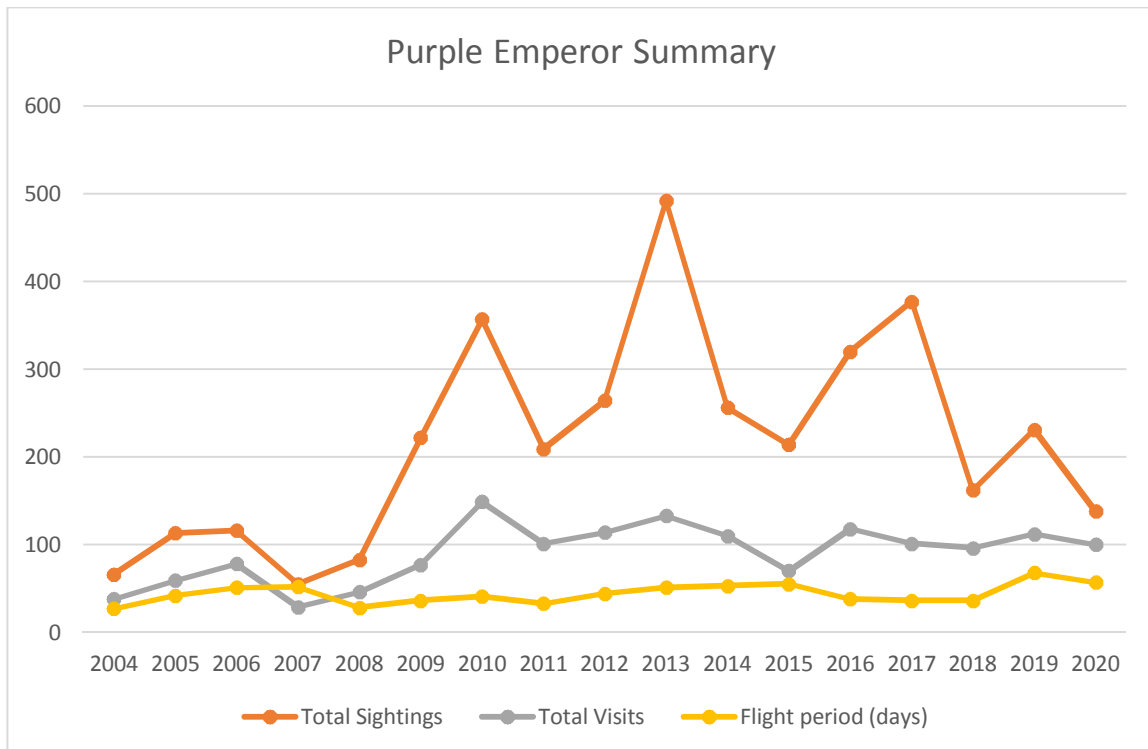
The total number of sightings was well down compared to the previous year with 138 sightings from 100 visits (in contrast to 231 sightings from 112 visits for the year 2019).

Obtaining accurate population numbers for this butterfly is particularly challenging given its liking for forest canopies, so drawing significant conclusions about its population variations from year to year is probably unwise. The data were obtained from three sources; sightings posted on the Butterfly Conservation Upper Thames Branch website, data from 10km square observations, and separate records sent to the Species Champion. The three sources were compared and combined and any duplicates were eliminated.

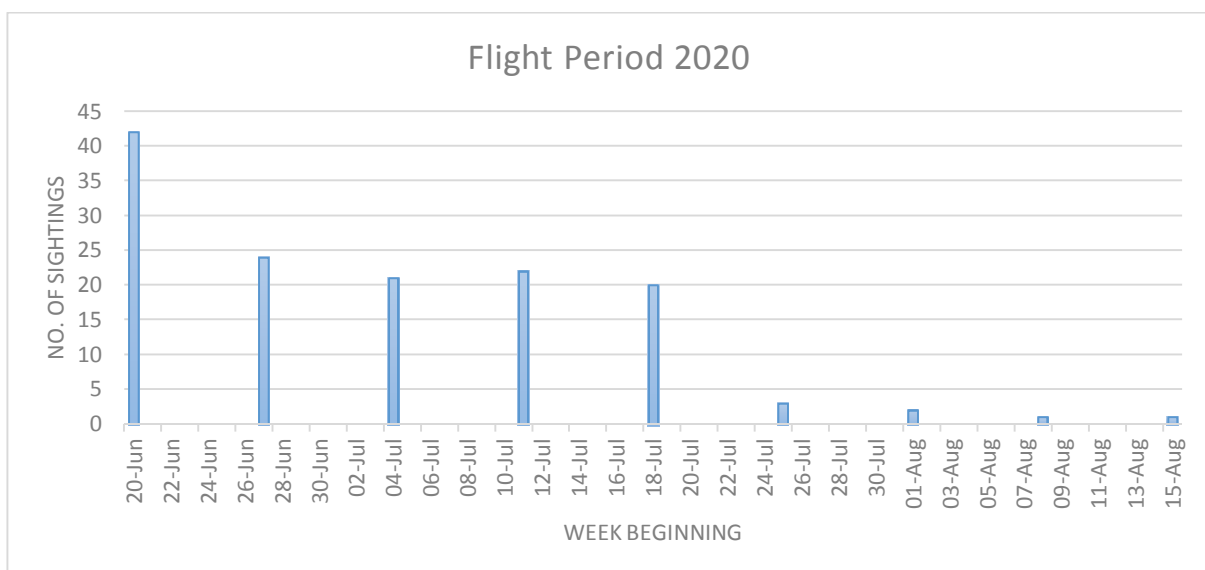
Comparison with Previous Years

| Year | Total Sightings | Total Visits | Date First Sighting | Date Last Sighting | Flight period (days) |
|-------------|------------------------|---------------------|----------------------------|---------------------------|-----------------------------|
| 2004 | 66 | 38 | 04-Jul | 31-Jul | 27 |
| 2005 | 113 | 59 | 27-Jun | 08-Aug | 42 |
| 2006 | 116 | 78 | 25-Jun | 15-Aug | 51 |
| 2007 | 55 | 29 | 19-Jun | 10-Aug | 52 |
| 2008 | 83 | 46 | 29-Jun | 27-Jul | 28 |
| 2009 | 222 | 77 | 25-Jun | 31-Jul | 36 |
| 2010 | 357 | 149 | 28-Jun | 08-Aug | 41 |
| 2011 | 209 | 101 | 21-Jun | 24-Jul | 33 |
| 2012 | 264 | 114 | 04-Jul | 17-Aug | 44 |
| 2013 | 492 | 133 | 01-Jul | 21-Aug | 51 |
| 2014 | 256 | 110 | 16-Jun | 08-Aug | 53 |
| 2015 | 214 | 70 | 14-Jun | 08-Aug | 55 |
| 2016 | 320 | 118 | 03-Jul | 10-Aug | 38 |
| 2017 | 377 | 101 | 17-Jun | 23-Jul | 36 |
| 2018 | 167 | 96 | 19-Jun | 25-Jul | 36 |
| 2019 | 231 | 112 | 21-Jun | 28-Aug | 68 |
| 2020 | 136 | 100 | 20- Jun | 17-Aug | 58 |

In terms of sightings per visit this was by far the worst year since these reports were first compiled in 2004.



The main flight period of the Purple Emperor ran for about a month from late June to late July . From the 25th July onwards only seven individuals were sighted, the last sighting being on 17th August. The flight period on 2020 began with some promise, given the number of sightings in the first week but this rapidly declined. One possible cause of this could have been the very wet and windy weather during the weekend of 27th June. This turbulent weather may have taken a high toll of roosting butterflies, particularly males, which tend to roost higher in the canopy than females. Another factor which may have contributed to low numbers was the relatively mild winter. Raised winter temperatures can cause dormant caterpillars to stir and wander. This unseasonal activity depletes the caterpillars' energy reserves to a level below which they cannot survive the winter through to the following spring.



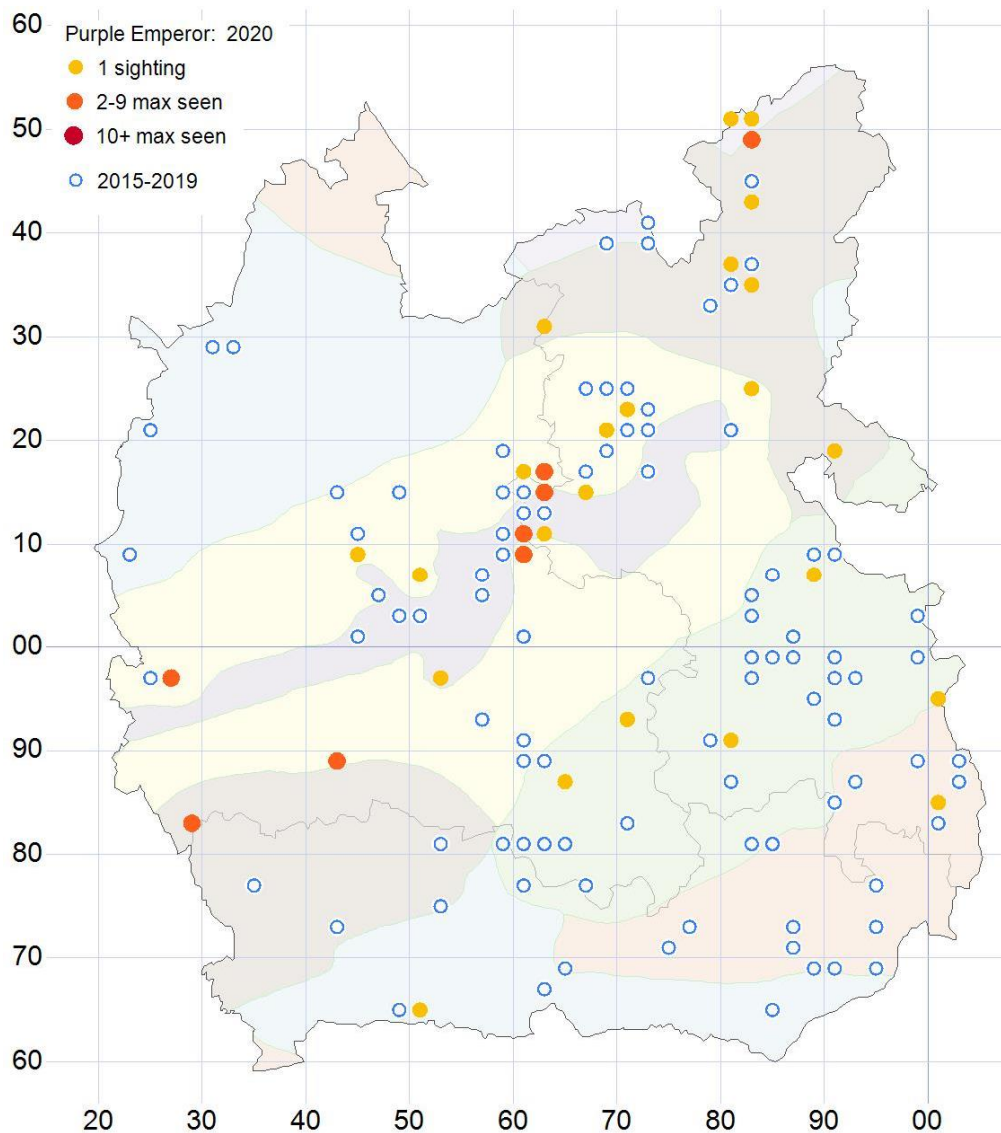
The Weather in 2020

According to the Met Office, the winter of 2019/2020 was milder than average and broadly unsettled. February was particularly wet and stormy. Spring 2020 was warmer, drier and sunnier than average, particularly in April. There was a cold spell during the middle of May but maximum temperatures were well above average. The summer of 2020 was unsettled with a mixture of heavy rain, unsettled weather, in some cases stormy and brief spells of temperatures into the late 30s in June and July.

Distribution of the Purple Emperor throughout the Upper Thames Region

The main cluster of sightings as in previous years is focused on an area due east of the Cotswolds and north west of the Chiltern Hills. Many sightings were singletons which may reflect both the challenges in seeing this butterfly which spends much of its time in the forest canopy and also its ability to fly significant distances in the search for new territories.

The map below shows the number of sightings in 2020 compared to those locations which recorded at least one sighting between 2015 and 2019. Several single sightings were more than 1 km distance from sightings in the period 2015-2019. One remarkable sighting was recorded in Oxford where a butterfly spent over an hour on a windowsill!



Acknowledgements

Thanks to all the people who sent in sightings. A large number of visits and sightings were made by Mick and Wendy Campbell and a special thanks to them for their dedication, expertise and advice. Many thanks also to Peter Ogden who helped collate and process the data.