OUSEBURN FARM

BUTTERFLY & DRAGONFLY

SURVEY, 2020

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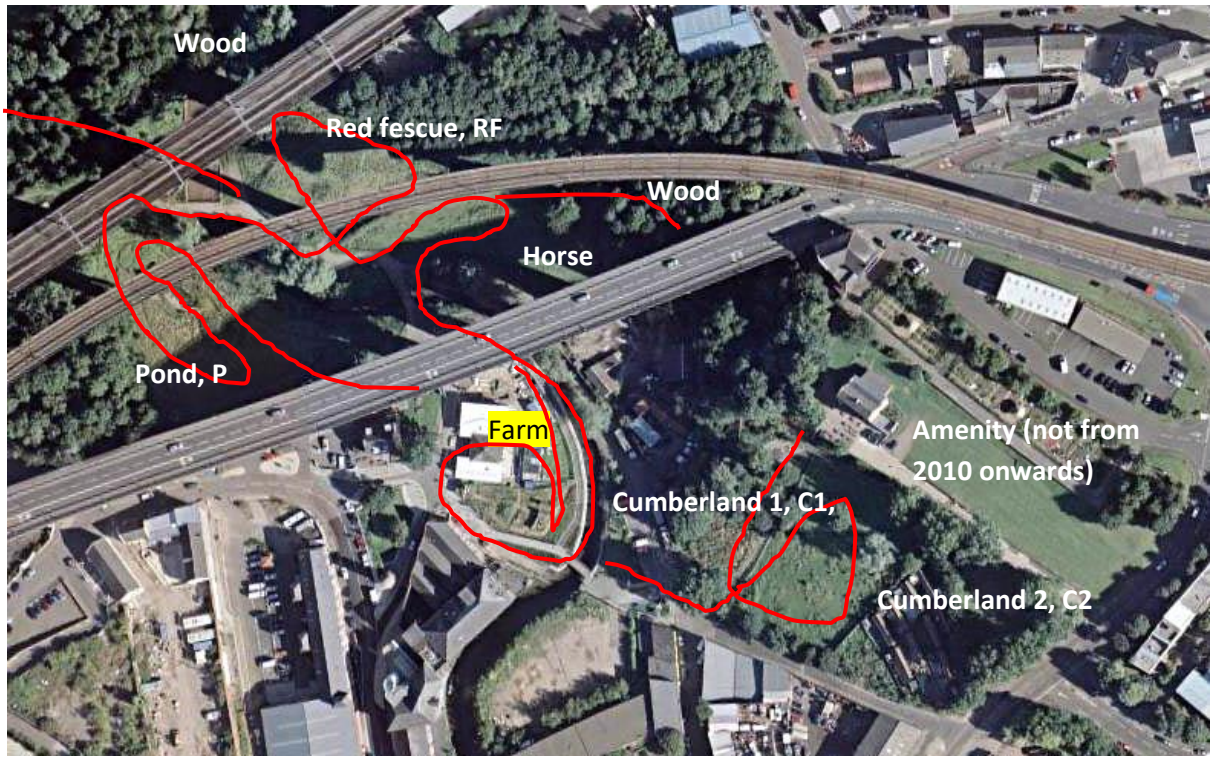
2020

Ouseburn Farm Butterfly, dragonfly and damselfly summary report 2020.

Butterflies, dragonflies and damselflies in and around the Ouseburn Farm were surveyed regularly in 2020, from late spring through to early autumn.

Similar surveys have been carried out in 2006 to 2019 (Jeffries, 2006 - 2019), making the 2020 survey the 15th survey since the farm re-opened. In 2020 twenty four walks were carried out, the first on the 8th March, the last on the 13th September. The surveys covered the pond meadow, red fescue meadow, farm grounds, horse meadow, woodland path from the horse meadow through to the Cumberland Arms, the old orchard, and the meadow below the Cumberland Arms. Surveys were carried out where possible on warm, sunny days. In the Farm grounds cabbages and nasturtiums were also checked for eggs and caterpillars of small land large whites

Figure 1. The Farm environs, meadows and butterfly recording walk. The red line shows the approximate route used in 2020. The names used for each field are shown.



Butterflies were recorded by walking slowly and noting species seen to either side in front, although this was not so rigorously enforced as the formal national butterfly recording transect scheme walks and quite often butterflies would be followed to check identity. Nonetheless the technique has been consistent on the farm since 2006. Within the Farm cabbage plants were searched for eggs and caterpillars of white butterflies too. Numbers of Burnet moths and dragonflies and damselflies were also counted. In addition the vegetation around the pond was searched for dragonfly exuviae. Exuviae are the cast skins left behind when the adult emerges from the final larval stage. By counting up the cumulative numbers of new exuviae you get a minimum estimate of the numbers of adults that have hatched form a site.

Note that visits were made regularly despite the covid lockdown. The absence of livestock, taken out due to the lockdown, allowed all meadows to be checked throughout. In the absence of grazing it was evident that the grass and herbs in all the meadows that are usually grazed (horse, red fescue and Cumberland 2) was more verdant and flower rich. Conversely the pond (=orchard) meadow is now much more overgrown by the fruit trees.

Results.

Butterfly species richness.

Fourteen species of butterfly were recorded in 2020, compared to fourteen in 2019 and 2018, sixteen in 2017, fifteen in 2016 and fourteen in 2015.

The numbers of individuals of each species fluctuate markedly between the years. Table 1 shows the highest counts made on any visit from 2013 to 2020. The overall feel for the butterfly fauna is one of continuing slight decline in numbers

Table 1. The highest counts of selected butterflies made on any single site visits between 2013 and 2020. In all years the counts were made on a weekly basis from spring to early autumn, on sunny days so should be broadly comparable.

	2013	2014	2015	2016	2017	2018	2019	2020
Small skipper	1	15	1	1	1	3	1	2
Orange tip	5	10	8	12	12	9	6	8
Ringlet	2	20	17	5	5	14	13	2
Meadow brown	14	18	18	5	5	3	5	8
Speckled wood	8	14	10	8	8	12	12	4
Comma	3	5	4	2	3	5	4	1

A welcome find in 2020 was the return of common blues. A male, perhaps two individuals, was found over the course of three visits between the 5th of July and the 19th of July, in the meadow below the Cumberland, generally flying near the patches of the caterpillar food plant, birds foot trefoil, in the middle of the lower part of the meadow. A female was found in the red fescue meadow on the 8h of August. The common blue has only been an occasional visitor in recent years but the 2020 sightings may be a result of the reduced grazing. It is not clear if the individuals were new arrivals or had hatched on site, although they were all very fresh specimens.

Not seen this year were holly blue, a specie prone to marked good and bad years, or the migratory species the painted lady, which was scarce throughout the UK in 2020

Dragonflies and damselflies.

Damselflies and dragonflies were also recorded, and again show evidence of decline, with the exception of a new species, a male of the large red damselfly, found resting in the horse meadow on the 14th May. This species is one of the first to emerge and is quite widespread in the UK and locally, although this is the first record for the farm. It is likely to have been a long-distance dispersing male.

Very few other dragonflies or damselflies were seen, continuing the pattern seen since 2017. However one nice surprise was the sudden appearance of at least sixteen exuviae (cast skins left as adults emerge) of the southern hawker , in the main pond in late July and early August. None were found in 2020. It can take these large hawker dragonflies two years to mature as larvae this far north so this might be a cohort of young laid as eggs in 2018.

Table 2 shows the maximum counts of dragonflies and damselflies, on any single survey date, from 2007 to 2020.

Table 2. Maximum counts of adult damselflies and dragonflies between 2007 and 2020. For the southern hawker counts were also made of exuviae (cast skins left behind once adults emerge) and are shown in brackets.

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Large red damselfly														1
Blue tailed damselfly				1	2	33	7	14	5					
Azure damselfly					5	28	7	87	54	29	2	20		
Common emerald damselfly								1	2					
Southern hawker dragonfly (exuviae)			1			(2)	1	1	2 (18)	1	1	1 (2)		(16)
Migrant hawker dragonfly								1			1		1	
Board bodied chaser dragonfly				2	2	3	2	4	5	4	5	3	2	1
Red darter dragonfly		7	2	1	1	2	3	34	8	3	4	1	1	

Counts of butterflies and dragonflies are given in two tables. Table 3 is simply the total of each species seen on each survey date. Table 4 presents data broken down for each section of the farm allowing comparisons between meadows.

References.

Jeffries, M.J. (2006) – (2019). Ouseburn Farm butterfly & dragonfly surveys. Department of Geography, Northumbria University, Newcastle upon Tyne. Copies of all the annual reports by Mike Jeffries can be obtained from michael.jeffries@northumbria.ac.uk.

Table 3. Total numbers of butterflies, burnet moths, dragonflies and damselflies counted during 2020. Counts were made on sunny days except where indicated by "cloudy" or "windy". Counts of eggs, caterpillars ("cats") and pupae ("pup") are approximate. "Exuviae" refers to the cast skins left behind when a dragonfly emerges; only new examples were recorded on each date and give a minimum estimate of the numbers hatching on site. "Unid white" refers to adults flying at a distance when precise identification could not be made.

	8th Mar	24th Mar	8th Apr	15th Apr	21st Apr	27th Apr	6th May	14th May	20th May	24th May	28th May	2nd June	14th June
Small skipper													
Large skipper (& unidentified skippers)											1	1	
Green veined white						1	1	2		1	1		
Small white			1		2	1		1		1			
Large white						2	2	1					
Orange tip				5	4	3	8	5	2	3			
Unid. white				3	5	8	14	8	1	2			
Small copper (none in 2020)													
Holly blue (none in 2020)													
Common blue													
Tortoiseshell				1	1						100 cats	100 cats	30 cats
Comma						1		1					
Peacock			4	1	1		1						
Painted Lady (none in 2020)													
Red Admiral													

	8th Mar	24th Mar	8th Apr	15th Apr	21st Apr	27th Apr	6th May	14th May	20th May	24th May	28th May	2nd June	14th June
Small heath (none in 2020)													
Wall (none in 2020)													
Meadow brown													
Ringlet													
Speckled wood				3	3	4	2		1	1			
6 spot burnet moth (none in 2020)													
Red darter dragonfly (none in 2020)													
Migrant hawker dragonfly (none in 2020)													
Southern hawker dragonfly													
Broad bodied Chaser dragonfly										1			
Large red damselfly								1					
Blue tailed damselfly (none in 2020													
Azure damselfly (none in 2020)													
Common Emerald damselfly (none in 2020)													

Table 3 continued

	20th June	25th June	5th July	12th July	19th July	26th July	2nd Aug	8th Aug	30th Aug	5th Sept	13th Sept
Small skipper				2		1					
Large skipper (& unidentified skippers)		1									
Green veined white			2	7	2	3	7	2			
Small white			2		2	1			1	2	
Large white		2					1	1			
Orange tip											
Unid. white		2	4	5	9	7	12	9	2	3	3
Small copper (none in 2020)											
Holly blue (none in 2020)											
Common blue			1	1	1			1			
Tortoiseshell		1	1								
Comma				2		1		1			
Peacock											
Painted Lady (none in 2020)											
Red Admiral	1	2	1								

	20th June	25th June	5th July	12th July	19th July	26th July	2nd Aug	8th Aug	30th Aug	5th Sept	13th Sept
Small heath (none in 2020)											
Wall (none in 2020)											
Meadow brown	2	7	8		2						
Ringlet	1	2	1								
Speckled wood	1	1			2	2	2	4	1	3	2
6 spot burnet moth (none in 2020)											
Red darter dragonfly (none in 2020)											
Migrant hawker dragonfly (none in 2020)											
Southern hawker dragonfly						7 exuv	6 exuv	3 exuv			
Broad bodied Chaser dragonfly											
Large red damselfly											
Blue tailed damselfly (none in 2020)											
Azure damselfly ((one in 2020)											
Common Emerald damselfly (none in 2020)											

Table 4. Numbers of butterflies, dragonflies, damselflies and burnet moths counted within individual sections of the farm, 2020. The sections are coded as P = pond meadow, RF = red fescue meadow, H = horse meadow, W = woodland on northern slopes, F = farm grounds including adjacent river path, C1 = orchard below Cumberland Arms, C2 = meadow below Cumberland Arms. Counts were made on sunny days except where indicated by "cloudy" or "windy". Counts of eggs, caterpillars ("cats") and pupae ("pup") are approximate. "Exuviae" refers to the cast skins left behind when a dragonfly emerges; only new examples were recorded on each date and give a minimum estimate of the numbers hatching on site.

	8th Mar	24th Mar	8th Apr	15th Apr	21st Apr	27th Apr	6th May	14th May	20th May	24th May	28th May	2nd June	14th June
Small skipper													
Large skipper (& unidentified skippers)											P 1	RF 1	
Green veined white						W 1	RF 1	RF 1, P1		P 1	P 1		
Small white			H 1		C2 1, F 1	H 1		H 1		H 1			
Large white						P 1, RF 1	W 1, C1 1	H 1					
Orange tip				W 1, H 2, RF 2	RF 2, C2 1, H 1	P 2, H 1	W 2, RF 2, P 3, F 1	RF 2, H 2, P1	P 1, RF 1	W 2, RF 1			
Unid. white				P 2, RF 1	W 1, RF 2, P 1, H 1	P 2, RF 2, H 3, C1 1, RF 2	P 1, RF 3, F 1, C1 1, H 1, W 1	RF 1	W 2				
Small copper (none in 2020)													
Holly blue (none in 2020)													
Common blue													
Tortoiseshell				P 1	W 1						P 100 cats	P 100 cats	P 30 cats
Comma						P 1		P 1					
Peacock			P 3, W 1	P 1	P 1		F 1						
Painted Lady (none in 2020)													
Red Admiral													

	8th Mar	24th Mar	8th Apr	15th Apr	21st Apr	27th Apr	6th May	14th May	20th May	24th May	28th May	2nd June	14th June
Small heath (none in 2020)													
Wall (none in 2020)													
Meadow brown													
Ringlet													
Speckled wood				W 1, P 1, F 1	P 1, W 2	P 2, C2 1, RF 1	W 1, RF 1		P 1	P 1			
6 spot burnet moth (none in 2020)													
Red darter dragonfly (none in 2020)													
Migrant hawker dragonfly (none in 2020)													
Southern hawker dragonfly													
Broad bodied Chaser dragonfly										RF 1			
Large red damselfly								H 1					
Blue tailed damselfly (none in 2020)													
Azure damselfly (none in 2020)													
Common Emerald damselfly (none in 2020)													

Table 3 continued

	20th June	25th June	5th July	12th July	19th July	26th July	2nd Aug	8th Aug	30th Aug	5th Sept	13th Sept
Small skipper				C2 1, RF 1		P 1					
Large skipper (& unidentified skippers)		P 1									
Green veined white			RF 2	P 5, C2 1, RF 1	P 1, RF 1	P 2, W1	P5, C2 1, H 1	W 1, RF 1			
Small white			F 1, RF 1		P 1, RF 1	F 1			F 1	F 2	
Large white		C2 1, RF 1					F 1	RF 1			
Orange tip											
Unid. white		F 1, H 1	P 2, H 2	P 2, C2 1, W 1, RF 1	P 1, W 1, F 2, C2 2, RF 3	W 1, P 2, C2 2, F 1, RF 1	P 2, F 5, C2 4, R 1	P 1, W 1, C2 2, F 1, H 2, RF 2	RF 1, F 1	P 1, F 1, H 1	P 1, C1 1, C2 1
Small copper (none in 2019)											
Holly blue (none in 2019)											
Common blue			C2 1	C2 1	C2 1			RF 1			
Tortoiseshell											
Comma			P 1, H 1		C2 1		P 1				
Peacock											
Painted Lady (none in 2020)											
Red Admiral	H 1	P 1, F 1	P 1								

	20th June	25th June	5th July	12th July	19th July	26th July	2nd Aug	8th Aug	30th Aug	5th Sept	13th Sept
Small heath (none in 2020)											
Wall (none in 2020)											
Meadow brown	P 2	P 7, RF 3, H 1	P 5, RF 3		P 2						
Ringlet	H 1	P 1, F 1	P 1								
Speckled wood	C2 1	W 1			P 1, C2 1	W 1, P 1	C2 1, R 1	W 1, P 2, C2 1	P 1	P 3	P 2
6 spot burnet moth (none in 2020)											
Red darter dragonfly (none in 2020)											
Migrant hawker dragonfly (none in 2020)											
Southern hawker dragonfly						P 7 exuv	P 6 exuv	P 3 exuv			
Broad bodied Chaser dragonfly											
Large red damselfly											
Blue tailed damselfly (none in 2020)											
Azure damselfly (none in 2020)											
Common Emerald damselfly (none in 2020)											

2020 photos

Very freshly emerged comma

Courtship dance by green veined whites. The male is flying over the perched female

Meadow brown

Large skipper in typical alert stance

Small skipper, also typically perching and alert

Ringlet, with unusually tear drop shaped eye spots

Female common blue in red fescue meadow

Male common blue in Cumberland meadow

A male large red damselfly, found in may in the horse meadow, a new species record for the farm

Cast skin (exuviae) of southern hawker dragonfly that has emerged from in the main pond

Harlequin ladybird. Originally from east Asia they arrived in the UK from Europe or north Amerca in 2004 and are now widespread

Harlequin ladybird larvae, common throughout the meadows on tall herbs such as nettles

Seven spot ladybird larvae, also common around the meadows

A broad centurian soldierfly in the red fescue meadow. Nice to know a centurian can still be found still near to Hadrian's wall

An *Adrena* solitary bee on yarrow. The yarrow was a much favoured nectar and pollen source for these bees

Tortosieshell butterfly caterpillars on nettles in the red fescue meadow

Pond meadow, increadingly overgrown by the orchard trees

Red fescue meadow. Note the distinct sward of white yarrow flowers, showing how the vegetation befitted from the absence of grazing

Horse meadow, also with obvious white flowered yarrow sward

Cumberland 1 meadow

Cumberland 2 meadow, where the male common blue as found for several weeks

Close up of flower rich sward in the red fescue meadow

Main pond in April

Main pond in August, very choked by common reed (at back) and bottle sedge