Lee Durrell, Dan Danahar, 06.10.21

Corfu Map, butterfly reports 2021

Delattin's Grayling, 05.06.21

Balkan Marbled White, 28.05.21

Corfu Butterfly Conservation (CBC) Our first year of survey work - 2021

Introduction

If you have been following the development of CBC in previous issues of 'European Butterflies' you will know that broad interest in the butterflies of Corfu started through the creation of a Facebook page (that currently has 720 members) which was set up on the 27 April 2014. Skipping forward seven and a half years to 22 December 2021, CBC has become a UK registered *Community Interest Company (No. 13813164)* and so its identity has changed from being that of a project to one of an organisation.

In addition, our website: **www.corfubutterflyconservation.org,** funded by the **Royal Entomological Society's Goodman Award,** describes the 75 species of butterflies we have confirmed from the island, as well as the work we are undertaking to conserve them. It outlines the value of butterflies as indicators of the island's biodiversity status and encourages enthusiasts to record their sightings on this website, as participants of the **Corfu Butterfly Survey (CBS)**, so that we can ultimately create the first comprehensive atlas of Corfiot butterflies.

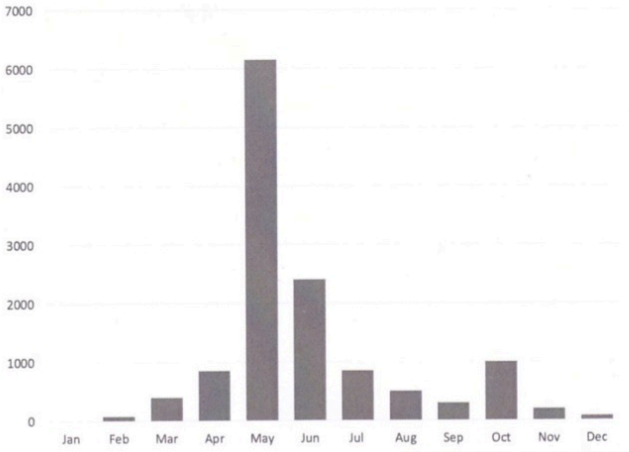
During 2021, CBC received funding from the **Ionian Environmental Foundation** and the **Rothschild Foundation** to print and distribute 10,000 dual language posters entitled - a **Guide to the Butterflies of Corfu**. We intend for 80% of these posters to go to the primary school children of Corfu, during April and May 2022 and we are working with the Director of Education (Dr Petros Angelopoulos) to ensure that this happens. The remaining 20% will be distributed amongst the public during the same period. Additionally, we have also designed 6,000 dual language identification guides, intended for individuals who show greater interest in identifying and recording their sightings using standardised recording methodologies. Finally, we are planning for a series of events with the municipality of Corfu, that will further promote the CBS during May of 2022.

The Corfu Butterfly Survey - year one

The 1 January 2021 marked the start of the CBS. We decided upon a soft launch for our website and so were delighted that by the 31 December 2021, there were 59 registered users, who recorded 1,073 records, containing 12,762 butterfly sightings. The first distribution map that we produced plots every one of these butterfly sightings and broadly speaking indicates a good measure of recorder effort. Coverage was a little patchy but sightings were relatively widespread. Whilst there was clearly plenty of interest in the north-eastern mountainous regions of the island, this map also shows where we need to do more work, e.g., in the north-western and southern regions of the island.

Butterfly Abundance

The numbers of individual butterflies or butterfly abundance can tell us a great deal if viewed monthly. In this histogram we can see two peaks, one during the spring/summer (May) and the other during the autumn (October). However, the peak in abundance found during the spring/summer is over six times greater than that of the autumn. So obviously, if you intend to visit Corfu and want to see butterflies in very high abundances, the 2021 data suggests a trip in the spring/summer is the best time to go. However, the weather in the autumn of 2021 was unusually cold and damp and so the autumnal abundances of different butterfly species were unusually depressed.

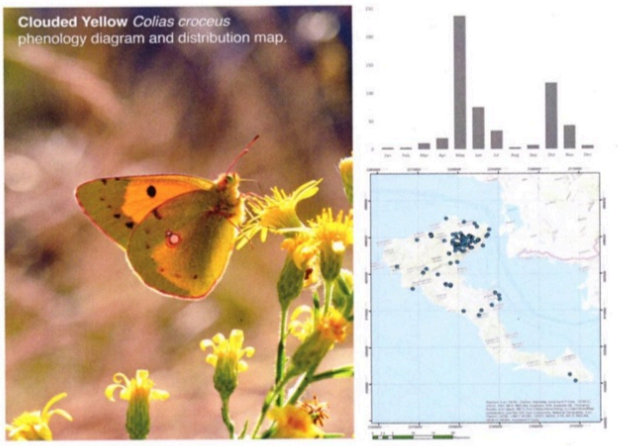


Monthly butterfly sightings

Individual species data

When the individual species data is teased apart, the phenology and distribution trends vary considerably. In the text below I outline some examples.

Whilst the phenology diagrams presented below appear reasonably robust despite the relatively low numbers of sightings, the distribution maps clearly only tell us where things were but they cannot tell us where they were not because much of the island has yet to be surveyed. Hence, the data presented in the distribution maps should be regarded with some considerable caution.



Clouded Yellow diagrams

The Clouded Yellow *Colias croceus*

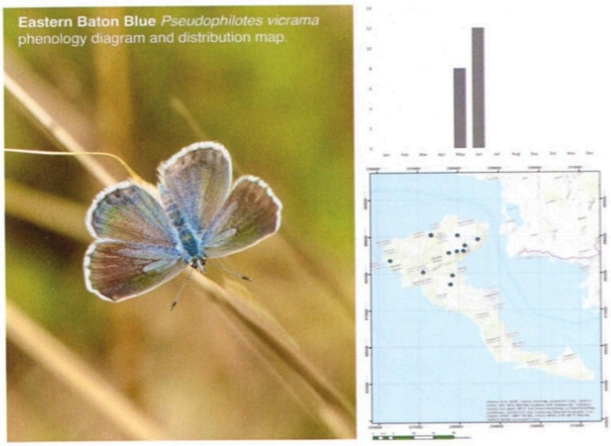
One butterfly species that mirrored this overall trend was the Clouded Yellow. Our first sighting of this butterfly was recorded by Rob Kesseler on the 2nd January 2021. This is a common butterfly on Corfu probably because the resident population is continually boosted by migrants. The phenology of this species shows two distinct peaks in the occurrence of the adult butterflies, with the abundance of individuals in May being only twice the size of those found in October. Clearly, the Clouded Yellow is bivoltine, i.e. it has two flight periods per year. Such a strategy enables the butterfly to have two opportunities every year to increase its population size. Our distribution map shows a considerable number of sightings from the coast and this, in part, strengthens the view that migrants increase the population sizes. The behaviour of this butterfly suggests it is preoccupied with nectaring, probably because it requires fuel for its migratory habits. In October nectaring is almost entirely restricted to Aromatic Inula *Dittrichia viscosa*. The map also suggests that the butterfly is to be found widely throughout the island and I am confident that by the end of the CBS we will have found it in every square kilometre of the island.

Small Heath summer variant, 06.08.20

The Eastern Baton Blue *Pseudophilotes vicrama*

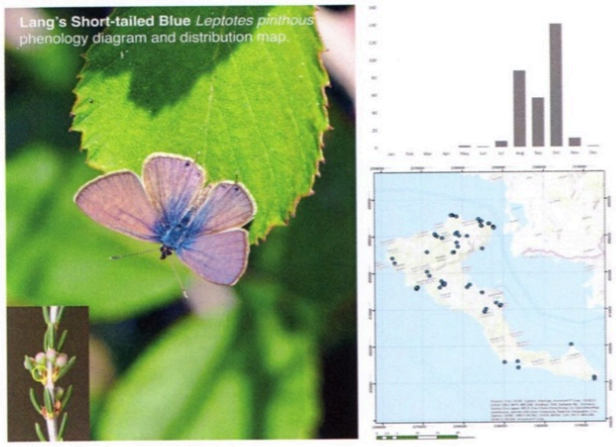
We call ourselves **Corfu Butterfly Conservation** and so understandably it's right that we should be concerned about vulnerable species of butterfly on the island. The **Eastern Baton Blue** is registered under the **EU Red Data Status of 2010** as: **Near Threatened**. So naturally the Eastern Baton Blue is a priority species for our organisation and this means that we want to learn as much as we can about it, as soon as possible.

Great-banded Grayling, 22.06.21



Eastern Baton Blue diagrams

Large Tortoiseshell, 11.06.21



Lang's Short-tailed Blue diagrams

Nettle-tree Butterfly, 05.06.16

Firstly, this year's phenology graph shows the Eastern Baton Blue is clearly a univoltine species with adults flying only between May and June. This emergence time enables the butterfly to lay its eggs on the host plants just before they are about to flower, a behaviour that is common with many small butterfly species. Anne Sordinas (a prominent CBC member) and I have both witnessed oviposition by this species on Thyme *Thymus holosericeus* and Marjoram *Origanum vulgare*. The petals of these two plants will be composed of comparatively soft, nutrient rich, tissue and it's highly likely that the tiny first instar caterpillars of the Eastern Baton Blue will feed on these petals rather than the tougher leaves which may be too difficult for their mandibles to masticate.

My own survey work in the early part of 2021 identified fragments of habitat adopted by this species. These included the margins of mountainous tracks and other exposed areas where there was free draining, rocky, basic soils, in which the low growing patches of Thyme and Marjoram could persist.

Our existing records show an encouraging upland distribution and in fact, we know of its existence in more sites than were recorded during 2021 because they were discovered before the CBS started. For now, the fortunes of this species look relatively positive, as long as we continue to discover new colonies throughout the duration of the CBS. Currently, we do not have any southern records but we know what type of habitat to look out for and so I think it is only a matter of time before we see an extension of the southern range of this species.

Lang's Short-tailed Blue *Leptotes pirithous*

The phenology diagram for Lang's Short-tailed Blue suggests it's a univoltine species. Nonetheless, casual observations in April of 2017, long before the CBS started, revealed adults at a site near Dassia. Consequently, the lack of records during the early spring of 2021 may be because the Covid 19 lockdown made observations of butterflies difficult. Never-the-less, we do not have any evidence to suggest that Lang's Short-tailed Blue is bivoltine. In north Africa and other parts of the Mediterranean, this migratory species is considered polyvoltine and so it is possible that in Corfu it does not survive the winter and simply floods the island with migrants every year.

However, observations made in Corfu this year by Ralph Hobbs, Rolf Farrell and Gillian & Ken Elsom revealed that this species oviposits on Mediterranean Heather *Erica multiflora*. Furthermore, it is curious that the mass occurrence of the adult butterflies coincides with the formation of the *Erica* flower buds. As has already been mentioned above, many small butterflies time their oviposition with the development of the softer tissues that go to make up the petals of their hostplants. Given that this appears to take place in Corfu, it suggests a sophisticated synchrony between Lang's Short-tailed Blue and its host.

It is uncertain what stage, if any, this butterfly species spends in diapause but if this species' 2021 phenology trend is a typical annual pattern on Corfu it begs the question, can this species survive the winter on the island? My gut tells me that maybe it does, especially because other migratory species (e.g. the **Plain Tiger *Danaus chrysippus*,** the **Eastern Bath White *Pontia edusa***) that we would normally expect to see at this time of year, were not very common in 2021 when in contrast Lang's Short-tailed Blue was very common. Of course, whether there is a resident population of this butterfly on the island or not, it's almost certain that migrants travel to the island every year.

The Southern Swallowtail *Papilio alexanor*

This species' phenology graph shows that the adult is most abundant in May, with a few also seen in early June. Anne Sordinas, my son - Indiana Danahar and I discovered that during June the caterpillars of this species feeds on at least two species of Umbellifer in Corfu and that it forms its flat shaped chrysalis by early July. Andrea Baruzzi, European expert on this species, tells me that in Italy the chrysalis is frequently formed in between limestone rocks. Could this be one of the factors that appears to restrict it to the rocky mountainous northeast of the island? I think not, one of the sightings made during 2021 was at sea level, on Almyros beach and more importantly, whilst I was staying with Agalis Manessi and Rob Kesseler in Poulades, this year, Agalis drew our attention to the larvae of this species feeding on plants in their garden. Their property is just 70 metres above sea level. So, whilst this species may be more commonly found in the uplands, the lack of records in the lowlands may simply reflect a lack of recorder effort. This is of course exactly why we need to record more over the entire island.

Conclusion

Whilst there is still a long way to go before CBC achieves its aim of producing the first comprehensive atlas of Corfiot butterflies, I hope that this article has demonstrated that we now have everything in place to do so.

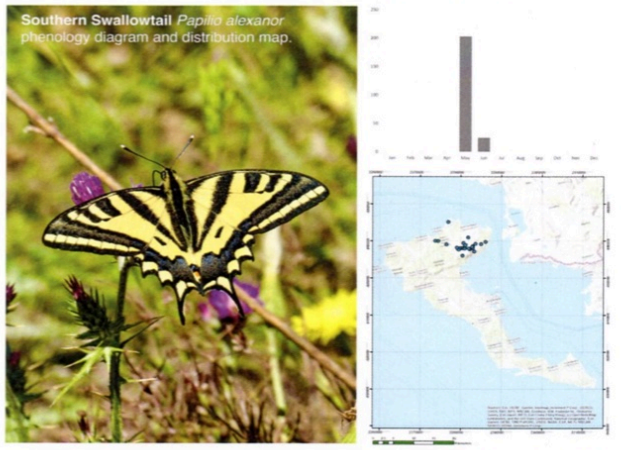
If you feel you would like to contribute to our efforts, please don't hesitate to contact me.

Dr Dan Danahar
dan@corfubutterflyconservation.org

The work described in this article was generously supported by the Percy Sladen Memorial Trust.

Dan Danahar
Photographs: Dan Danahar

Purple Hairstreak, 29.06.21



Southern Swallowtail diagrams

Southern Swallowtail pupating

Two-tailed Pasha, 28.05.21