

Butterfly Survey of The Clifton Backies 2006



**by Antony Fairburn
Friends of Clifton Backies**

Introduction

This paper describes the butterfly transect survey performed during 2006 within the local nature reserve (LNR) known as Clifton Backies in York. This is the third year of this survey and therefore allows us to establish which butterfly species are increasing and importantly which ones are declining on the Clifton Backies LNR site, and devise methods for their preservation. The information collected this year has been sent to the Yorkshire branch of Butterfly Conservation in order to generate a clear picture of the distribution of butterflies in Yorkshire and the UK.

Transect survey monitoring started in 1973 when Dr Ernie Pollard devised the method. The transect method involves the establishment of a fixed route across a site. This route is divided into a number of sections, which usually vary in length, habitat type and management. Each week, between April and September, walks are carried out along the Transect, where the number of individuals of each butterfly species counted in each section is entered onto a standard form.

All photographs in this document were taken on location in Clifton Backies or in the author's garden local to the reserve.

The Clifton Backies Site

Habitats

Clifton Backies offers a number of different types of habitat, which all support different types of butterflies. When the route was chosen at the start of 2004, I ensured that a good cross-section of these habitats was represented.

In order to standardise the habitat classification for all transects across the United Kingdom, there is a standard list based on the EUNIS (European Nature Information System) habitat classification.

The following habitats are recorded at Clifton Backies:

- 17 – Dry semi/unimproved (flower-rich) neutral grassland
- 22 – Dry scrub/shrub thickets
- 24 – Wet Willow scrub of fen, river and lakeside
- 25 – Hedgerows
- 29 – Lines of trees or scattered trees of parkland
- 32 – Bare ground / woodland herb / grass mosaics of woodland rides, hedgebanks and green lanes

It has been recorded that the habitats are managed using the following methods:

- M1 – Grazing by livestock
- M3 – Occasional coppicing

Route & Transects

The route through Clifton Backies is just short of 2km long and starts at the car park off Woodland Chase on Water Lane. The following page contains an OS map and plots the circular route through the site.

TR4a: BUTTERFLY TRANSECT - SITE DATA FORM

SMALL SITE



Butterfly Conservation
 Manor Yard,
 East Lopham,
 Wroxham,
 Norfolk. NR12 5SP

Details of recorder, habitat, management and site map

Please fill in this form as fully as possible, with reference to guidance notes TR3a

| | | | |
|--|--|--------------------------|-------------------------------------|
| Site Name | BOOTHAM STRAY | County | NORTH YORKSHIRE |
| OS Grid ref. (6 fig) | SE597543 | OS map no. (1:60,000) | 105 |
| Year transect established | 2004 | | |
| Transect length (m) | 1790 | Transect width (m) (max) | 15 |
| Overall habitat description | UNIMPROVED PASTURE & SCRUB WOODLAND | Half Cadees | 17, 22 |
| Land Use (if the transect is on a road or in a rural area tick the type) | | Railway | |
| | | Quarry | |
| | | Pit mine | |
| | | Other (specify) | <input checked="" type="checkbox"/> |
| Site's conservation status | LOCAL NATURE RESERVE | Type of recorder | BC VOLUNTEER |
| Recorder details | ANTHONY GARRBURN, 10 INGS VIEW, YORK, YO30 5XE. 01904 672104 | | |
| Owner details | | | |

SITE MAP: 1:10 000 or 1:12 500 photocopy based on an OS map, showing scale and sections

SCALE
 1:10 000
 ENLARGED FROM
 OS ENLARGED
 MAP 240.

Bootham Stray
 Allot Gdns
 Sch

TARGET NOTES
 AREA OF LAND WAS
 PREVIOUSLY USED
 IN WORLD WAR II
 FOR RAF BUILDINGS.
 SECTIONS 6 & 7
 MAINT PLANT SPECIES
 ARE CRESTED DOGSTAR
 AND COMMON YARROWEEED
 BUTTERFLY SPECIES
 RECORDED IN PREVIOUS
 YEARS:
 MEADOW BROWN, SMALL
 & LARGE SKIPPERS,
 COMMON BLUE,
 MARBLED YELLOW.
 NATURE RESERVE
 NOW KNOWN AS
 'CLIFTON BACKS'

TRANSECT SECTION DETAILS

| Section Number | Grid Ref. (for mapping) | Section Length (m) | HABITAT | | MANAGEMENT | |
|----------------|-------------------------|--------------------|---|--------|----------------------------|------------|
| | | | Description & management | Width | Description/notes | C/S |
| 1 | SE596544 | 200 | MANAGED HEDGEROW EDGE - HAWTHORN/BLAUWYK | 25, 22 | OCCASIONAL COPPING | M3 |
| 2 | SE596543 | 230 | OPEN SCRUB & MAN MADE LAKE | 32, 24 | | |
| 3 | SE597541 | 160 | UNIMPROVED PIGEON PASTURE & HAWTHORN SCRUB | 17, 29 | SUMMER GRAZING & CUTTING | M1, M2, M4 |
| 4 | SE598540 | 260 | UNIMPROVED FALSE OAT PASTURE & HAWTHORN SCRUB | 17, 29 | SUMMER GRAZING & CUTTING | M1, M2, M4 |
| 5 | SE598542 | 200 | MANAGED SCRUB WOODLAND EDGE - HAWTHORN/QUAK | 22 | OCCASIONAL COPPING | M3 |
| 6 | SE599543 | 300 | UNIMPROVED CRESTED DOGSTAR PASTURE | 17 | ALL YEAR GRAZING & CUTTING | M1, M2, M4 |
| 7 | SE598545 | 240 | UNIMPROVED PASTURE & HAWTHORN SCRUB | 17, 29 | ALL YEAR GRAZING & CUTTING | M1, M2, M4 |
| 8 | SE597545 | 200 | MANAGED HEDGEROW EDGE & UNIMPROVED PASTURE | 25, 17 | OCCASIONAL COPPING | M3 |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |
| 13 | | | | | | |
| 14 | | | | | | |
| 15 | | | | | | |

The Butterflies

During the transect count of 2006, there were 22 species of butterfly observed at Clifton Backies, with 3 new species observed this year compared with 2004 & 2005:



Small Skipper

This butterfly was a common sight in the mid summer on the meadows of Clifton Backies, flitting from one flower head to another and resting in the grass when the sun went behind a cloud.

The butterfly was often caught laying its eggs on the Yorkshire Fog grass in transect 4.

The Small Skipper has doubled in numbers year on year since the transect started, and with 406 counted, has become the most common butterfly.



Large Skipper

This is a slightly earlier species than its smaller relative, and can be distinguished not only by its larger size, but by the mosaic patterning on its wings.

The butterflies were found mainly within close proximity to the hedgerows and scrub areas of the site.

Although nowhere near as common as it's relative the Small Skipper, numbers have increased slightly this year to 40 removing any cause for concern.



Brimstone

The Brimstone male is an unmistakable sight flying high above the hedgerows and woodland, with its sulphur yellow colour. The female is paler and can often be mistaken for a white butterfly.

Not many Brimstones were observed this year in the area, and only one recorded at Clifton Backies. Buckthorn will be planted this year to encourage more visits.



Large White

Adults of this species seen in Britain and Ireland have often flown from Mainland Europe.

This butterfly was observed flying high above the meadows and scrub and very rarely landing, possibly due to the lack of larval food plant at this site.

Numbers have halved since last year to 37, but I feel there is no cause for concern.



Small White

This is a common and widespread species that occurs both in gardens and along hedgerows and woodland rides.

This butterfly was seen almost every week of the year landing to rest or feed on nectar.

Numbers were slightly down on 2005, though still very impressive at 133.



Green-Veined White

This butterfly is very similar to the small white when in flight, and can very often only be distinguished when it lands to feed. Unlike the Small White, it is not a pest of cabbage crops.

This species increased its numbers again this year.



Orange Tip

I am always excited to see that flash of orange wing early in the year as it signifies to me that Spring is upon us.

The females do not have the orange coloration.

Numbers of this butterfly remained static once more (24). Transect walking is not the best counting method for this species since it is only on the wing for a few weeks.



Small Copper

This is a territorial species, the males choosing a small patch of ground and chase away any insects that come into the area.

On Clifton Backies, it is most likely that the same butterfly was seen in the same place for a number of weeks.

Numbers have increased again this year to a satisfactory 16, with more individuals observed after transect walking had finished for the year.



Brown Argus New Species

This butterfly is actually a member of the Blue family, and can often be seen flying with Common Blues.

Larvae feed on Common Rock Rose.

The Brown Argus was observed in York last year, but has extended its range to this and other local sites. All butterflies were counted in the North field.



Common Blue

This is the most widespread of the blue species. The male is a bright blue, but the females observed varied, some being brown and others brown with a blue border.

This year there was a flood at the pond, and all surrounding Birds Foot Trefoil was under water for the period of a week. I believe this caused numbers to drop to 17 this year, and these were all second brood butterflies that may have re-populated.



Holly Blue *New Species*

This butterfly has two broods a year, and uniquely the first brood larvae feed on Holly whereas the second brood prefer Ivy.

There have been many sightings in the area, therefore the Holly Blue may have been present but not counted previously.

Two individuals were counted in sections 1 and 5.



Red Admiral

This migrant butterfly can be very common in gardens where there is buddleia, Michaelmas daisies and other nectar rich flowers. The adults arrive in spring from Europe and lay their eggs on nettle to produce butterflies in late summer.

Red Admirals increased this year to 12, and seem to be the most common Nymphalid in the area in late summer.



Painted Lady

This impressive butterfly is a long distance migrant from North Africa, Middle East and Central Asia.

After seeing only one butterfly last year, 10 were spotted this year brought over by the exceptional July that we had this year.



Small Tortoiseshell

This is one of the most well known of butterflies in Britain, mainly because of its year round attraction to the gardens of urban areas.

Having been an extremely common butterfly in gardens, the Small Tortoiseshell has declined. Only 18 were seen this year.



Peacock

This is a large butterfly that can be clearly identified by its spectacular eye spots which are used to confuse its predators.

On sunny days, the Peacock was seen flying high over the hedgerows meadows. Its large wings allowing the butterfly to move quickly between different areas.

Numbers increased on last year to 26.



Comma

The comma is an amazing butterfly, which closely resembles a dead leaf when resting. In fact it was difficult to spot the butterfly here until it spread wings and flew away.

This butterfly used to be a very rare site this far north in Britain, but has extended its range. Although highlighted as a potential problem last year, numbers have increased again to a satisfactory 21 this year.



Speckled Wood

Like the Comma, the Speckled Wood has extended its range into this area. This butterfly defends areas of woodland containing dappled light, finding an area of sunlight and rising to challenge intruders.

The scrub woodland areas around Clifton Backies are ideal sites.

I am very pleased to announce that this butterfly had similar success this year to last, doubling numbers to 177 this year (amazing since only 7 were counted in 2004!)



Wall

This butterfly has always been a familiar sight in the area, choosing sunny banks or tracking along woodland rides, although it appears national numbers have declined in recent years.

Strangely no first brood butterflies were seen, but the second brood was fairly strong. Overall the numbers have declined steadily over the years and need to improve rapidly



Marbled White **New Species**

This butterfly is in fact a black butterfly with white spots and belongs to the brown family. Larvae feed on Fescues or Yorkshire Fog.

This is an exciting find at Clifton Backies, as this butterfly has not been observed within York. Even more exciting was the fact that the female was seen laying eggs on the site.



Gatekeeper

As soon as the Meadow Brown and Ringlet were reducing in numbers, this butterfly was seen in large numbers along all hedgerows of the site basking with open wings.

Now the fourth most common butterfly on the site.



Meadow Brown

Although this butterfly is the most common British butterfly, it was only the third most common on Clifton Backies.

True to its name, the Meadow Brown was generally found on the large meadow areas, since many species of grass are chosen as the larval food plant.

Numbers have increased this year, starting to catch up with the Ringlet.



Ringlet

The Ringlet was once not found this far north, but is now extremely common and widespread in meadows flying with the Meadow Brown.

It was often very difficult to count since there were such large numbers during three weeks in the summer.

Analysis

Butterfly Conservation provide a computer software program known as **Transect Walker** that allows the weekly counts, weather conditions and timings to be recorded, but also provides the facility for further analysis of the results.

The following table contains a breakdown of the species over the 26 recorded weeks of the year, which clearly shows the butterfly flight times and hence the broods over the year.

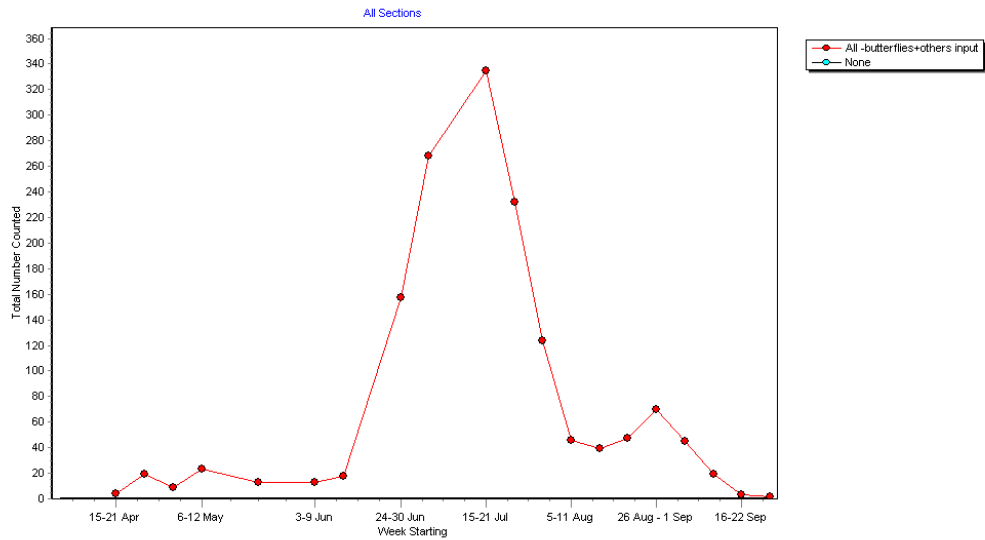
| Week | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | Total | Weak Index |
|---------------------|---|---|------|------|------|------|----|------|----|------|------|----|------|------|-----|------|------|------|------|------|------|------|------|------|------|------|-------|------------|
| Date | | | 16/4 | 24/4 | 03/5 | 09/5 | | 23/5 | | 09/6 | 11/6 | | 30/6 | 07/7 | | 17/7 | 24/7 | 04/8 | 09/8 | 16/8 | 22/8 | 01/9 | 08/9 | 15/9 | 21/9 | 26/9 | | |
| Small Skipper | | | | | | | | | | | | 9 | 19 | 63 | 115 | 142 | 55 | 3 | | | | | | | | | 282 | 406 |
| Large Skipper | | | | | | | | | 1 | 3 | 6 | 8 | 14 | 17 | 14 | | | | | | | | | | | | 40 | 63 |
| Brimstone | | | | | | | | | | | | | | | | | | | | | | | 1 | | | | 1 | 1 |
| Large White | | | | | | | | | | | | | | | 1 | | 18 | 3 | 6 | 1 | 4 | 4 | | | | | 37 | 37 |
| Small White | | | | 1 | 7 | 12 | 7 | 4 | 2 | 2 | 1 | | | | 1 | 5 | 25 | 33 | 6 | 5 | 2 | 2 | 12 | 5 | | 1 | 115 | 133 |
| Green-veined White | | | | | | | 2 | 1 | | | | | 1 | 1 | | 9 | 10 | 1 | 5 | 2 | 15 | 5 | | | | | 50 | 52 |
| Orange-tip | | | | | 7 | | 3 | | | | | | | | | | | | | | | | | | | | 10 | 24 |
| Small Copper | | | | | | | | | | | | | | | | | 7 | 3 | 1 | 4 | | | 1 | | | | 16 | 16 |
| Brown Argus | | | | | | | | | | | | | | | | | | 2 | 1 | | | | | | | | 3 | 3 |
| Common Blue | | | | | | | | | | | | | 1 | 1 | | 2 | 2 | 4 | 4 | 3 | | | | | | | 16 | 17 |
| Holly Blue | | | | | | | | | | | | | | | | 2 | | | | | | | | | | | 2 | 2 |
| Red Admiral | | | | | | | | | | | | | | | | 2 | 1 | | | | 1 | 1 | 6 | 1 | | | 12 | 12 |
| Painted Lady | | | | | | | | | | 2 | 3 | 2 | | | | | | 1 | 2 | | | | | | | | 7 | 10 |
| Small Tortoiseshell | | 1 | 3 | 1 | 1 | | | | | | | | 3 | 2 | 1 | | | | | | | | | | | | 12 | 18 |
| Peacock | | | 11 | 5 | | | 1 | | | | | | | | | 3 | 4 | | | | 1 | | 1 | | | | 26 | 26 |
| Comma | 1 | 3 | 5 | 2 | | | | | | | | 1 | 1 | 1 | | | | | | | | 3 | 3 | 1 | | | 19 | 21 |
| Speckled Wood | | | | | 8 | 8 | | 5 | 10 | 11 | 8 | 3 | | | 1 | | 6 | 2 | 11 | 32 | 48 | 18 | 4 | 1 | 1 | 156 | 177 | |
| Wall | | | | | | | | | | | | | | | | 9 | 12 | 4 | 2 | | | | | | | | 27 | 27 |
| Marbled White | | | | | | | | | | | | | | | 1 | 1 | | | | | | | | | | | 2 | 2 |
| Gatekeeper | | | | | | | | | | | | 5 | 20 | 43 | 101 | 24 | 10 | 2 | | | | | | | | | 185 | 205 |
| Meadow Brown | | | | | | | | | | | | 3 | 42 | 50 | 60 | 74 | 12 | 2 | 1 | | | | | | | | 181 | 244 |
| Ringlet | | | | | | | | | | | | 3 | 83 | 130 | 111 | 52 | 18 | 4 | | | | | | | | | 287 | 401 |
| Total | 0 | 1 | 4 | 19 | 9 | 23 | 20 | 13 | 10 | 13 | 18 | 18 | 157 | 268 | 195 | 335 | 232 | 124 | 46 | 39 | 47 | 70 | 45 | 19 | 3 | 2 | 1486 | 1897 |

KEY

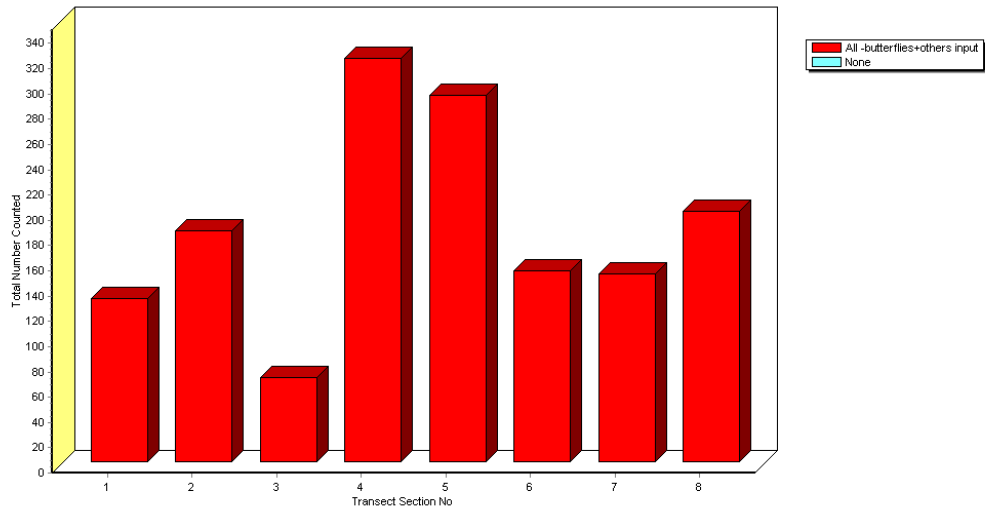
| | |
|--|---------------------|
| | Single Brood / Year |
| | Two Broods / Year |
| | Three Broods / Year |
| | Migrant |

Numbers in Red are estimated for missing weeks

From the above table and the chart below it can be seen that the majority of the butterfly numbers are counted in only a very short period between the end of June and mid August. There was 1 week within this period where counts were not carried out while I was on holiday, however the software compensates for this generating an estimated number for the missing weeks (represented by the **Index** column – see the table above).

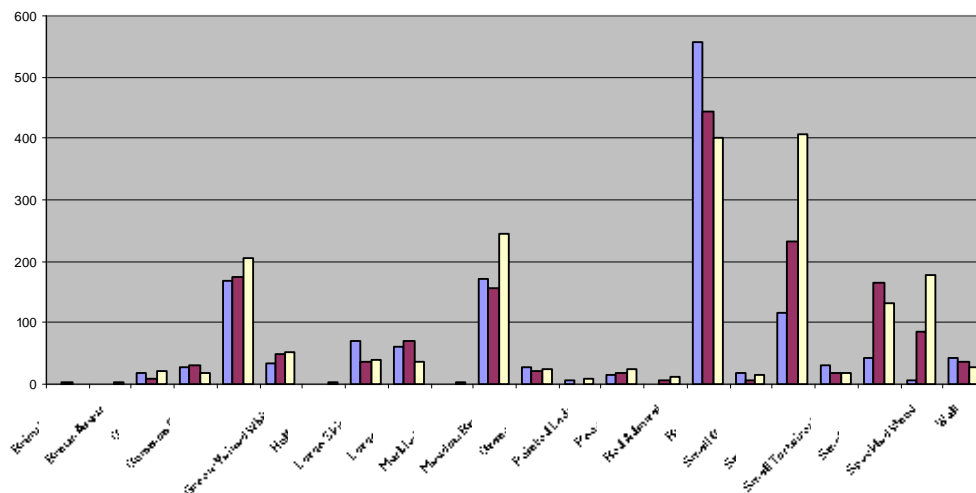


The number of butterflies in the different transects were also not evenly distributed, and the following graph represents which transects provided the most butterflies.



Apart from transect 3, which was well down on the others (due to being the shortest of the transects and low butterfly nectar sources). Transect 4 is the most successful transect, closely followed by transect 5. The reason for the big increase in numbers in this transect is that the habitat is perfect for 2006's successful species - Speckled Wood, Small Skipper, Ringlet, Meadow Brown, Gatekeeper and Small White.

Butterfly Count Comparison 2004 - 2006



From this graph, it is clear to see the trend of the butterfly species from 2004 to 2006.

Small Skipper and Speckled Wood are our major winners in the 3 years, both have doubled their numbers since last year.

Three new butterflies have extended their range to the Clifton Backies site in 2006 – Brown Argus, Holly Blue and Marbled White.

Comma, Gatekeeper, Green-Veined White, Large Skipper, Large White, Meadow Brown, Orange Tip, Painted Lady, Peacock, Red Admiral, Ringlet, Small Copper and Small White have all increased since 2005 or are present in sufficient numbers to cause no alarm.

Brimstone, Common Blue, Small Tortoiseshell and Wall Brown are decreasing in number, or there are so few that any further reduction may threaten their existence.

An action plan is required to look at ways in which we can protect these species.

Further Reading

Butterfly Conservation Website – <http://www.butterfly-conservation.org> - provides resources for people interested in helping to prevent the decline in British Butterfly numbers.