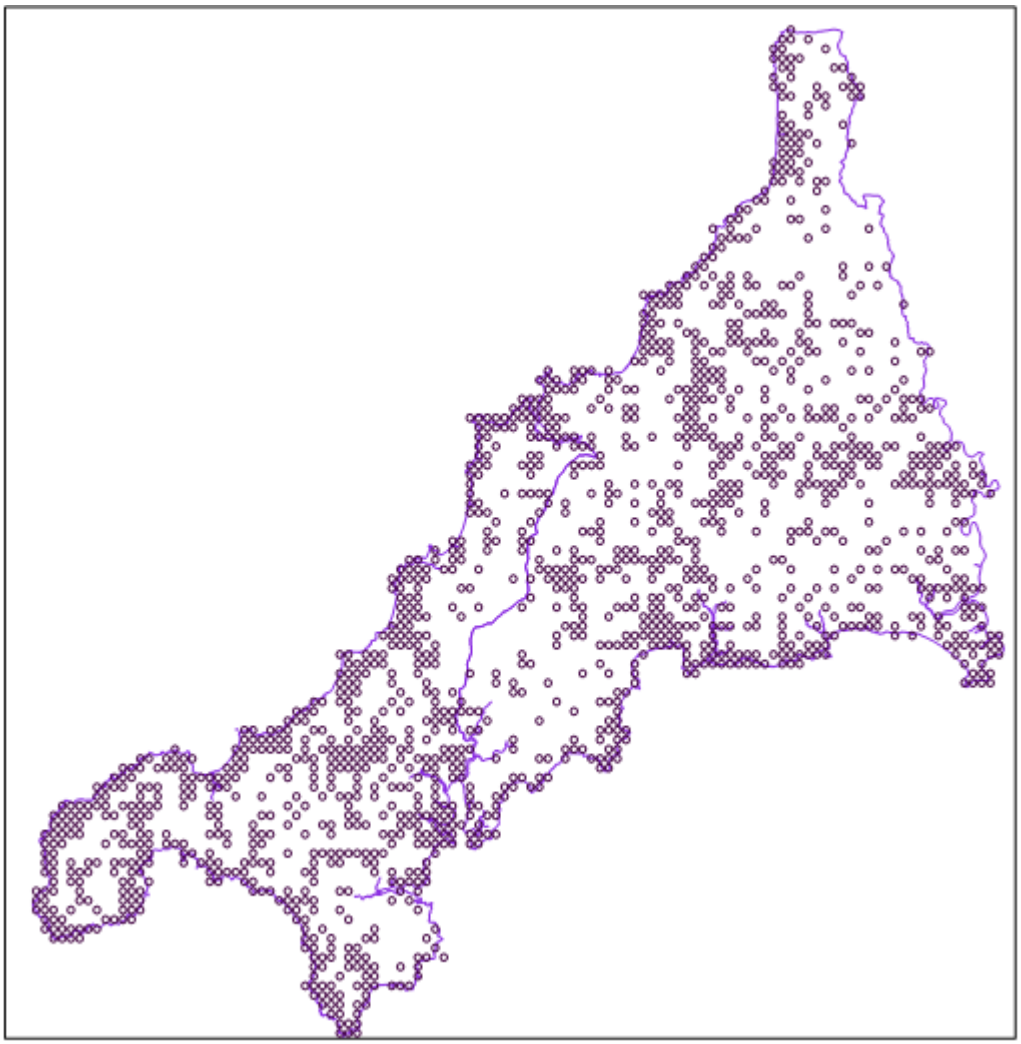
Small Copper *Lycaena phlaeus*

Summary compiled by Jerry Dennis, March 2023

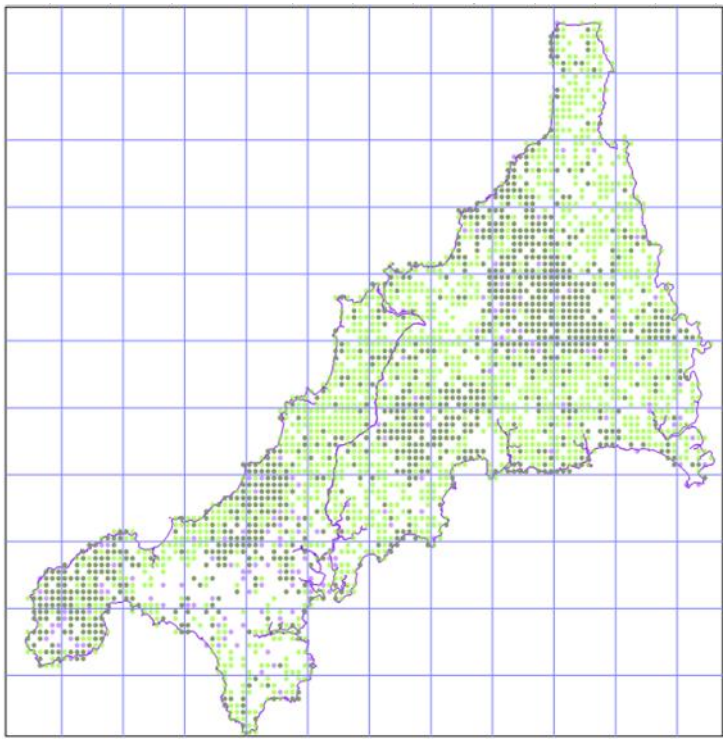
A small and readily identifiable Lycaenid butterfly that is common in Cornwall. It can be found throughout the county, particularly in coastal settings. The larvae feed on Common Sorrel *Rumex acetosa* and Sheep's Sorrel *Rumex acetosella*, both of which are found in grassy areas. The species has three broods per year.

Recorded locations

The 1km squares (1421) with records in the last ten years are highlighted below.

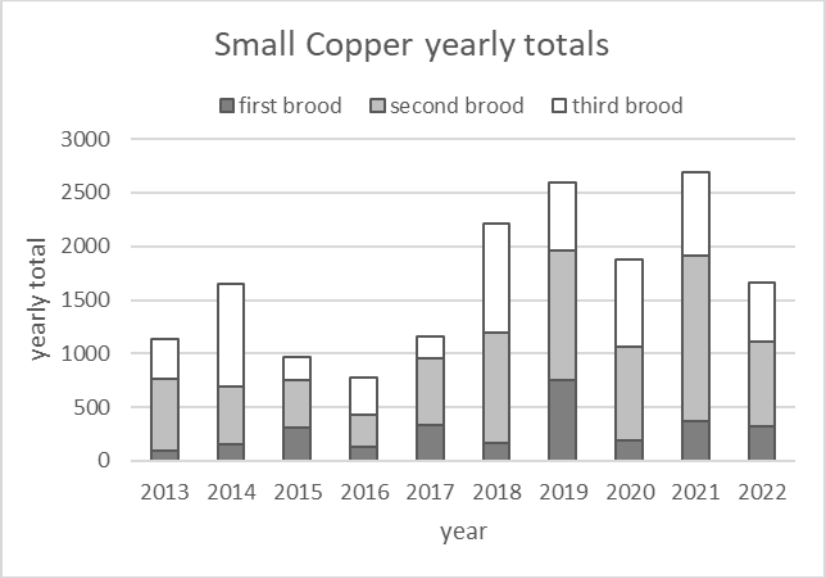


The distribution of the two foodplants are summarised on the map below, with light green for presence of Common Sorrel and purple for presence of Sheep's Sorrel.

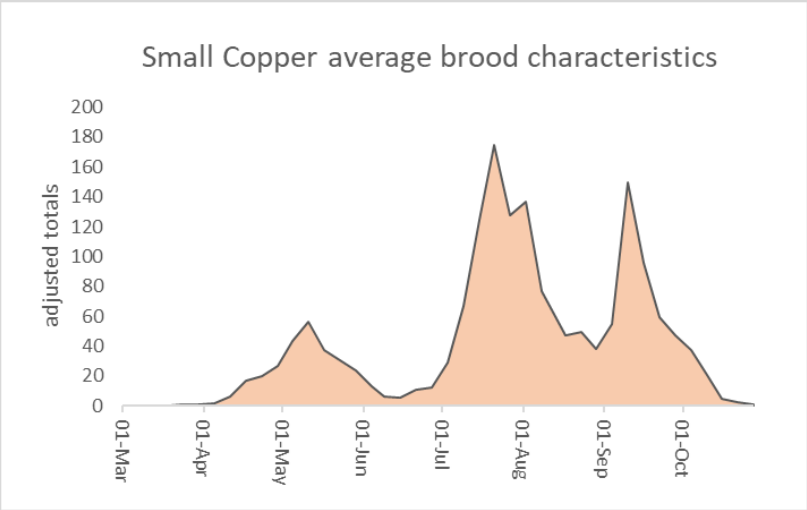


Yearly numbers recorded in the last decade are shown graphically and broken down into the three broods using the following dates: first brood to 18th June, second brood to 23rd August, third brood thereafter. The number of sightings has increased during this decade due to more recorders and more surveys.

The average brood totals are: first, second and third broods are 280 (17%), 800 (49%), 540 (33%) respectively. Abundance in all three broods is quite variable in each year. The average third brood is smaller than the second (74%), indicating that it is a partial brood. In some years, such as 2014 and 2018, the third brood is the largest of the three.



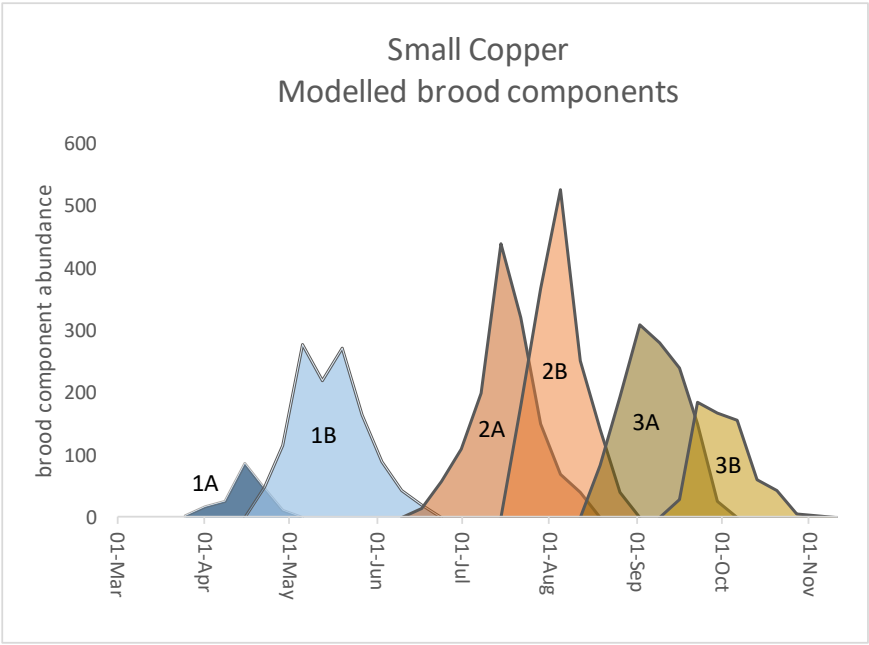
Flight period and phenology



Average weekly totals for years 2013 to 2022 are shown graphically. Yearly data for each brood individually has been migrated to align yearly median timings to the average median timing for that brood and then averaged. This reduces the distortion created by averaging data over several years when brood timings were different in each year.

The three flight periods have a complex form, particularly in the second and third broods that overlap significantly. This is almost certainly a consequence of the species' known ability to overwinter in more than one larval instar, providing at least two first brood pulses that then lead to at least two overlapping pulses in each of the second and third broods.

The complex nature of the brooding was modelled in an earlier study (Dennis, J. 2021 (unpublished). *The Small Copper: A Cornish Summary.*) and the following extract below shows a model derived from deconvolving each Small Copper brood into two components (data from west Cornwall only).

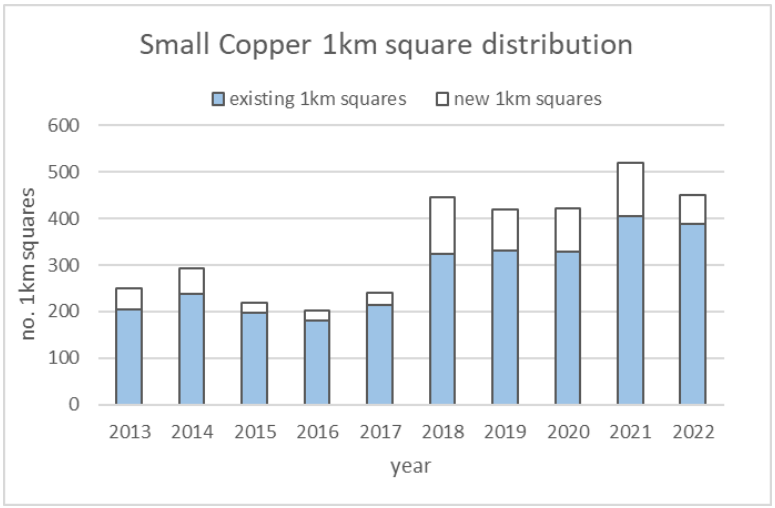


Small Copper top Cornish sites, 2018-2022

Site	2018	2019	2020	2021	2022	5yr average
TRELUGGAN CLIFFS	60	423	67	158	45	151
NARE HEAD	74	82	76	77	89	80
PORTHGWARRA	75	123	62	71	27	72
CUDDEN POINT – PRUSSIA COVE	18	42	115	116	52	69
PENTIRE AND RUMPS	64	102	41	30	32	54
DODMAN	47	77	74	48	14	52

The top six sites, in terms of annual numbers, are all UKBMS transects except for Cudden Point. This is because there are weekly survey at all of these places and numbers from all three broods contribute to the annual totals. Of these, Treluggan Cliffs, near Curgurrell on the Roseland Peninsula, is the most prolific site.

Because of the nature of the butterfly, living in many places in small colonies and having three broods per year, it is highly likely that we do not yet know which are the most prolific locations in the county. For example, individual counts of 50 or more Small Coppers have been made on several occasions on the west coast of the Lizard, in the stretch from Mullion Cove to Kynance Cove. More frequent monitoring is likely to confirm a prolific locale for the butterfly in this part of the county.



The butterfly is seen in new 1km squares each year as summarised above. Yearly totals of new squares are variable, but average 18% of the total 1km squares per year in the last decade. This perhaps emphasises the under-recording of the butterfly throughout the county.