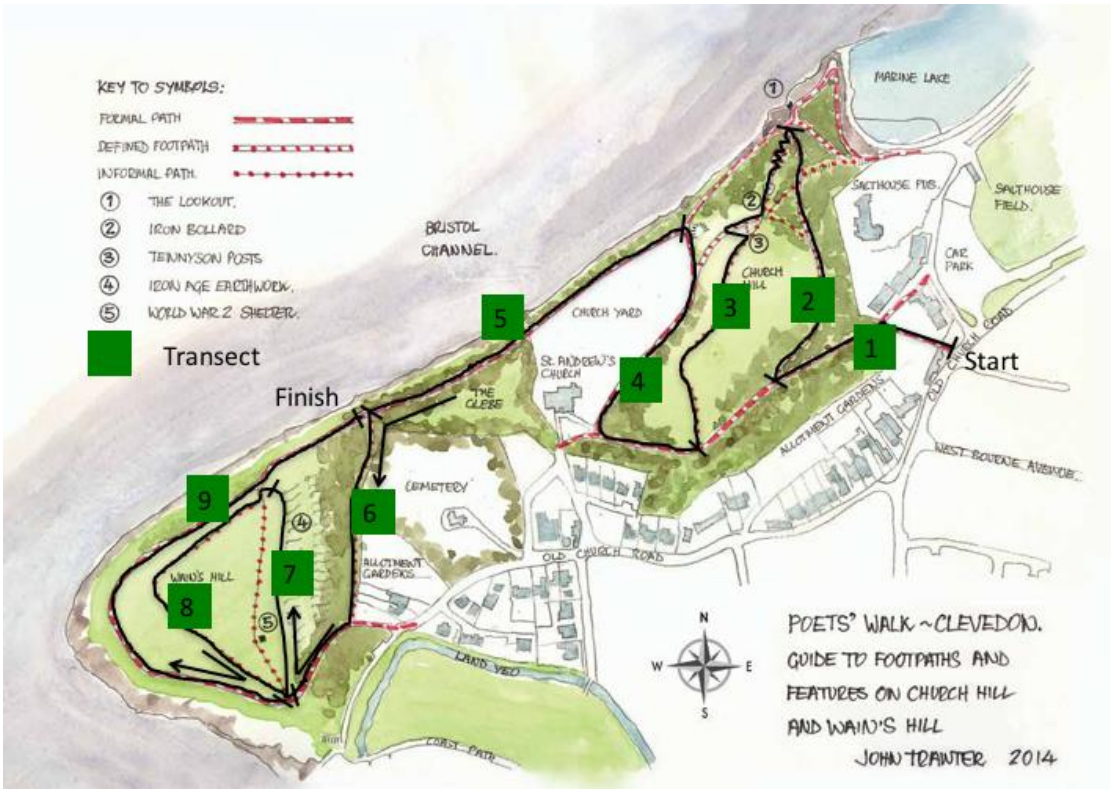
Church Hill and Wains Hill Butterfly Transect 2016

1. Introduction

Many thanks to all who contributed this year and helped establish the first transect on Poets' Walk. This would have not been possible without the help of Angela Slotte, Simon Osborn, Carol Wood, Sue Batchelor, Pam Soper and Pauline Bissett and occasional stand in for me, Catherine Bennett. As this was the first year we didn't really know what to expect and whether or not the sections of the transect were viable. We collected a lot of data and this summary attempts to establish a baseline from which we can judge upcoming years. I realise it is very difficult to draw many conclusions from the information as there are too many variables involved: weather, time of transect, individual recognition skills etc. but the important thing is to see how many species of butterfly are present and how the populations will compare on an annual basis. It is reasonably easy to recognise a good year from a bad year and always the assumption is that the weather is the major contributory factor to overall numbers so, good news, **it has been reasonable summer.**

If we can use this information to help manage habitat on the walk and so improve butterfly populations by conservation activity, it would be a bonus. Obviously there are competing priorities, footpath clearance, bridleway clearance and scrub management for limestone grassland as well as the need to encourage diversity of other species, but our butterfly data could be another factor in the management process.

Church Hill and Wains Hill Transect Sections



2. Headline Data

Annual Comparison

As this is our first year there are no comparisons to be made against other years but we recorded a total number of 639 butterflies. There were no unusual species on the walk but the recording of an Essex Skipper is of interest and I was delighted that a couple of Small Copper were sighted late in the year. We also had sight of ten Painted Lady which is always a pleasure but unfortunately there were no Fritillary so, maybe next year.

If we look at the weekly results in Chart 1, which looks at the totals across the 26 weeks, there are a lot of peaks and troughs but this is expected because of the many variables we discussed earlier. The year was very slow to start but did pick up later and the variable weather has definitely been a factor this year.

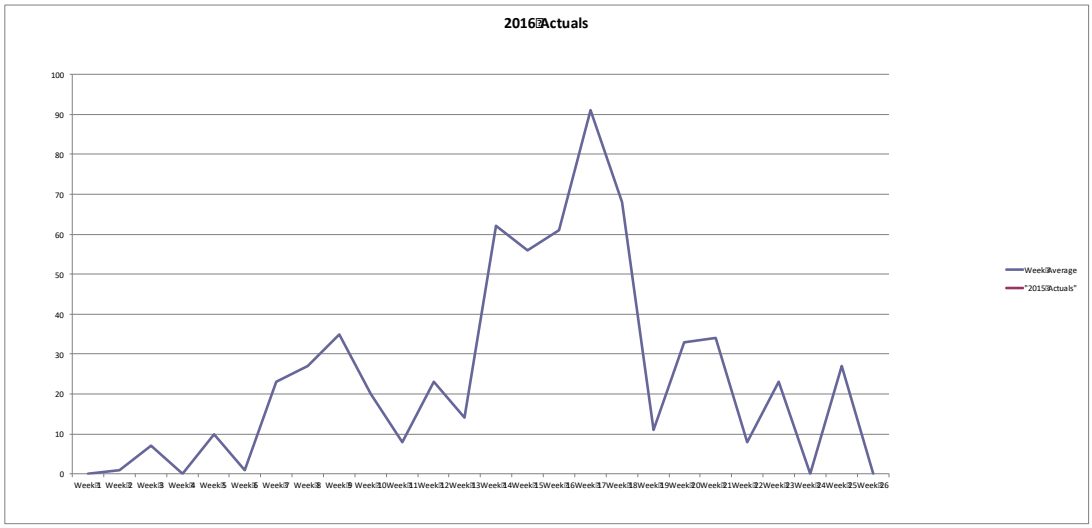


Chart 1 – 2016 Weekly Actuals

Number of Species and Totals

A total of twenty-two species were recorded this year, which is a reasonable number bearing in mind the coastal nature of the walk with perhaps higher than average wind speeds but I have to say from my perspective I am a little disappointed in the totals. This could be a consequence of the multiple usage the area gets in terms of walkers, runners, dogs etc. but we must accept this as the area is a wonderful recreational resource for Clevedon. Perhaps when we have collected more data we may be able to look at habitat improvement for the butterflies but always with a thought to the general usage and recreational nature of Poets' Walk.

Listed below in Tables 1 and 2 are the species seen in 2016. As you can see the vast majority of butterflies are of the White/Yellow and Brown families.

Table 1 – Species and Totals

Butterfly Species	No.	Family
Small White	153	White/Yellow
Meadow Brown	129	Brown
Large White	115	White/Yellow
Gatekeeper	52	Brown
Speckled Wood	39	Brown
Marbled White	30	Brown
Ringlet	19	Brown
Red Admiral	15	Emperor/Vanessid/Fritillary
Common Blue	12	Hairstreak/Copper/Blue
Green Veined White	11	White/Yellow
Holly Blue	11	Hairstreak/Copper/Blue
Painted Lady	10	Emperor/Vanessid/Fritillary
Orange Tip	8	White/Yellow
Small Tortoiseshell	8	Emperor/Vanessid/Fritillary
Brimstone	6	White/Yellow
Small Heath	5	Brown
Wall	4	Brown
Essex Skipper	3	Skipper
Peacock	3	Emperor/Vanessid/Fritillary
Dingy Skipper	2	Skipper
Small Copper	2	Hairstreak/Copper/Blue
Comma	2	Emperor/Vanessid/Fritillary

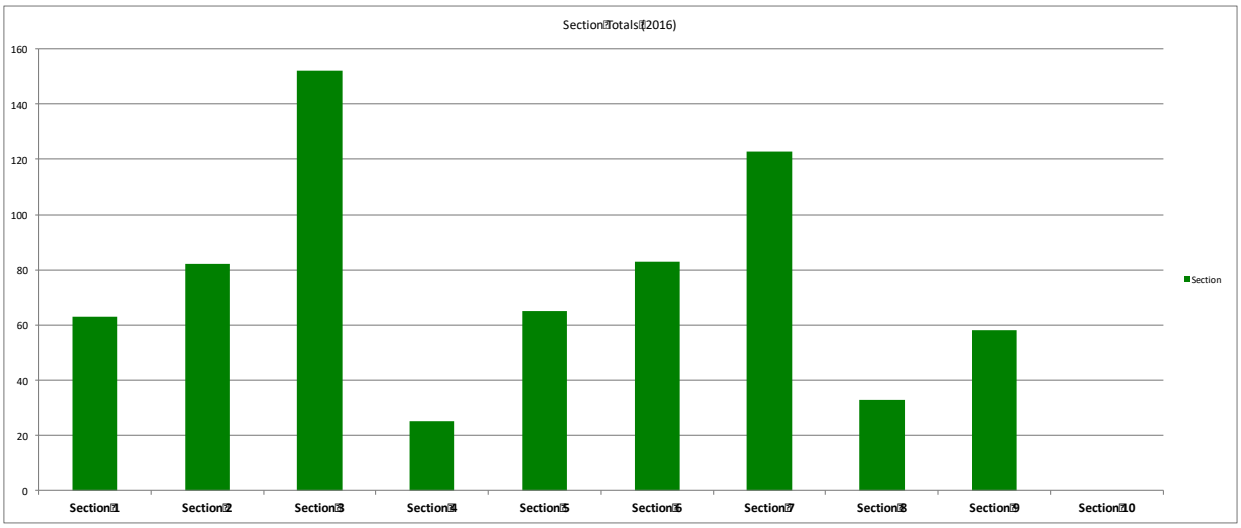
Table 2 – Totals by Family

Family	Total
White/Yellow	293
Brown	278
Emperor/Vanessid/Fritillary	38
Hairstreak/Copper/Blue	25
Skipper	5

Section Totals

The transect is nine sections long, with a mixture of allotment gardens, woodland and coastal pathways and open grassland. The butterfly numbers are fairly evenly spread with the majority being recorded in sections three and seven. However, sections four and eight are disappointing, as these record the lowest numbers. Section four in particular, the pathway alongside the cemetery wall, is poor even though there are substantial grassy edges to the path. Perhaps this is an area we may look to improve?

Chart 2 – Section Totals



Detailed below is the breakdown for each section in terms of species diversity and numbers. It is interesting to see the domination of the whites and browns across all sections but how fragile the populations of other species are and perhaps how habitat dependent they are.

Table 3 – Breakdown of Species by Section

Sections	Essex Skipper	Dingy Skipper	Brimstone	Large White	Small White	GV White	Orange Tip	Small Copper	Common Blue	Holly Blue	Red Admiral	Painted Lady	Small Tort	Peacock	Comma	Speckled Wood	Marbled White	Gatekeeper	Wall	Meadow Brown	Small Heath	Ringlet
1	0	0	0	24	25	1	4	0	0	2	1	0	0	1	0	3	0	1	0	0	0	0
2	0	1	0	16	11	5	3	0	1	0	1	0	2	0	0	23	1	0	0	15	1	0
3	3	1	1	17	45	1	0	0	2	0	1	3	1	0	1	5	3	16	0	37	1	11
4	0	0	1	3	5	1	0	0	1	0	0	1	0	1	0	3	0	0	0	4	0	1
5	0	0	1	17	13	0	0	0	0	1	3	3	1	0	0	1	3	9	2	6	0	0
6	0	0	3	17	28	0	1	0	3	1	7	0	0	1	1	3	0	3	2	7	0	0
7	0	0	0	10	14	3	0	2	2	2	2	1	4	0	0	0	16	17	0	39	0	4
8	0	0	0	4	6	0	0	0	0	0	0	0	0	0	0	0	3	0	0	12	0	0
9	0	0	0	7	6	0	0	0	3	5	0	2	0	0	0	1	4	6	0	9	3	3

Habitat management is very important here and I would like to quote John Andrews, chair of the Somerset and Bristol Branch of Butterfly Conservation, writing in the Arion last year.

"*Butterflies and moths, despite their apparent fragility are great survivors. Their simple strategy is to be single-minded, purposeful opportunists.*
Of course many individuals do fail. Sometimes circumstances dictate that a whole population will fail. This mattered much less when the countryside was more or less, a continuum of good habitat so that, if the population in one area died out, it

would in time be replaced by colonists from nearby. Now, good sites are usually isolated, surrounded by unsuitable habitat, and most of the species that cause us greatest concern have such specialized habitat needs that they only survive in widely separated 'islands'."

In our case, it is reasonable to suggest that the number and diversity of species on Poets' Walk seem to depend on good habitat management of the pathways, grassland areas, hedges and edges. I guess we instinctively knew this but it also provides some food for thought as to what we could do, if anything, for the remainder of the sections that are not so productive in terms of species and numbers.

3. Habitat Management

The Butterfly Conservation website gives good information with regard to management of various types of habitat to preserve and improve population. Below is a précis of information from that website that could be used as an input to the Conservation Plan for the benefit of butterfly populations. **Achieving this level of maintenance will be difficult bearing in mind manpower constraints and other priorities but maybe we can concentrate on a few specific areas for improvement**.

Grassland

Fields of unimproved semi-natural grassland containing wild grasses and flowers are rare but vital wildlife habitats (e.g. chalk or damp grassland) may contain over 25 butterfly species, including some rare or declining ones.

- The ideal management depends on the situation and management history.
- Some species prefer shorter (and thus warmer) vegetation while others prefer taller or mixed conditions.
- Extensive or seasonal grazing is often best because this produces varied turf conditions.
- Retain and **manage sympathetically any areas of unimproved pasture, rough grassland, or flower-rich areas.**
- **Leave some areas to grow tall.**
- Maintain **permanent grassland strips containing native grasses and wildflowers around field margins and along tracks.**
- Cut once a year or every other year during the autumn to prevent scrub invasion and maintain plant diversity, **but leave a few areas uncut.**

Semi-improved grassland can be important for some widespread species Examples include:

- Wet grassland with rushes for Green-veined White and Orange-tip.
- Acid and neutral grassland with native grasses and wildflowers for Meadow Brown, Common Blue, Ringlet and other species.

Strips and patches of grassland along hedges, ditches and tracks, in field corners, within orchards and other uncultivated areas is the main breeding area for most widespread butterflies and can be encouraged in a variety of situations:

- **Generally, the vegetation should be left uncut though the growing season** to provide nectar sources and breeding habitat.
- **Where appropriate**, rough cutting can take place in August and September, **after the peak butterfly season.**
- **Some vegetation should preferably be left uncut to provide over-wintering sites (such as grass tussocks)** and there should be only very selective use of pesticides.

Hedges

Well-managed hedges are lifelines for butterflies, especially if they have a grassy margin with wild flowers.

- **Mixed hedges are best** - for example, those with blackthorn can support the rare Brown Hairstreak while those with buckthorn or alder buckthorn suit the Brimstone.
- **Trimming on rotation every second or third year** provides good sources of nectar.
- **Traditional hedge-laying is also very beneficial** as it provides a variety of hedge structure.
- **Annual winter cutting can be particularly harmful to some species that overwinter in hedgerows.**
- Vary hedge cutting and management to provide variety. **Cut hedges in rotation** so that each section is cut every 2 -3 years or longer but with some taller, some wider and some free growth –especially at hedge junctions and retain hedgerow trees.
- **Do not cut all hedge verges as many butterflies have stages that overwinter in tall or tussocky vegetation.**

Woodland and Scrub

This is crucial habitat for many butterflies, especially if they contain a range of broad-leaved trees and wide sunny woodland rides or glades**.**

- For most species **rides should be as wide and open to sunlight as poss**ible.
- **Cut the central section of rides in summer or autumn, but try to leave shrub margins.** Establishing a shrub margin will provide a gradation of habitats alongside the ride. **Cut edges in sections on longer rotations** of 2-8 years.
- Create sunny rides and glades in woodland and **leave rough grassy strips around wood edges.**
- **Patches of scrub provide shelter for butterflies and breeding habitat** for species such as Brimstone, Holly Blue and Green Hairstreak. The best management is to **cut back periodically in patches and allow to regrow**, thereby providing good structure and a range of ages.
- **Retain numerous patches of nettles in sunny sites**. If some are **cut in mid-July, this creates young growth favoured by the summer brood of Small Tortoiseshell butterflies**. Butterflies generally prefer nettles growing in sunny places.

4. Over Winter

Unlike mammals and birds, butterflies rely mainly on external sources of heat to warm their bodies so that they can be active. Although many are adept at increasing their body temperature way above ambient air temperature by basking in sunshine or shivering (vibrating their flight muscles), when their surroundings are really cold, most butterflies are forced to remain inactive.

Not surprisingly, winter poses a problem for butterflies in temperate climates. It is difficult for them to get warm and, therefore, be active and so they have evolved ways of dealing with winter. Most species enter a dormant phase. This can be as an egg, larva, pupa or adult insect, dependent upon species. The majority of butterflies and moths overwinter in the caterpillar (larval) stage, with pupae being the next most common choice, followed by eggs and adults. A few are capable of overwintering in more than one stage. The Speckled Wood butterfly for example can overwinter as a caterpillar or a pupa.

In midwinter, the butterflies and moths you are most likely to encounter are those that are either active as adults or those that are dormant as adults. Eggs, larvae & pupae tend to be hidden away, though you may find Large White pupae attached to the walls of your house.

Those species that overwinter as dormant adults include Brimstone, Small Tortoiseshell, Peacock and Comma. The Red Admiral, which has become a common sight in British winters of late, doesn't enter a proper dormancy but becomes active on any suitable days. Only the Small Tortoiseshell and Peacock regularly overwinter inside houses. They come in during late summer/early autumn, when it is still warm outside and our houses appear to provide suitably cool, sheltered, dry conditions. Other species use a wall or ceiling of an unheated room or building such as a shed, porch, garage or outhouse.

Understanding how various butterfly species overwinter may help inform management of the habitat on the transect route. Most of our species see out the winter as caterpillars or pupa (See Table 4) so again, looking after the pathways and bridleways, especially the edges and hedges, is an important task to ensure we keep diversity and numbers in the population.

Species	**Broods**	**Overwinter**
Large Skipper	1	Caterpillar
Small Skipper	1	Caterpillar
Dingy Skipper	2	Caterpillar
Grizzled Skipper	1	Pupa
Clouded Yellow	1	Caterpillar
Brimstone	2	Adult
Large White	2	Pupa
Small White	2	Pupa
Green-veined White	2	Pupa
Orange Tip	1	Pupa
Green Hairstreak	1	Pupa
Small Copper	2	Caterpillar

Brown Argus	2	Caterpillar
Common Blue	2	Caterpillar
Holly Blue	2	Pupa
Red Admiral	2	Adult
Painted Lady	2	Migrant
Small Tortoiseshell	3	Adult
Peacock	2	Adult
Comma	3	Adult
Small P B Fritillary	1	Caterpillar
Dark Green Fritillary	1	Caterpillar
Silver Washed Fritillary	1	Caterpillar
Speckled Wood	2	Caterpillar or Pupa
Marbled White	1	Caterpillar
Grayling	1	Caterpillar
Gatekeeper	1	Caterpillar
Wall	2	Caterpillar
Meadow Brown	1	Caterpillar
Small Heath	2	Caterpillar
Ringlet	1	Caterpillar

Table 4

4. Summary

Our first year of recording butterflies on Poets' Walk has been a success. We have managed to produce a record for almost every week during the period and only the bad weather over certain weeks has been an issue. I would like to thank again all those who helped this first year and hope that it has not been too onerous as I know we all have many other priorities. So congratulations all round and I hope you are happy to do it all again next year.

With regard to the Conservation Management of habitat for butterflies, I know it is difficult as there are many other issues, not least having enough manpower to do all of the work needed anyway, but I hope the data we collect can go some way to helping formulate a plan that can add species diversity to an area we all know and love.