

# Addingham Environment Group



## Bumblebee and Butterfly Observations - 2020 Season Report

The AEG Bee and Butterfly Team

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### 2. Executive summary

1. In 2020 volunteer observers recorded bee and butterfly populations along 10 village transects at approximately weekly intervals from April 1<sup>st</sup> to September 30<sup>th</sup> (bees) and April 1<sup>st</sup> to October 31<sup>st</sup> (butterflies).
2. In total 1,400 bees and 1092 butterflies were recorded.
3. Nine species of bumblebee and eighteen species of butterfly were identified. The most common bumblebees were the White/Buff-tailed, Tree and White-tailed bees. The most common butterflies were the Small White, Large White and Small Tortoiseshell.

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4. The greatest numbers of bumblebees were observed in the new Sidebeck estate wildflower meadow and the greatest number of butterflies in the Old First School site. Two of the village allotments, Upper Stamp Hill and Newtown, also had relatively abundant populations of bees and butterflies.
5. Except for the Skipton Road Bank site, which had good populations of wildflowers, bees and butterflies, none of the zones with wildflower sites actively managed by the Addingham Environment Group (AEG) to convert regularly mown grassland to wildflower rich meadow had bee or butterfly populations significantly different from other zones across the transects.
6. Wildflowers most commonly supporting pollinator populations were blackberry, comfrey, ragwort, vetch, clover, foxglove, nettles and knapweed.
7. Small modifications to the design of the recording programme will be made for the 2021 season beginning on April 1<sup>st</sup> but changes will be kept to a minimum to enable observations year on year to be comparable

### 3. Introduction

The AEG began recording bees and butterflies along defined village transects in July 2019. The transects were designed not only to document the abundance and diversity of bees and butterflies generally in the village but also to assess the effectiveness of our efforts to increase wildflower populations in village green spaces as a means of enhancing their attractiveness for pollinators.

This is our report for the 2020 season. It summarises the results of the season's observations transect by transect. All primary data that form the basis of the report are contained in a comprehensive interactive spreadsheet, available to [download here](#).

### 4. Sites

There are now ten transects (Figure 1), three more than in 2019. The new ones are Transects 1, 9 and 10. Transect 1 includes the small public gardens along Main St. Although the route was designed in 2019 observations did not begin until 2020. Transects 9 and 10 were added to extend coverage beyond the built-up area of the village. They were both designed to pass through wildflower-rich habitats. Transect 9 includes the grass bank near the junction between Skipton Road and the Bypass, managed as a wildflower site by AEG, and Transect 10 takes in three Local Wildlife Sites: The Street, Steg Holes and Lumb Gill Wood.



## Bees and Butterflies All Transects

- |   |   |
|---|---|
| T1 : Main Street & Garden Friends (Pam Wells) | T6 : Old Station Way (Jessica Penrose)                            |
| T2 : Sidebeck (Julia Tomlinson)               | T7 : Hoffman Wood (Margaret Longden)                              |
| T3 : Old First School (Peter Miller)          | T8 : Low Mill (Mark Penny)  |
| T4 : Garth and School (Claire Godden)         | T9 : Skipton Road Wildflower Site and Golf Club (Maire O'Donnell) |
| T5 : Marchup (Mick Dunne)                     | T10 : The Street and Stegg Hole (Sara Arrowsmith)                 |

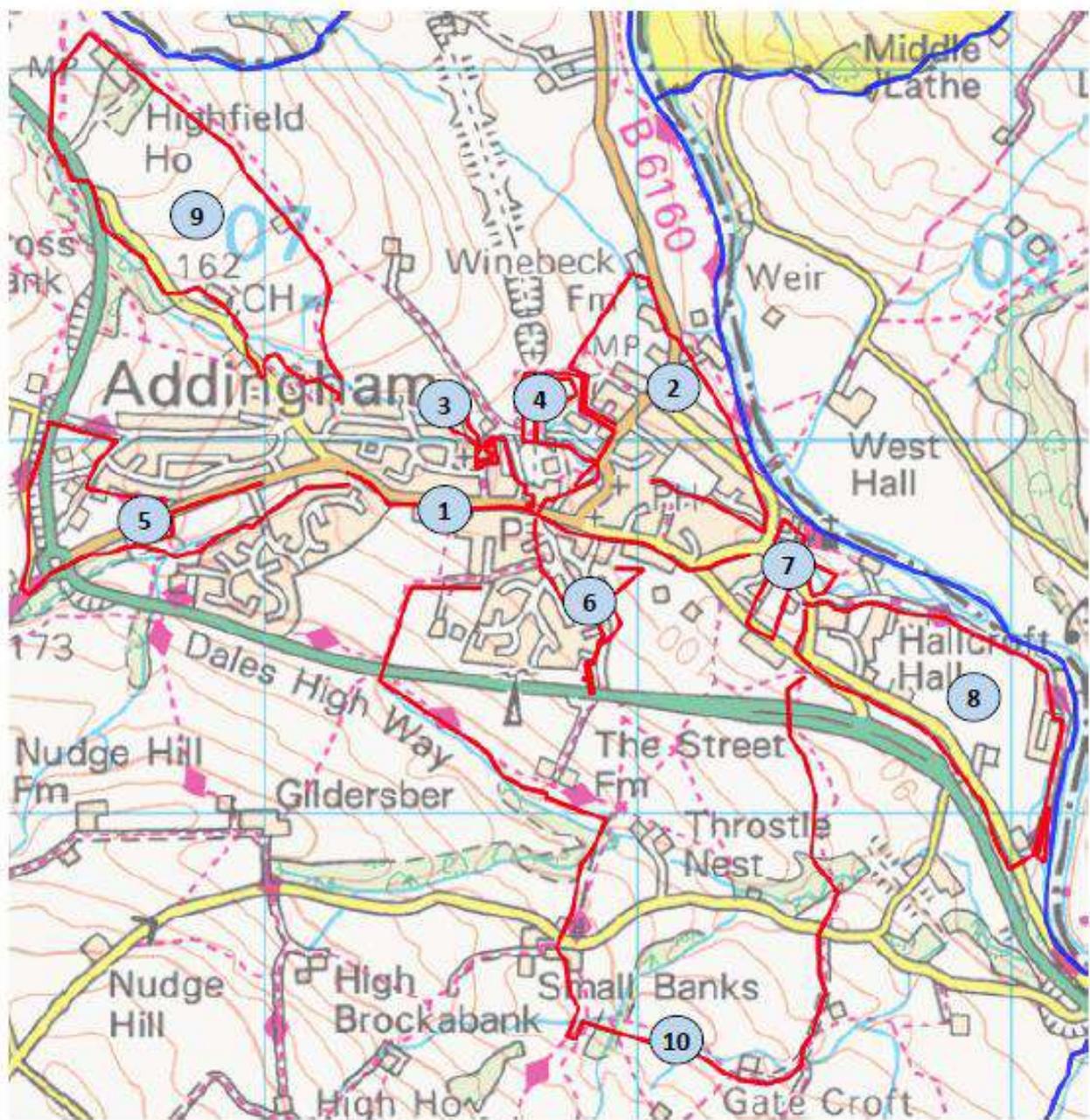


Figure 1: Addingham bee and butterfly transects

## 5. Methods

Each transect is sub-divided into zones, each zone representing a different habitat. Observers were provided with pro-formas on which to record their sightings on a zone by zone basis. As far as possible transect walks were made once every week or two during the season defined as 1<sup>st</sup> April to 30<sup>th</sup> September for bumblebees and 1<sup>st</sup> April to 31<sup>st</sup> October for butterflies. The method of recording observations followed the guidance provided by the Yorkshire Dales Millennium Trust in 2019. Advisers Maurice White (Bees) and Diane Morris (Butterflies) provided help with identification. In the case of bees a WhatsApp group was set up to share photographs and to confirm IDs.

For data entry a simple online spreadsheet mirroring the recording forms was used, one for each transect. Observers without online access handed in their field proformas to the recording co-ordinator, Malcolm Secrett, who entered the data on their behalf. Numerical analysis was carried out in Excel (see below Appendix B for details).

## 6. Results

Here we summarise the results transect by transect. The transect maps show the route walked and the division of the transects into zones. The tables summarise the numbers of different species of bees and butterflies recorded in each zone.

### Transect 1: Main St and Pocket Gardens

#### Observer - Pam Wells

Transect 1 (Fig. 2) runs from the top of Main Street down to the Memorial Garden and includes the gardens in the care of Addingham Garden Friends: Lay-By Garden opposite Townhead Trading Estate; Sailor Corner Garden; Cottages Garden; Fountain Garden; Hen Pen Garden; the Memorial Hall car park and the Memorial Close area.

The Cottages Garden, Fountain Garden and Hen Pen Garden all attracted good numbers of pollinators for most of the season. The Lay-By Garden (Zone A) has a cotoneaster that was buzzing especially with Tree Bees during June but was very quiet for the rest of the season. Tree and White/Buff-tailed bees were also abundant on lavender in the Hen Pen (Zone H) and in Zone I in June. The Sailor Corner Garden (Zone C) was almost devoid of bees and butterflies at all times, perhaps because of its very shaded position.

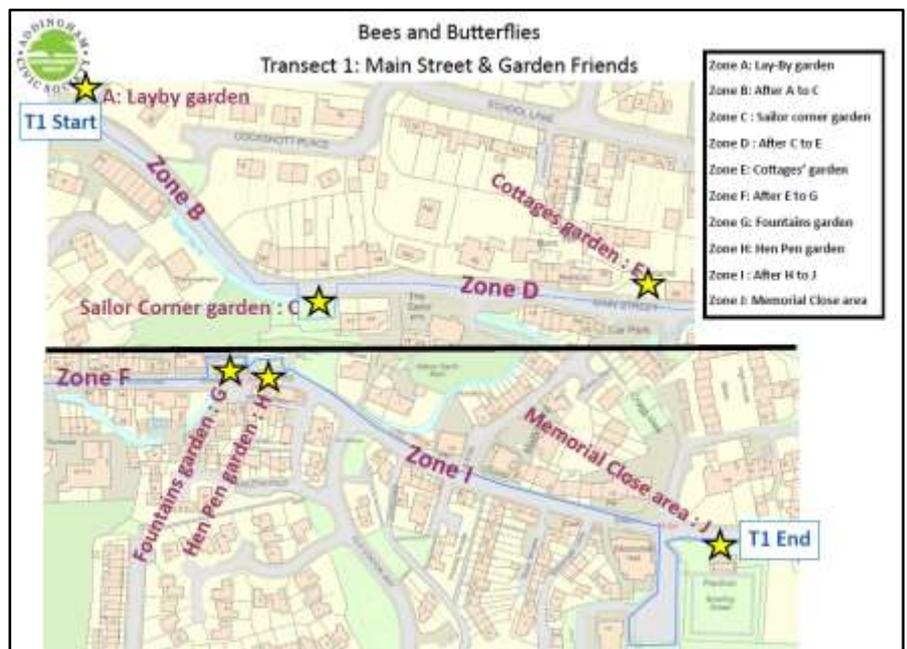


Figure 2: Transect 1

The Memorial Close (Zone J) is a similarly barren area in permanent shade although, nearby, in the Memorial Hall car park, bees were observed on the wide variety of flowers near the surgery, and some rowan trees adjacent to the Bowling Green were host to many bees when the blossom was out in April.

A few private gardens had a good range of suitable plants, and the garden in front of Mount Herman Chapel too was busy with bees during mid-summer.

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In contrast to bees, butterfly abundance was quite low in almost all zones. The most common species were Small Whites and Small Tortoiseshells in the Cottages Garden (Zone E), in Zone F, the Fountains Garden (Zone G) and the Hen Pen Garden (Zone H).

Transect: 1		Zones .....									
Bees	Total	A	B	C	D	E	F	G	H	I	J
Total	220	26	20	1	14	15	9	21	42	72	
White/Buf-tailed	102	3	7	1	7	15	8	11	19	31	
Tree	84	22	8		4			10	21	19	
Unknown	15		1		1					13	
Red-tailed	13		2		2				1	8	
Garden	5	1	2						1	1	
Buff-tailed	1						1				

Table 1: Number of individuals observed in Transect 1 by zone (a) bees; (b) butterflies.

Transect: 1		Zones .....									
Butterflies	Total	A	B	C	D	E	F	G	H	I	J
Total	74	2	4		6	16	12	19	9	5	1
Small White	41	2	3		4	7	9	5	6	4	1
Small Tortoiseshell	16		1		1	8		5	1		
Orange-tip	8							7		1	
Large White	4						3	1			
Peacock	2					1			1		
Brimstone	1				1						
Comma	1							1			
Red Admiral	1								1		

### Transect 2: Sidebeck, Dalesway and Wine Beck

#### Observer - Julia Tomlinson

The transect begins in zone A through the newly sown wildflower meadow on Sidebeck estate. This was the most productive zone, the Red-tailed bees especially being quite abundant, feeding on red and white clover, ox-eye daisy and particularly meadow vetchling.

The continuation of Zone A along Wharfe Park has little foraging to offer, other than a couple of lavender plants.

Zone B, which goes along the path above the river to High Mill is a shaded woodland section and, except for some blackberry and ivy, there are few opportunities for pollinators. Only 25 bees and 11 butterflies in total were observed in this zone. Zone C which goes from High Mill and then alongside the road to Wine Beck is also a poor habitat for bees and butterflies. Except for a flowering currant bush and a little ivy there is little nectar for bees. However, this was the zone with the highest number of butterflies in the transect. Orange-tips and Meadow Browns were the most abundant.

Zone D from Wine Beck across the fields to the school boundary had a good growth of yellow rattle in June which attracted Buff/White tailed bees. Orange-tip and Meadow Brown butterflies were also seen in this zone.

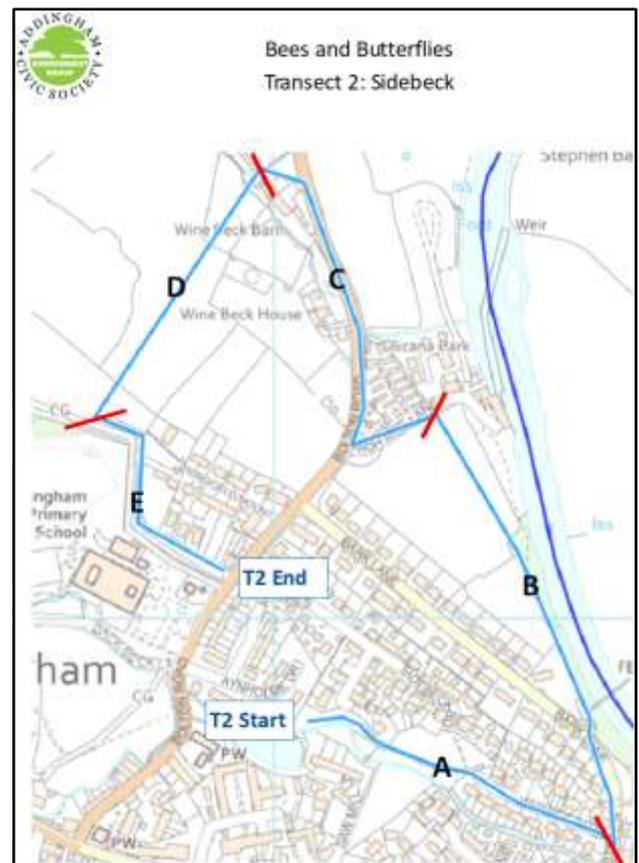


Figure 3: Transect 2

Zone E runs along the periphery of the school. In June bees and butterflies were seen on wild cherry trees, wild rose, comfrey and purple vetch. The newly created scrapes in the Primary School wetland will increase the abundance of wildflowers in the future potentially offering more opportunities for pollinators next year.

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Transect: 2		Zones .....				
Bees	Total	A	B	C	D	E
Total	208	142	25	18	7	16
White/Buf-tailed	85	58	10	7	3	7
Red-tailed	55	53	1	1		
Tree	50	28	9	2	2	9
Buff-tailed	9	2	3	4		
Common carder	4	1	2	1		
White-tailed	4			2	2	
Unknown	1			1		

Transect: 2		Zones .....				
Butterflies	Total	A	B	C	D	E
Total	78	14	11	25	16	12
Orange-tip	20	1	1	9	7	2
Meadow Brown	17	6		5	5	1
Small White	16	2	8	3	1	2
Large White	10	4	1	3	1	1
Small Tortoiseshell	7	1	1	2		3
Peacock	2			2		
Red Admiral	2					2
Large Skipper	1					1
Small Skipper	1					1
Speckled Wood	1			1		

Table 2: Number of individuals observed in Transect 2 by zone (a) bees; (b) butterflies

### Transect 3: Sugar Hill, Old First School Site and Methodist Graveyard

**Observer: Peter Miller**

The transect is divided into five zones. The first (A) starts where Sugar Hill joins Main Street. The grassed area here includes a section of old railway embankment. A number of White/buff-tailed bees was observed but very few butterflies.

Zone B follows the Sugar Hill roadway to join Back Beck Lane and then turns left to enter the old First School site. This is a zone with low populations of bees and butterflies.

Zone C, however, the old First School site and an area designated as a Local Green Space valued for its biodiversity, has a variety of habitats and supports much wildlife, including good numbers and a wider diversity of pollinators than elsewhere along the transect. This included Common Carder and Tree Bees as well as White and Buff-tailed bees and 11 species of butterfly with Ringlets being especially common in the long grass area of the site.

Zone D runs along Chapel Street until the entrance of the Methodist Church graveyard. Only one bee and no butterflies were observed in this short zone along the road.

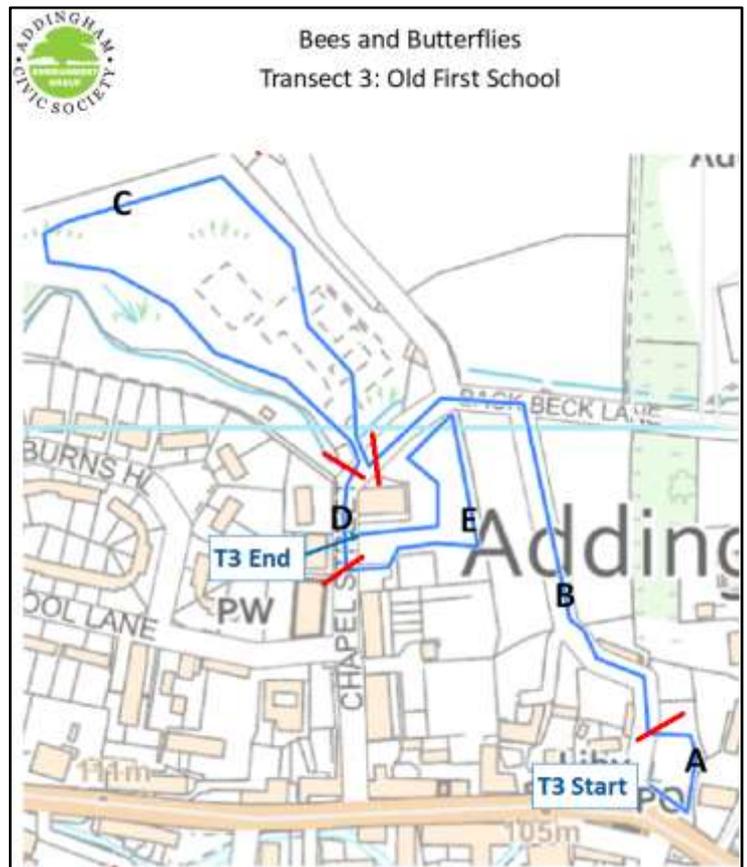


Figure 4: Transect 3

The Methodist Church graveyard (Zone E) is a local green space and part of it was set aside in 2019 and is now actively managed by AEG to promote wildflower populations. Last year no bumblebees were recorded in the graveyard but records for this season showed bees on Spanish bluebells, common vetch and blackberry. A small number of butterflies was also seen.

Along the transect as a whole bees were most often seen collecting pollen from blackberry flowers.

No transect walks occurred along this transect after September 15th.

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Transect: 3		Zones .....				
Bees	Total	A	B	C	D	E
Total	82	14	8	38	1	21
White/Buff-tailed	35	13	5	12		5
Buff-tailed	22	1	3	11	1	6
Common carder	14			7		7
Tree	4			4		
White-tailed	4			3		1
Unknown	2					2
Red-tailed	1			1		

Transect: 3		Zones .....				
Butterflies	Total	A	B	C	D	E
Total	87	5	6	67		9
Large White	17	1	2	8		6
Ringlet	17			16		1
Small White	17	2	3	12		
Meadow Brown	10			9		1
Small Tortoiseshell	8	2		4		
Orange-tip	7			7		
Peacock	7			6		1
Small Copper	3			3		
Red Admiral	1		1			
Small Skipper	1			1		
Speckled Wood	1			1		

Table 3. Numbers of individuals in Transect 3 by zone (a) bees; (b) butterflies

### Transect 4: The Garth and Primary School

#### Observer – Claire Godden

Transect 4 begins at the entrance to the Garth on Main St, crosses the Garth onto Bolton Road, follows the school perimeter footpath, enters the School grounds and goes round the playing field, returns to Back Beck Lane back to the Garth. The transect is the same as for 2019 except for Zone F that was added in 2020 to include potential bee and butterfly observations inside the School grounds. However, due to the Covid-19 problem access to the School grounds was not permitted.

Overall numbers of both bees and butterflies were low in all zones. The only observation of note was the occurrence of Common Carder Bees in Zone E

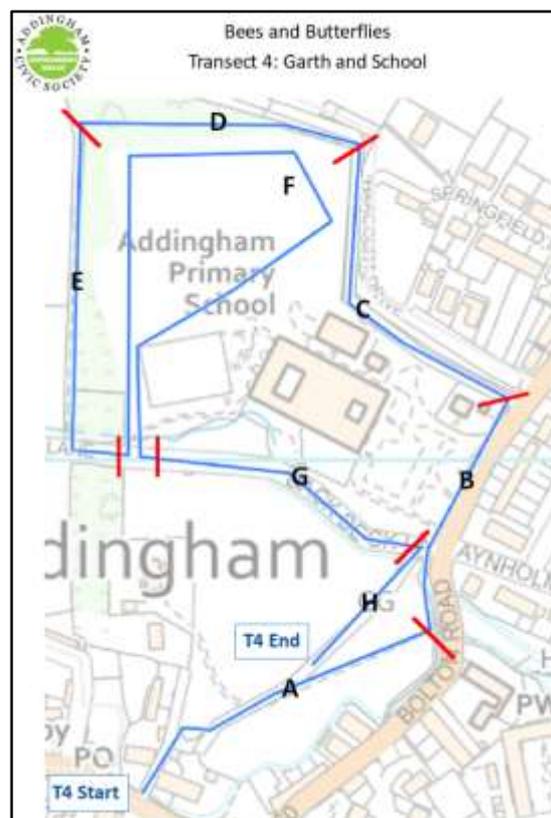


Figure 5: Transect 4

Transect: 4		Zones .....							
Bees	Total	A	B	C	D	E	F	G	H
Total	22	2	2	4	2	8			4
Common carder	12	1	1		2	8			
White-tailed	6		1	2					3
Red-tailed	2	1							1
Buff-tailed	1			1					
White/Buff-tailed	1			1					

Transect: 4		Zones .....							
Butterflies	Total	A	B	C	D	E	F	G	H
Total	7	2		1	1	1		1	1
Peacock	2				1	1			
Small Copper	2	2							
Orange-tip	1								1
Small Tortoiseshell	1			1					
Small White	1								1

Table 4. Number of individuals in Transect 4 by zone (a) bees; (b) butterflies

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### Transect 5: Marchup, Crossbank Road and Silsden Road Allotments

**Observer: Mick Dunne**

Transect 5 begins at the Townhead Trading Estate and follows the public footpath alongside Marchup beck (Zones and B), takes in the Daniel Palmer Nature Reserve (Zone C). It crosses the bypass and goes along Crossbank Road (Zone D), down Moor Lane and along Turner Lane (Zone E), through the Silsden Road Recreational Ground (Zone F), into the Upper Stamp Hill allotments (Zone G) and finishes in the Silsden Road allotment (Zone G).

The most common bumblebee observed was the White/Buff Tailed bee seen in all zones but most common in Zone E. There were more sightings of bees in Zone E than any other zone, mainly associated with stands of comfrey. Zone G, the Upper Stamp Hill allotment had the second highest number of bees feeding mainly on comfrey and blackberry.

Butterflies were seen in all zones. The most common were Large and Small Whites, but 12 species were observed in total. In contrast to the bees, butterflies were more evenly distributed between zones.

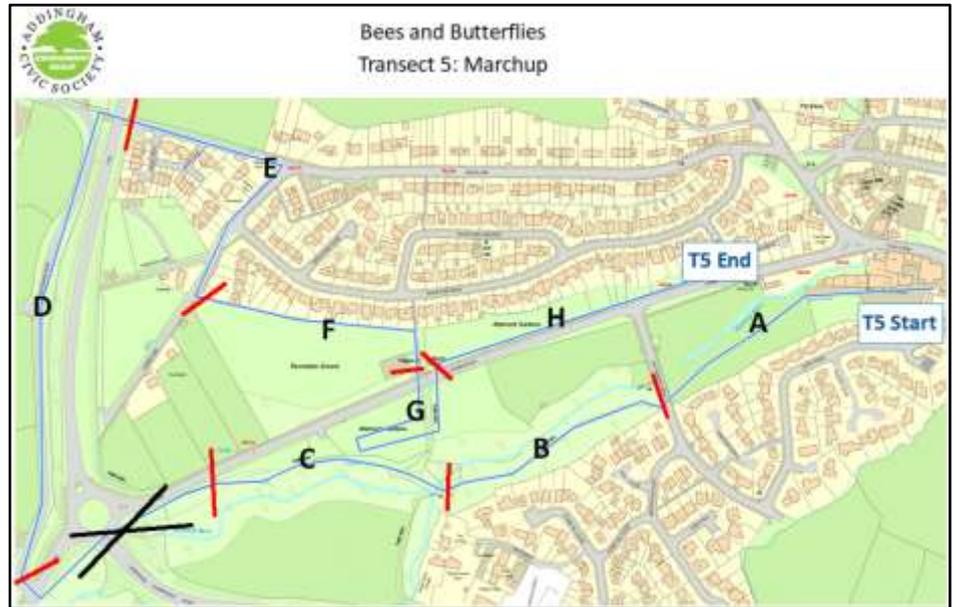


Figure 6: Transect 5

The highest diversity occurred in Zone D, Crossbank Road, with nine species, including Ringlet, Peacock, Orange-tip and Speckled Wood. The Nature Reserve (Zone C) and Marchup (Zone B) had the second highest diversity with seven different species. The most abundant populations occurred on the two allotment sites (Zones G and H). Although many were seen in flight rather than feeding, there was a strong correlation between the abundance of Whites and allotment crops of cabbages, bean, potatoes and sweet peas, in Zone H. Only four different species were seen in Zone H. Five species were seen in the Zone G allotment site, associated with blackberry and comfrey.

Transect: 5		Zones .....								
Bees	Total	A	B	C	D	E	F	G	H	
Total	319	29	21	36	27	128	7	67	4	
White/Buff-tailed	154	14	9	11	8	65	1	44	2	
Common carder	47	2	1	8	11	16	3	5	1	
White-tailed	39	5	3	3	5	16	3	4		
Red-tailed	27			2	1	16		7	1	
Tree	22			4		15		3		
Unknown	20	2	7	7				4		
Buff-tailed	10	6	1	1	2					

Transect: 5		Zones .....								
Butterflies	Total	A	B	C	D	E	F	G	H	
Total	314	16	38	36	41	23	23	74	63	
Large White	107	5	13	10	4	5	6	39	25	
Small White	106	9	10	8	7	5	11	27	29	
Small Tortoiseshell	20		2			10	4	1	3	
Unidentified	18		7		1		1	4	5	
Speckled Wood	17			9	6			2		
Orange-tip	14	2	3	3	5			1		
Peacock	10				6	3			1	
Ringlet	8				8					
Brimstone	5		2	2				1		
Green-veined White	3			3						
Meadow Brown	3		1	1	1					
Red Admiral	2				2					
Comma	1				1					

Table 5. Numbers of individuals in Transect 5 by zone (a) bees; (b) butterflies

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### Transect 6: Old Station Way, Newtown Allotments and Memorial Recreational Field

**Observer: Jessica Penrose**

Transect 6 begins at the bottom of Old Station Way (Zone A), crosses the AEG wildflower meadow (Zone B), goes along Mt Pleasant (Zone C) to the Memorial Recreation Ground. It follows the AEG wildflower bank along the western side of the football field (Zone D) continues up Stockinger Lane (Zone E) into the Newtown Allotment (Zone F), returns to the football field and follows round the boundary of the field to the MUGA (Zone G), and around the AEG wildflower triangle finishing at the carpark.

The most abundant bee was the White/Buff Tailed bee mainly seen in Zone F, the allotment site, and Zone D, the football field bank. The Bees in the allotment were commonly associated with cultivated plants whereas bees in the football field were associated with wildflowers especially vetch and blackberry. Most bee species occurred in Zone F where six species were seen, including the Red-Tailed and Common Carder bees. Five different species were seen on the Old Station Way meadow. Few bees were seen in Zones G and H in the Recreational Field.

Zone F, the Newtown allotment site, was also the zone where most butterflies and most butterfly species were seen.

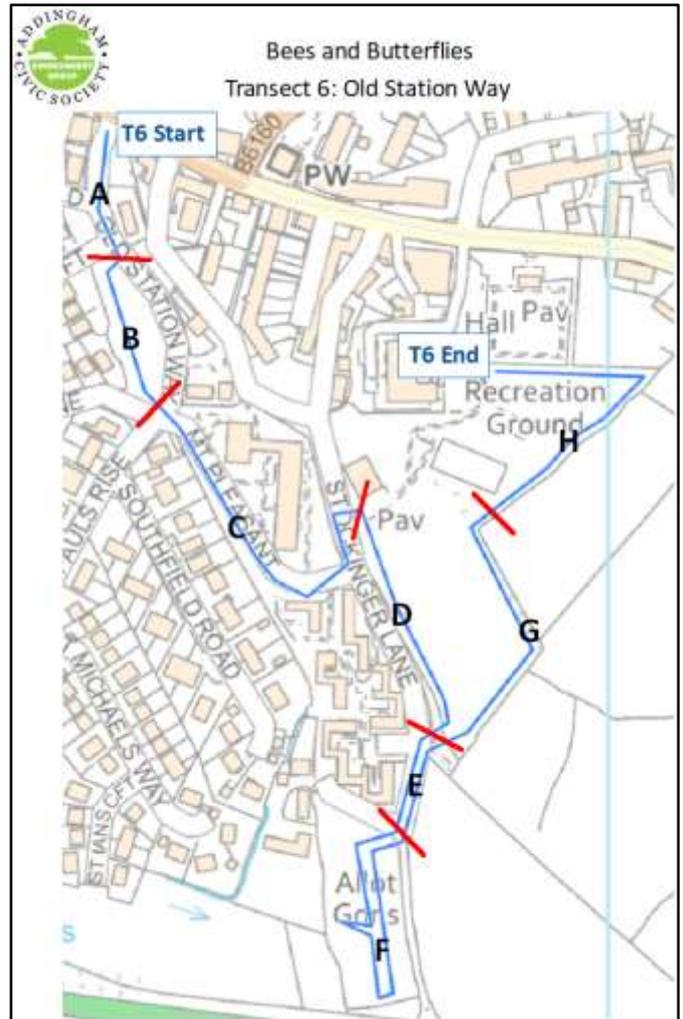


Figure 7. Transect 6

Small and Large Whites were the most abundant but Small Tortoiseshell, Peacock, Brimstone and Meadow Brown were also seen. The football field bank (Zone D) was the next most abundant with several Ringlet species being observed. Zone H, around the margins of the wildflower triangle, had a relatively diverse population with six different species being recorded, mainly in flight.

Transect: 6		Zones .....							
Bees	Total	A	B	C	D	E	F	G	H
Total	152	17	19	22	30	5	49	3	7
White/Buff-tailed	53	4	5	7	13	2	22		
White-tailed	37	3	10	8	4		8		4
Common carder	20	8	1	4	2		3		2
Tree	19	1	1	3	10	3	1		
Red-tailed	11	1	1		1		7		1
Buff-tailed	10		1				7	2	
Early	1						1		
Unknown	1								1

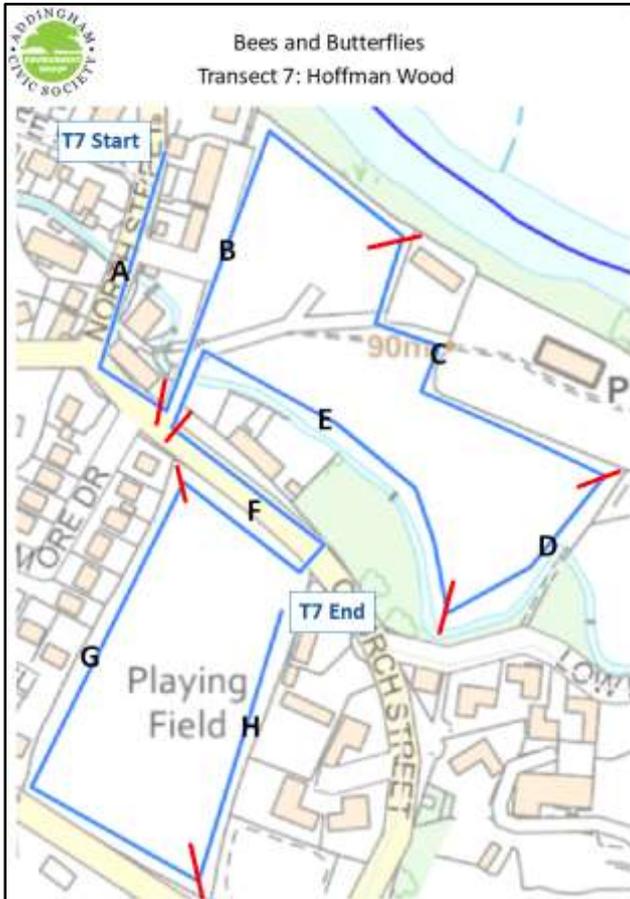
Transect: 6		Zones .....							
Butterflies	Total	A	B	C	D	E	F	G	H
Total	69	2	3	4	12	3	36		9
Small White	17	1			4		11		1
Small Tortoiseshell	14	1	1	3	3		4		2
Large White	13		1			1	10		1
Unidentified	7					1	5		1
Peacock	6						4		2
Ringlet	5			1	4				
Red Admiral	3		1		1	1			
Brimstone	2						1		1
Meadow Brown	1						1		

Table 6. Numbers of individuals in Transect 6 by zone (a) bees (b) butterflies

Transect 7: Church Field and Hoffman Wood Field

Observer: Margaret Longden

Transect 7 begins in North Street, enters Church Field from Church St and circumnavigates the boundary of the field (Zones B, C and D) returning along the edge of Town Beck (Zone E) back to Church St. It crosses the road to Hoffman Wood Field and goes around the boundary of the field (Zone F and G). Zones B and F include AEG wildflower enhancement plots and Zone H passes alongside a hedge, newly planted by AEG in early 2019.



Most bumblebees were seen in Zone D along the eastern boundary of Church Field where blackberry was the most favoured plant for foraging especially by White/ Buff Tailed bees. The greatest variety of bees occurred in Zone A where they were associated with the flowers in the pocket garden managed by Garden Friends.

Although very few bees were seen in Zone B, Zone B had the highest number and greatest diversity of butterflies. Six species were identified, mainly in flight. Small Whites were most abundant although Peacock, Orange-tip and Small Copper were also recorded.

Two things stand out from Transect 7 walks: the importance of gardens for pollinators in contrast to public green space which superficially appear good for wildlife (Hoffman Wood Field is especially poor); and how important brambles are for bumble bees and butterflies.

Figure 8. Transect 7

Transect: 7		Zones .....							
Bees	Total	A	B	C	D	E	F	G	H
Total	115	26	3	5	56	12		1	12
White/Buff-tailed	67	14	2	5	27	11		1	7
Unknown	24				24				
Tree	21	9	1		5	1			5
Red-tailed	2	2							
White-tailed	1	1							

Transect: 7		Zones .....							
Butterflies	Total	A	B	C	D	E	F	G	H
Total	68	17	27	5	4	6	1	7	1
Small White	38	12	14	3	3	1		4	1
Small Tortoiseshell	8	3	1			2		2	
Unidentified	6		2			3	1		
Peacock	5		4						1
Large White	4	2	2						
Orange-tip	4		3		1				
Small Copper	2		1	1					
Red Admiral	1			1					

Table 7. Numbers of individuals in Transect 7 by zone (a) bees; (b) butterflies

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### Transect 8: Low Mill Lane, Low Mill and Old Ilkley Road

**Observer: Mark Penny**

Transect 8 starts in Church St and follows Low Mill Lane (Zones A and B) down to Low Mill Village (Zone C). Following a detour into the field between Old Lane and the R. Wharfe (Zone D) it meets the Old Ilkley Road and turns back towards Addingham (Zone E) and continues along Old Ilkley Road (Zones F and G) back to Church St.

Bees were seen in reasonable numbers in most Zones with Zones D and E having the greatest number. The most common were White-Tailed and White/Buf-Tailed. Common Carders were frequently recorded in the Zones in and around Low Mill occurring on a range of different wildflowers but especially on herb robert.

Butterflies were most abundant and most diverse in Zone E. Eight species were seen in Zone E. Large Whites and Orange-tips were the most common but Ringlet, Speckled Wood, Comma and Green-veined White were also present.

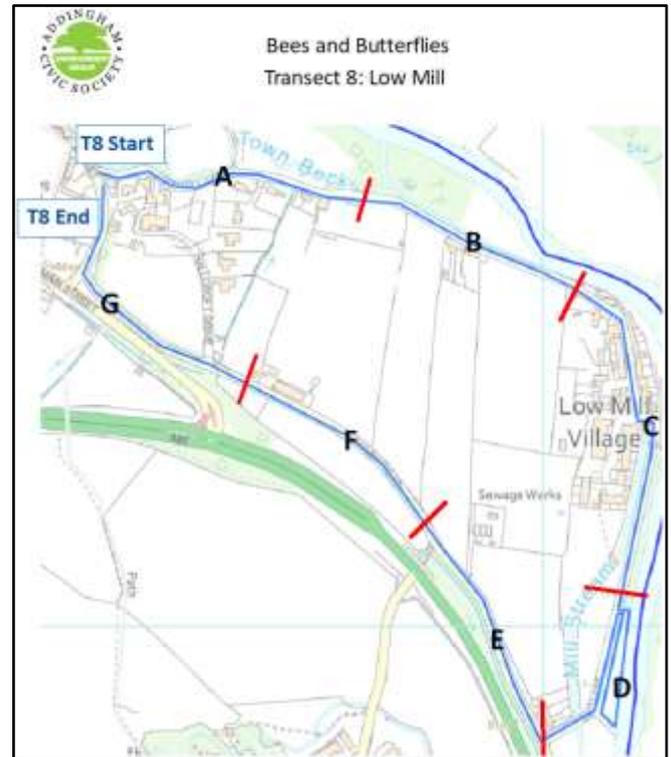


Figure 9. Transect 8

Transect: 8		Zones .....						
Bees	Total	A	B	C	D	E	F	G
Total	99	10	14	13	24	25	11	2
White-tailed	40	1	6	4	11	14	3	1
White/Buf-tailed	22	5	1	3	8	2	3	
Buff-tailed	15	2	5	3	1		3	1
Common carder	13			3	3	5	2	
Tree	7	2	1			4		
Unknown	2		1		1			

Transect: 8		Zones .....						
Butterflies	Total	A	B	C	D	E	F	G
Total	45	5	1	2	25	11	1	
Large White	12	1	1		7	3		
Orange-tip	10		3		1	5	1	
Small White	6					2	4	
Small Tortoiseshell	5					4	1	
Ringlet	4					2	2	
Speckled Wood	4					3		1
Comma	1					1		
Green-veined White	1					1		
Peacock	1		1					
Red Admiral	1				1			

Table 8. Numbers of individuals in Transect 8 by zone (a) bees; (b) butterflies

### Transect 9: Golf Course and Skipton Road Bank

**Observer: Maire O'Donnell**

Transect 9 was designed in 2020 to take in the Bracken Ghyll Golf Course and the Skipton Road wildflower bank, a site being actively managed to enhance wildflower populations by AEG.

The transect begins by the tee on hole 17 of the Golf Course. The first part of the zone is surrounded by woodland, the beck running alongside on the right with Vicar Wood and the steep-sided old quarry on the left. It has a combination of golf green, thick foliage, wild and planted flowers, and has a damp, shaded microclimate. The path continues uphill towards the 18th hole, the temperature, light and wind speed all increase. The ground is much more manicured with views across the course and wilder areas round the sides with gorse and brambles being prominent plus shrubs and trees. This was the zone with the most bees over the season, mainly White/Buf-Tailed and Buff-

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Tailed. A cotoneaster bush was especially busy on one occasion. Eight species of butterfly were seen, mainly Whites but also Small Tortoiseshell, Orange-tip, Ringlet, Peacock and Speckled Wood.

Zone B starts on the bank towards the top of Skipton Road. It is at a higher altitude than Zone A and has wild flowers and grasses aplenty, many planted and cared for by the AEG. There are also few trees and gorse bushes alongside the stone wall bordering on the golf course. Bees were especially attracted to Ragwort, although butterflies were

more abundant than bees overall. Nine species were identified including good numbers of Orange-tip, Ringlet and Meadow Brown but also occasional Small Tortoiseshell and Small Heath.

Zone C commences at Skipton Road layby taking the signed footpath back across the golf course in a north-easterly direction and with views over to Beamsley Beacon. Most of this part crosses manicured fairways with trees and shrubs and wild flowers at intervals. This is the zone with fewest pollinators. No butterflies were seen and only a very small number of bees.

Zone D is continuous with C as the path turns right, through trees and past undergrowth with brambles, nettles and some areas of rotting timber. The footpath makes its way between fairways and Highfield House, over two stiles, has views across Wharfedale, more trees, past a large pool and finally through another stile. This is the zone with the largest number of butterflies including especially abundant Small Tortoiseshell and Meadow Browns associated with grasses, thistles and brambles.

Zone E begins going downhill and moves through farm fields with hedges passing near and to the left

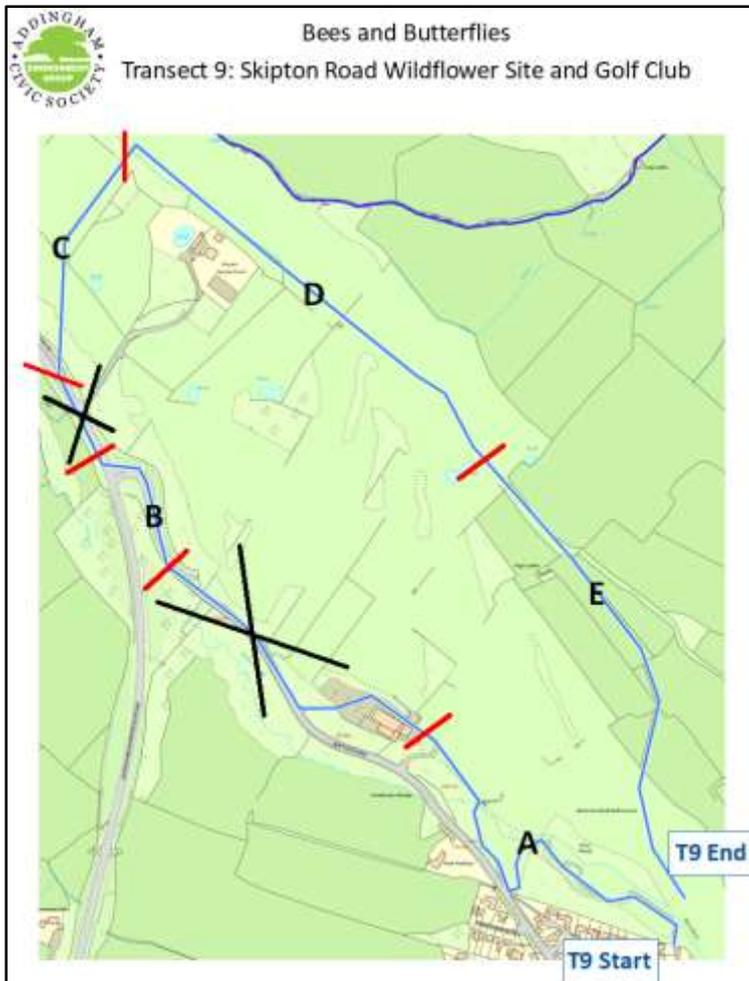


Figure 10. Transect 9

(north) side of High Laithe ruins. It then takes a right turn towards and across the 16th fairway ending at the bridge where transect 9 begins. The flora in this section consists of various tree species, grasses, nettles, bluebells, field buttercups and brambles. There are wild garlic nearby in the unused old farm track. Few bees were seen in this zone. Butterfly numbers were also low but seven different species were recorded.

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Transect: 9		Zones .....				
Bees	Total	A	B	C	D	E
Total	101	41	26	4	25	5
Unknown	48	11	16	2	16	3
White/Buf-tailed	28	14	4	1	9	
Buff-tailed	20	14	3	1		2
Red-tailed	2		2			
White-tailed	2	2				
Common carder	1		1			

Transect: 9		Zones .....				
Butterflies	Total	A	B	C	D	E
Total	201	38	54		83	26
Small White	41	11	13		10	7
Unidentified	40	6	7		21	6
Small Tortoiseshell	35	3	2		27	3
Meadow Brown	22		9		12	1
Orange-tip	17	1	9		7	
Ringlet	8	1	7			
Large White	12	7	2		1	2
Peacock	6	3			1	2
Speckled Wood	4	4				
Painted Lady	3	1	1		1	
Red Admiral	3					3
Small Heath	1		1			

Table 9. Numbers of individuals in Transect 9 by zone (a) bees; (b) butterflies

### Transect 10: Southfield, The Street, Steg Holes and Lumb Ghyll

**Observer: Sara Arrowsmith**

Transect 10 runs from the top of Southfield Terrace, through the small woodland, up the field and over the Bypass, turning left along The Street to Street Farm, turning right down the Cat Steps to Small Banks and across Cocking Lane towards Steg Holes, turning left and round to cross Cocking Lane again lower down, through Lumb Gill Wood and back across fields to cross the Bypass again, 3.5miles in total and divided into 12 zones for recording purposes.

The transect covers a mixture of woodland and agricultural fields. The observations were recorded in the middle of the day on most occasions.

The first part of the transect (Zones A and B) through the small woodland and field had limited numbers of bees and butterflies throughout the whole observation period. The field provides little sustenance and what were seen were near the eastern side of the field along the hedgerow.

The Street (Zone C and D) had a relatively small number of bees but provided the highest number and diversity of butterflies along the transect.

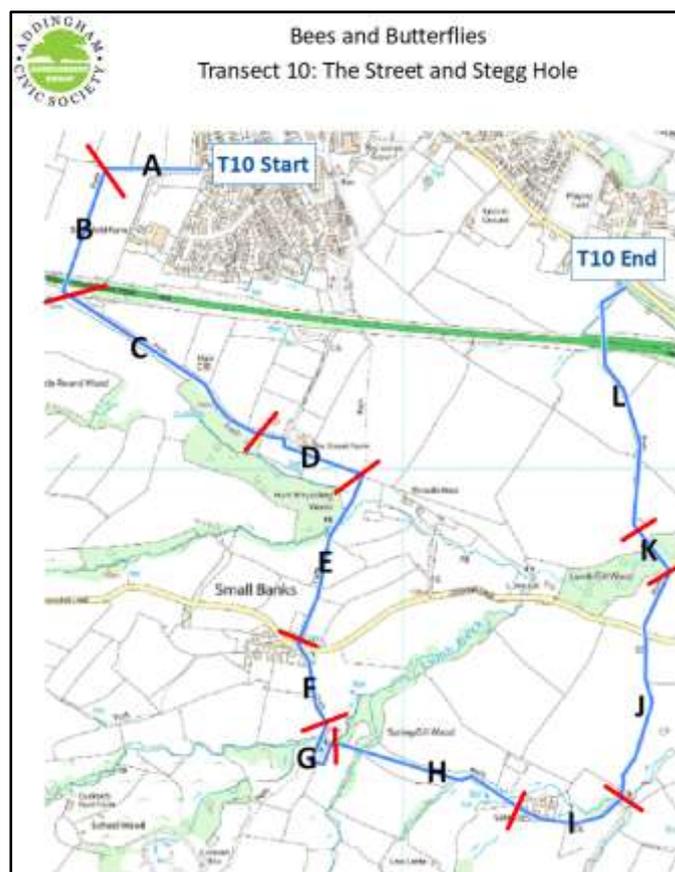


Figure 11. Transect 10

Speckled Wood and Small Tortoiseshell were the most abundant especially close to Street Farm. At Street Farm itself the landowner had used herbicides to kill the brambles and nettles growing near the perimeter wall of the farm, and there was a noticeable absence of butterflies.

Zone E, Catsteps, had very few butterflies but more were observed in Zone F. Seven species were recorded including a Small Copper.

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The transect takes a detour (Zone G) designed to monitor pollinator populations in Steg Holes, a Local Wildlife Site. Although a number of butterflies were seen at different times, numbers and varieties were not as many as expected. No bees were recorded.

Zones H, I, J, K and L had relatively low numbers of bees and butterflies but on June 24<sup>th</sup> on a warm, sunny, early evening walk ten butterflies were recorded at the edge of Lumb Gill Wood (Zone K). They included four Ringlet and two Red Admiral. On the same walk two adult roe deer were seen in Zone K and a stoat in Zone J.

The fields along the transect have few flowers. Foxgloves were the most popular wildflower but once they had flowered bees were limited in number. Other important food plants were blackberry and gorse, especially along the Street (Zones C and D).

Transect: 10		Zones .....												
Bees	Total	A	B	C	D	E	F	G	H	I	J	K	L	
Total	82	10	4	16	6	13	18		1	6	5	2	1	
Buff-tailed	42	5	2	8	2	8	9		1		5	1	1	
Unknown	25	3	1	6	3	5	3			4				
Red-tailed	8		1	1	1		3			1		1		
White/Buff-tailed	7	2		1			3			1				

Transect: 10		Zones .....												
Butterflies	Total	A	B	C	D	E	F	G	H	I	J	K	L	
Total	147	5	5	48	19	4	14	11	10	8	7	11	5	
Speckled Wood	34	4		25	2	1		1	1					
Small Tortoiseshell	23	1	3	7	2	1	5	3		1				
Small White	21			5	5	1	1	1	3	3	1		1	
Unidentified	19		2	5	2			2			1	5	2	
Large White	16			1	2	1	1		4	4	3			
Ringlet	12			1	5		2					4		
Orange-tip	8							3	2		1		2	
Red Admiral	8			3	1		1				1	2		
Meadow Brown	4			1			3							
Peacock	1							1						
Small Copper	1						1							

Table 10. Number of individuals in Transect 10 by zone (a) bees; (b) butterflies

## 7. Comments and Conclusions

Our bees and butterflies monitoring programme began in 2019. It began part way through the season, in early July, and there were only seven transects. This year we were able to begin recording at the start of the season in April and the number of transects has increased to ten. The scope of the programme in 2020 has therefore expanded both in time to cover the full seasons for both bees and butterflies, and space by including two additional transects (9 and 10) beyond the boundary of the built-up area of the village. The years also differ in that not all transects in 2019 included counts of both bees and butterflies. This year, 2020, therefore can be regarded as the first full year of recording.

### Abundance and diversity

The total number of bees and butterflies recorded over the 2020 season is 1400 bees and 1092 butterflies (Table 11). Of these 138 bees and 90 butterflies were recorded as unidentified. For bees it was often difficult to separate White from Buff-tailed Bees. Where there was doubt these were recorded as a combination of the two as “White/Buff-tailed” bees. White and Buff-tailed bees, whether separately identified or not, made up over 50% of those recorded.

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Bees (8 species)	No.	Butterflies (18 species)	No.
White/Buff-tailed	554	Small White	304
Tree	207	Large White	195
White-tailed	133	Small Tortoiseshell	137
Buff-tailed	130	Orange-tip	89
Red-tailed	121	Speckled Wood	61
Common carder	111	Meadow Brown	57
Garden	5	Ringlet	54
Early	1	Peacock	42
		Red Admiral	22
		Brimstone	8
		Small Copper	8
		Green-veined White	4
		Comma	3
		Painted Lady	3
		Small Skipper	2
		Large Skipper	1
		Small Heath	1

*Table 11. Abundance of species recorded*

Tree, Red-tailed and Common Carder bees were the next most abundant species seen. Red-tailed Bees were just less than 10% of the total. Maurice White, our bee adviser, had expected more (see Appendix A below) as they are often seen in the same places as White and Buff-tailed bees. He was also interested to see that Carder bees, as a countryside bee, were occurring in the village and that Tree bees were becoming well-established.



White-tailed bumblebee  
(Maurice White)



Tree bumblebee  
(Maurice White)



Red-tailed bumblebee  
(Maurice White)



Garden bumblebee  
(Maurice White)



Buff-tailed bumblebee  
(Maurice White)

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The most common butterflies were the Large and Small Whites comprising approximately 50% of the total (Table 11). Other common species were the Small Tortoiseshell, Orange-tip, Ringlet, Speckled Wood, Meadow Brown and Peacock. Only three Painted Lady were seen. Altogether 18 species were identified. Butterfly adviser Diane Morris commented that it was a poor year for the Painted Lady but that was the case more widely for the north of England. She noted (see Appendix A that only 13 sightings had been received by the Wharfedale Naturalists Society for the whole of Wharfedale in 2020 in comparison to 2037 recorded in 2019.



Comma - Peter Miller 05-04-20



Green-veined white - Diane Morris



Orange tip Chris Acomb  
16-4-20



Painted lady - Diane Morris



Peacock - Diane Morris



Small copper Peter  
Miller, 14 Aug 2020



Orange tip Chris Acomb 16-4-20



Small Skipper Peter Miller 6-7-20

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### Year on Year comparisons

Although recording bees and butterflies in a systematic way in the village only began part-way through the 2019 season a few comparisons between 2019 and 2020 can be made (Tables 12 and 13). Whereas bees have the same relative abundance in both years butterfly populations are more variable, with, for example, the Small Tortoiseshell and Orange-tip being more common in 2020 rather than 2019. However, both these species occur early in the season and the difference might be accounted for by our late start in 2019. Similarly the increase in number of species in 2020 may be due to the addition of new transects as well as the late start in 2019. On the other hand, some of the differences between years may well be real, due to natural variability rather than project design.

	2020	2019		2020	2019
<b>Bees (8 species)</b>	<b>Ranking</b>	<b>Ranking</b>	<b>Butterflies (18 species)</b>	<b>Ranking</b>	<b>Ranking</b>
White/Buff-tailed	1	2	Small White	1	8
Tree	2	3	Large White	2	1
White-tailed	3	1	Small Tortoiseshell	3	9
Buff-tailed	4	4	Orange-tip	4	-
Red-tailed	5	5	Speckled Wood	5	5
Common carder	6	6	Meadow Brown	6	3
Garden	7	-	Ringlet	7	2
Early	8	-	Peacock	8	4
			Red Admiral	9	6
			Brimstone	10	-
			Small Copper	11	-
			Green-veined White	12	-
			Comma	13	10
			Painted Lady	14	7
			Small Skipper	15	11
			Large Skipper	16	-
			Small Heath	17	-

*Table 12. Comparison of year on year abundance ranking*

The years can also be compared according to the number of individual bees or butterflies recorded per walk and per transect (Table 13). Whereas this can also be biased by 2019 being a shorter season it does allow for direct comparisons to be made for Transects 2 to 8 that were walked in both years. The number of bees seen per walk was higher in every month and on every transect in 2020 than in 2019 but the transects with the highest and lowest numbers were more or less the same in both years. Transects 6, 2 and 5 had the highest and Transect 4 the lowest.

The comparison for butterflies is less interesting as butterflies were only recorded on four transects (3,4,6 & 7) in 2019. Transect 4 had the lowest number per walk in both years and 3 the highest, but the overall numbers per walk in 2019 for all transects were considerably higher. This is the opposite of the record for bees where higher numbers per walk were seen in 2020.

There is likely to be significant inherent year on year variability in bee and butterfly populations but as our time-series grows we might expect more patterns to emerge.

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Observed per walk																				
<b>Bees 2019</b>						<b>Bees 2020</b>														
BY TRANSECTS .....						BY TRANSECTS .....														
Observed per walk	2	3	4	5	6	7	8	Observed per walk	1	2	3	4	5	6	7	8	9	10		
May								April	3.6	7	7.3	1.7	1.7	7.5	3.3	0.8	2.6	2	7.3	
June								May	4.8	10	2.5	3	4	18	5	0.7	0.7	2	2	
July	7.6	15	4	0.8	11	24	4	2.8	June	16.9	71	7	7.7	2.5	41	18	28	8.7	4	8.7
August	4.9	9			6.5	8	5	2	July	13.2	15	38	11		14	30	7.3	6.7	15	9.5
September	1.1		2		0.5	6		0.3	August	5.4		21	5.3		8	8	2	1.7	5.5	1
<b>Totals</b>	<b>5.0</b>	<b>7.6</b>	<b>3.3</b>	<b>0.4</b>	<b>6.9</b>	<b>14</b>	<b>3.6</b>	<b>1.8</b>	September	4.3	10	7.5	3.5		16	6.5	0.5	1	2.5	
									<b>Totals</b>	<b>8.2</b>	<b>20</b>	<b>12</b>	<b>5.1</b>	<b>1.6</b>	<b>18</b>	<b>10</b>	<b>6.8</b>	<b>3.7</b>	<b>5.6</b>	<b>4.8</b>
<b>Butterflies 2019</b>						<b>Butterflies 2020</b>														
BY TRANSECTS .....						BY TRANSECTS .....														
Observed per walk	2	3	4	5	6	7	8	Observed per walk	1	2	3	4	5	6	7	8	9	10		
May								April	3.4	3.5	4.7	3.3	1.3	5	3.5	4.5	1.3	5.7	5	
June								May	7.2	5	8	2.3	0.7	30	6.7	4	2.3	6.5	7	
July	11.2		36	3.8		15		June	5.5	2	7.7	2	0.5	5.3	3.5	2.7	1	9.5	17	
August	18.6					27	20	July	9.4	12	5	15		14	8	3	2.4	23	6.5	
September	4.5			1		9.5	6	August	11.2	20	5.5	9.7		33	3.5	6	2	7.5	14	
October	3.0						3	September	5.6	8	2	3.5		15	2.5	3.5	3.3	16	5	
<b>Totals</b>	<b>10.7</b>		<b>24</b>	<b>2.6</b>		<b>17</b>	<b>8</b>	October	0.2							2				
								<b>Totals</b>	<b>6.4</b>	<b>5.7</b>	<b>5.6</b>	<b>5.6</b>	<b>0.5</b>	<b>15</b>	<b>4.6</b>	<b>3.8</b>	<b>2</b>	<b>11</b>	<b>8.6</b>	

Table 13. Average numbers observed per walk by transect and month.

### Distribution amongst transects

The transects were designed to be approximately equal in length and to pass through areas of the village where pollinator populations were thought to be relatively abundant. Transects 1 and 5 had the highest numbers whereas Transect 4 had the lowest. The high numbers per walk in Transect 1 (Table 13) were unsurprising as this Transect comprised the plots of garden flowers along Main St. Transect 5 had high numbers of both bees (Table 13) and butterflies (Table 13) associated with wildflower-rich sites on the Daniel Palmer Nature Reserve and Moor Lane and with both wildflowers and cultivated plants on the Silsden Road allotments. At the other extreme Transect 4 (Manor Garth and the School perimeter path) had very low numbers of pollinators with only an average of 1.6 bees recorded per walk and 0.5 butterflies per walk (Table 13). Populations were more evenly divided amongst other transects.

### Distribution over the season

Overall numbers of both groups increased and decreased over the season as expected with bees being most abundant in June and July and butterfly numbers peaking in July and August (Fig. 12). Recording of bees stopped at the end of September, whereas the butterfly season continued to the end of October. However, very few butterflies were seen in October.

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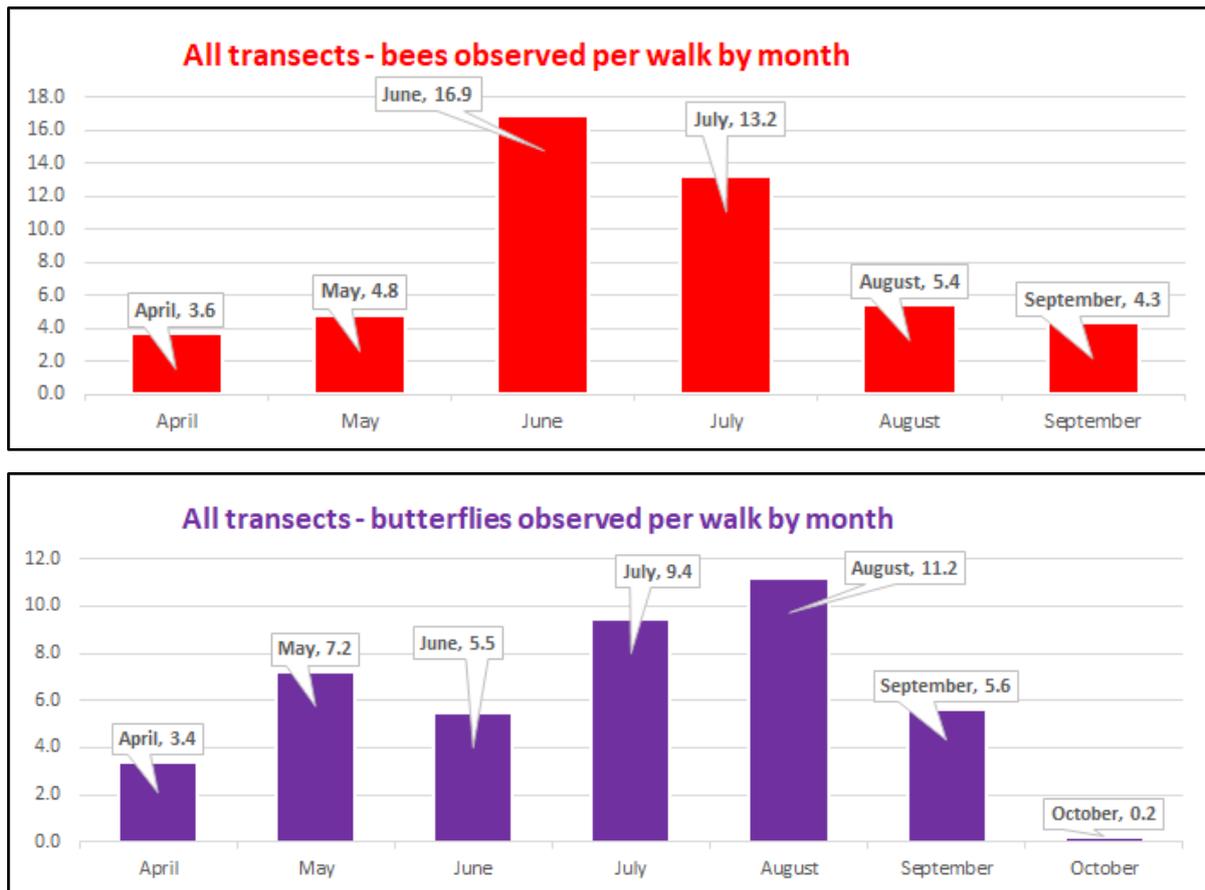


Figure 12. Average numbers observed on all transects per walk by month.

### Distribution amongst zones

Several zones within different transects had relatively high pollinator populations. These stand out for a range of different reasons.

The very high numbers of pollinators in Transect 2 Zone A are a direct result of the wildflower meadow planted on the new Sidebeck housing estate.

Transect 3 Zone C is the Old First School site, a site with a variety of different habitats that has been rewilding over the last twenty years. It has one of the highest diversities of both bee and butterfly populations and the long grass provides an especially good habitat for Ringlets.

In Transect 5, Zone E, at the top of Moor Lane, has the highest numbers of both bee and butterfly populations attracted by wildflowers along the roadside especially comfrey and ragwort. Zones G and H in Transect 5 also have relatively high numbers. Both are allotment sites. Zone G is the Upper Stamp Hill site where comfrey and blackberry are the main hosts. Zone H, the Silsden Road Allotments, on the other hand, had few bees and the numerous butterflies recorded were mainly Whites attracted by the cultivated flowers and vegetables, especially cabbages, runner beans and sweet peas.

The Newtown allotment, Transect 6, Zone F, also had good populations of bees and butterflies. Butterflies were mainly recorded in flight but bees were especially observed on cultivated plants such as borage, lavender, marjoram, sweet william and hebe.

In Transect 7, Zone D, although lacking bees, had a good population of butterflies, mainly observed on brambles.

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The Bracken Ghyll golf course lies in Transect 9. Except for Zone C which is a zone that crosses fairways, all the Zones (A, D, E) had relatively good pollinator, especially butterfly, populations. In Zone D, thistles and nettles appeared to be important host plants.

Finally, Zone C on Transect 10 supported good populations of butterflies, especially Speckled Wood. This Zone is part of The Street, designated as a Local Wildlife Site for its wildflower populations. Foxgloves were observed to be important in supporting both bee and butterfly populations.

Zones with low numbers of bees or pollinators are ones lacking flowers, either wildflowers or garden flowers. They are zones in transects that pass through woodland, for example, zones D and E in Transect 4 that follow the wooded path around the school, or grassland such as Hofmann Wood Field (Transect 7, F,G and H), a village green space that is frequently mown. The frequently mown fairways on the golf course (Transect 9, Zone C) and the agricultural fields e.g. in Transect 10, Zone B that are heavily grazed, also had low numbers.

Woodland might not be expected to provide rich pollen and nectar sources for bees and butterflies but it is nevertheless a very important habitat for other forms of wildlife. Managed grasslands on the other hand, whether village green space or agricultural fields used for livestock grazing have little intrinsic wildlife value and could be managed differently to encourage a greater abundance and diversity of wildflowers attractive to pollinators.

### AEG wildflower sites

The AEG now manages six grassland sites in the village aiming to enhance their wildflower populations and thereby encourage a greater abundance of pollinators. Consequently all six sites have been incorporated as zones in one or more of the pollinator transects (Table 12). Pollinator surveys were not carried out before work to enhance wildflower populations began but it is nevertheless possible to assess the success of the measures taken by monitoring wildflower and pollinator populations together year on year.

Name	Year	Trans	Zone	No. Bees	Spp.	No. But	Spp.
Old Station Way	2015	6	B	19	5	3	3
Football Field Bank	2016	6	D	30	5	12	4
Memorial Rec Triangle	2016	6	H	7	3	9	7
Hoffman Wood North	2018	7	F	0	0	1	1
Church Field West	2018	7	B	3	2	27	6
Methodist Graveyard	2018	3	E	23	4	9	4
Skipton Road Bank	2016	9	B	26	4	54	9
MEAN ALL ZONES				18	0.68	14	1.24

*Table 14. Wildflower sites managed by AEG, start date of management, pollinator transect number and zone, total number of bees observed, number of bee species observed, total number of butterflies observed and number of butterfly species observed.*

It may be a number of years before any significant increases in both wildflowers and pollinators are detected at most of the wildflower sites but the Skipton Road Bank stands out. There has been an overall increase in wildflower populations at this site following the introduction of yellow rattle and the transplanting of ox-eye daisy, knapweed, yarrow and red campion since 2016, adding to the pre-existing populations of vetch, clover and ragwort. Yellow rattle, ragwort and vetch were especially popular species for pollinators. It is probable therefore at this site that our wildflower management programme has already been effective.

### Plans for the future

The records for 2020 build strongly on those from 2019. In 2021 we are planning to repeat the 2020 programme as closely as possible, so that year on year comparisons can be made. However, modifications might need to be made to Transect 4 if access to the Primary School grounds cannot be obtained and the Lower Stamp Hill allotments should be added to Transect 5 as a separate zone. As far as possible other transects should remain the same although changes could be made to zone boundaries to match habitat boundaries, and, in the case of AEG wildflower sites, to match the sites and the zones in which they occur more closely.

A further modification is the need to improve and standardise the identification of host wildflowers (and garden flowers where appropriate) by observers. Our intention is to make a standard check list of common plant species likely to be encountered available and to provide identification training to volunteers. Such training was planned for 2020 but became a casualty of the coronavirus pandemic.

As our understanding grows about bee and butterfly populations in the village we can begin to consider how best to protect and enhance them. This requires continued effort to increase the abundance of wildflowers in our grasslands both in village green spaces and in surrounding agricultural land. It also requires householders to plant more garden flowers and bushes that are attractive to pollinators. In that regard we intend to draw up a list of such plants to help gardeners select appropriate species. In addition we will consider the possibility of designing a garden project to encourage gardeners to monitor their bee and butterfly populations.

## 8. Authors and the team

**Malcolm Secrett\*, Rick Battarbee, Claire Godden, Diane Morris, Jessica Penrose, Julia Tomlinson, Maire O'Donnell, Margaret Longden, Mark Penny, Maurice White, Mick Dunne, Pam Wells, Peter Miller & Sara Arrowsmith**

\*Contact for enquiries [malcolm.secret@outlook.com](mailto:malcolm.secret@outlook.com)

## 9. Appendix A: Comments from advisers

### Bees: from Maurice White

From your splendidly detailed descriptions of the transects and their flora the range of bumblebee species and their proportions seem about what we should expect this far north in an inhabited village neighbourhood. I would have hoped for more red-tailed bumblebees, but that's largely because of (a) my affection for them and (b) they are often seen in the same places as white and buff-tailed bees. Since carder bees are a countryside bee, if we can say that, it's always good to see them, and we should be noting how far into the village they are getting. Spotting nesting-places of tree bees is useful to see how established they are becoming, but my personal observation was of far fewer this year than last, but that's a local phenomenon, I think, and I'm not in Addingham.

I notice several zones where very few bees are recorded. It's worth considering what is growing and when. Bees tend not to bother with grasses, but they will be found amongst some for the small flowers that grow with grass, such as vetches and clover, so it's always worth a look. As is the hunt for bee nests, which can also be found tucked away in grassy banks or the base of walls. Even if there are no flowers, there may still be bee activity, especially noticeable in hot days in June and July as they come and go. No need to disturb a nest if you think you know where it is.

My congratulations to everyone for their excellent results. There is much to build on here.

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### Butterflies: from Diane Morris

This excellent report gives lots of information that warrants further analysis and scrutiny so until I delve into it a bit more I'll just mention a few things that caught my attention.

Recorders have been diligent in their work and this is very much appreciated. Some sites have few butterflies recorded whilst others have plenty. This is no reflection on the recorder's eye, it is simply down to the varying habitats at each site and the availability of suitable nectar sources for each species of butterfly. Each species has its individual requirements for breeding and food sources.

The data will help us to identify what we can do to encourage more butterflies to the sites that have low numbers, and to maintain the management of sites that have higher numbers to ensure they return each year.

The transect data highlights the success of the Small and Large White butterflies but it is good to see that so many of the more colourful species had good numbers too. It was a bad year for the Painted Lady up here in the north of England. Only 3 were seen in the transects and the total sightings I received for the whole of Wharfedale was 13. So we did very well! Last year the total number for Wharfedale was a staggering 2,037!

Comparing the transect data, (and the records for Addingham as a whole this year), with that of 2019, there are a few butterflies which were only seen once or not at all. These are Common Blue, Gatekeeper, Small Heath, Wall and White-letter Hairstreak. It would be nice to target these species next year and I'll make a special point of raising it at our next training session. I also plan to hold a few field visits next year, weather permitting, and provided Covid restrictions allow.

There is so much more to glean out of the report. A job for the long winter nights...

Once again, many thanks to everyone involved in the project.

## 10. Appendix B: Primary data

All primary data are contained in a comprehensive interactive spreadsheet, available to [download here](#) or to be requested by clicking on [Request for the bumblebee and butterfly 2020 season end analysis spreadsheet](#). Guidance on using the spreadsheet is contained within it.

The spreadsheet includes:

- Overall analysis of numbers and species with averages per transect walk.
- Analysis of numbers observed, the number of walks by month and the average numbers observed by walk and month.
- Numbers observed by species in each zone of each transect.
- The plants pollinators were visiting at the time of the observation. (These data are free form text hence several different spellings occur for the same plant. A lookup table will be considered for next season to provide consistency).
- Transect dashboard in which numbers and species observed are shown.
- Zone dashboard with numbers of species by transect zones.
- Both of the dashboards have links to the transect maps, along with other resource folders.

End