

**BUTTERFLY SURVEY
of
COCKLAWBURN
BERWICK UPON TWEED
April to September 2010**



Common Blue by Iain Cowe.

**by
Berwick Wildlife Group**

A Report on the 2010 Butterfly Survey

<u>Index</u>	<u>Page</u>
1) <u>Acknowledgements</u>	3
2) <u>Introduction</u>	4
3) <u>Method</u>	6
4) <u>Summary of Observations</u>	7
i. <u>Graphs – By Weeks</u>	8
ii. <u>Graphs – By Section</u>	9
5) <u>Weather</u>	10
6) <u>Comparison between the 2008 - 2010 Observations.</u>	12
7) <u>Evaluation.</u>	14
8) <u>Species Graphs</u>	17
9) <u>References</u>	25
10) <u>Appendix 1</u> Details of survey area for BC	26
11) <u>Appendix 2</u> Links to species in UKBMS database	28

A Report on the 2010 Butterfly Survey

Acknowledgements

The work grew out of the interest of Elizabeth Bamford who contacted Butterfly Conservation and organised the volunteers, then together with Fiona Aungier and Malcolm Hutcheson discussed the project with Natural England, laid out the transect and undertook an initial habitat survey.

The following members of the Group who took part in the field work:
F. Aungier, S. Aungier, A Chalmers, M Chalmers, E. Martin Fisher, M. Hardie, R Hardie, I Kille, M. McNeely, S. & J. Rae, P. Simpson, E. Turnbull + hound.

Credit should go to all who took part in the survey for their perseverance, as for the first 6 weeks of the survey only 3 butterflies were observed.

Fiona Aungier carried out the habitat survey and drew the maps. John Rae transferred the results to the database, tabulated and analysed them.
Fiona and John wrote this report. Malcolm Hutcheson provided the information on weather.

Finally we would like to thank Greenwich Hospitals' Manager, John Whiteford, Borewell Farm, Scremerston, who gave permission for the survey to go ahead on his land.

Picture 1 – View at Cocklawburn



A Report on the 2010 Butterfly Survey

Introduction

Between the beginning of April and the end of September 2010 volunteers from Berwick Wildlife Group undertook their third butterfly survey of Cocklawburn, near Berwick. (See Berwick Wildlife Group's website for a report on the 2008 to 2009 surveys)

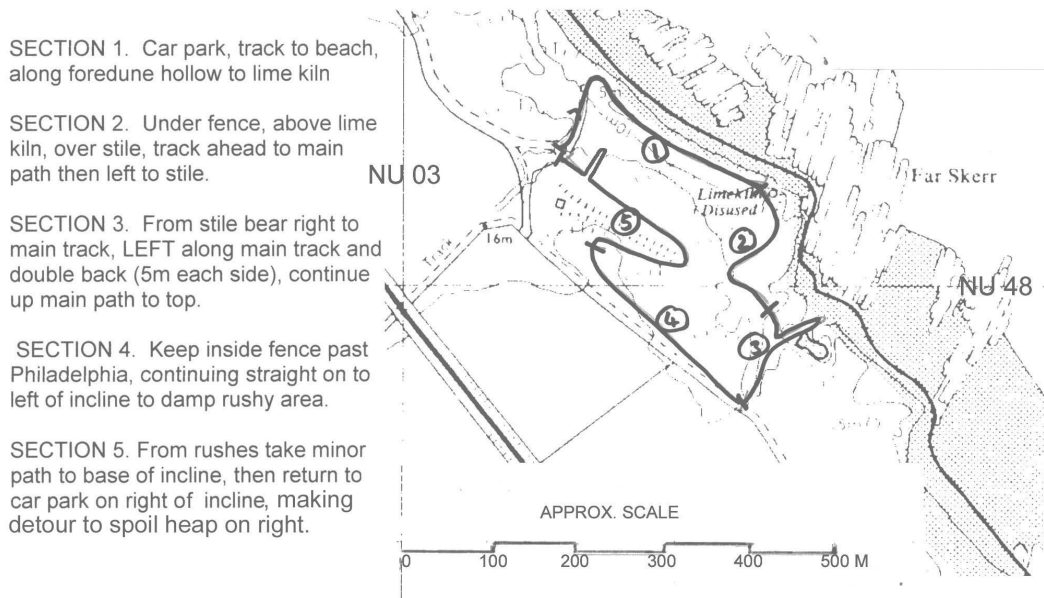
<http://www.berwickwildlifegroup.org.uk/Local%20Wildlife.html>

The purpose of this survey was to gather observations of butterfly species and numbers for inclusion in the databases of both Butterfly Conservation and the National Biodiversity Network, and to monitor the effect of a grazing regime instituted to maintain the diversity of flowering plants in this area under an Environmental Stewardship agreement between Natural England and the occupier.

A total of 1153 butterflies of 15 species were observed over the 26 week period in 2010.

<u>Year</u>	<u>Total Number of butterflies observed</u>	<u>Number of species</u>
2009	974	15
2008	612	13

Map 1 an overview of Cocklawburn and detail of the survey transect.



Cocklawburn is situated on the coast 5km south of the river Tweed at approx. NU 032 480.

A Report on the 2010 Butterfly Survey

Land Use: Although at first glance the area is normal dune grassland (newest near sea) and rough pasture, the site includes lime kiln spoil heaps, an old brick pit, clay areas, tracks, etc. as well as a natural dune. It is part of the Lindisfarne Site of Special Scientific Interest (and is contiguous with the Lindisfarne National Nature Reserve which covers the dune and intertidal areas north to Cheswick Black Rocks).

The area is the subject of an Environmental Stewardship Agreement, including light grazing by Aberdeen Angus cattle, the effects of which are being monitored by Natural England and Berwick Wildlife Group.

The various sections of the transect were:

Section Number	Section Length (m)	HABITAT	MANAGEMENT
		Description/notes & main species	Description notes
1	350	Dune grassland, including quite "young" dune, with Anthyllis, Geranium sanguineum, Astragalus. Ungrazed by stock. Some human trampling.	Unmanaged
2	250	More mature dune grassland and rough pasture – thistles, hawkweeds, dock, etc.	Light cattle grazing
3	250	Limestone spoil heaps, tracks, etc. Lotus, Thymus, Geranium sanguineum.	Part ungrazed, part light cattle grazing
4	300	Rougher grassland, thistles, some bushes, willow-herb, improved pasture nearby.	Light cattle grazing
5	300	Mature dune grassland, rough pasture, marsh and limestone spoil. Very variable substrate and hence flora.	Light cattle grazing

A Report on the 2010 Butterfly Survey

Method

Butterfly transects are a way of measuring changes in the abundance and variety of butterflies present at a site from year to year. Full (all species) transects are labour intensive and require a commitment to record weekly throughout the main six-month period in which butterflies fly in the UK.

The method adopted for this survey follows that laid down by Butterfly Conservation.

Establishing the transect.

- The transect was identified by Elizabeth, Fiona and Malcolm and consisted of a route 1450m in length that gave a fair representation of the habitats and other features present in the field.
- This transect was 'fixed' so the same route could be followed each week and also each year so comparisons can be made.
- It was subdivided into 5 sections, approximately equal in length, with each section representing a change in habitat or management type.

When to Record.

- Recording took place once a week from April 1st to the end of September.
- Transect counts were ideally made between 10:45 and 15:45 hours.
- Transect walks were only carried out in warm (13 °C or more), bright, fairly calm weather. Windspeed 4 or below on Beaufort scale in exposed place.
- The minimum criteria were 17°C if overcast or 13°C if at least 60% sunshine.

How to Record.

- To aid species identification each group had a "Guide to the Butterflies of Britain" produced by the Field Studies Council.
- The transect was walked at a slow, steady pace counting all butterflies seen within a fixed distance of 2.5m either side of the transect line and 5m ahead.
- The same route along the transect was followed each time.
- Before starting, record was taken of Week No, Date and Recorders and, both before and after walking the transect, the Time, Temperature and Windspeed. % Sun was recorded at the end of each section of the transect.
- The Transect was walked recording numbers of the various species of butterfly seen on that section of the transect.

After the transect had been walked the observations were given to Fiona who entered them into a standard Excel document, one for each weeks' survey, and John transferred this to the main database.

A Report on the 2010 Survey

OBSERVATIONS Summary of Observations

By Date

Date	Week	Large White	Small White	Green-veined White	Orange Tip	Small Copper	Common Blue	Red Admiral	Painted Lady	Small Tortoiseshell	Peacock	Dark green fritillary	Wall	Meadow Brown	Ringlet	Small Heath	Total Adult
3-Apr-10	1																
10-Apr-10	2																
16-Apr-10	3																
23-Apr-10	4																
5-May-10	5			1							2						3
8-May-10	6																
17-May-10	7		3			1											7
22-May-10	8		10	11													23
31-May-10	9		12	6		2			1				8				29
3-Jun-10	10		10	9	1	1											21
11-Jun-10	11			1		1	8						10			3	23
18-Jun-10	12						13										13
25-Jun-10	13		1				77	1						6	9		94
3-Jul-10	14						69					6		20	47		142
12-Jul-10	15						50					1		76	42		169
17-Jul-10	16							6						69	12		88
26-Jul-10	17		12	13			4			2				77	16		124
29-Jul-10	18		13	28	10	1	24			3				76	6		161
8-Aug-10	19		12	17			7			2	10		1	20	14		83
15-Aug-10	20		1	8	19		5			1	1			85			126
25-Aug-10	21		5	9	2		1				7			3			27
26-Aug-10	22					1							3	11			15
5-Sep-10	23																
12-Sep-10	24		1	2										1			5
18-Sep-10	25																
29-Sep-10	26																
Total		21	106	93	1	13	264	1	1	7	21	8	24	444	146	3	1153

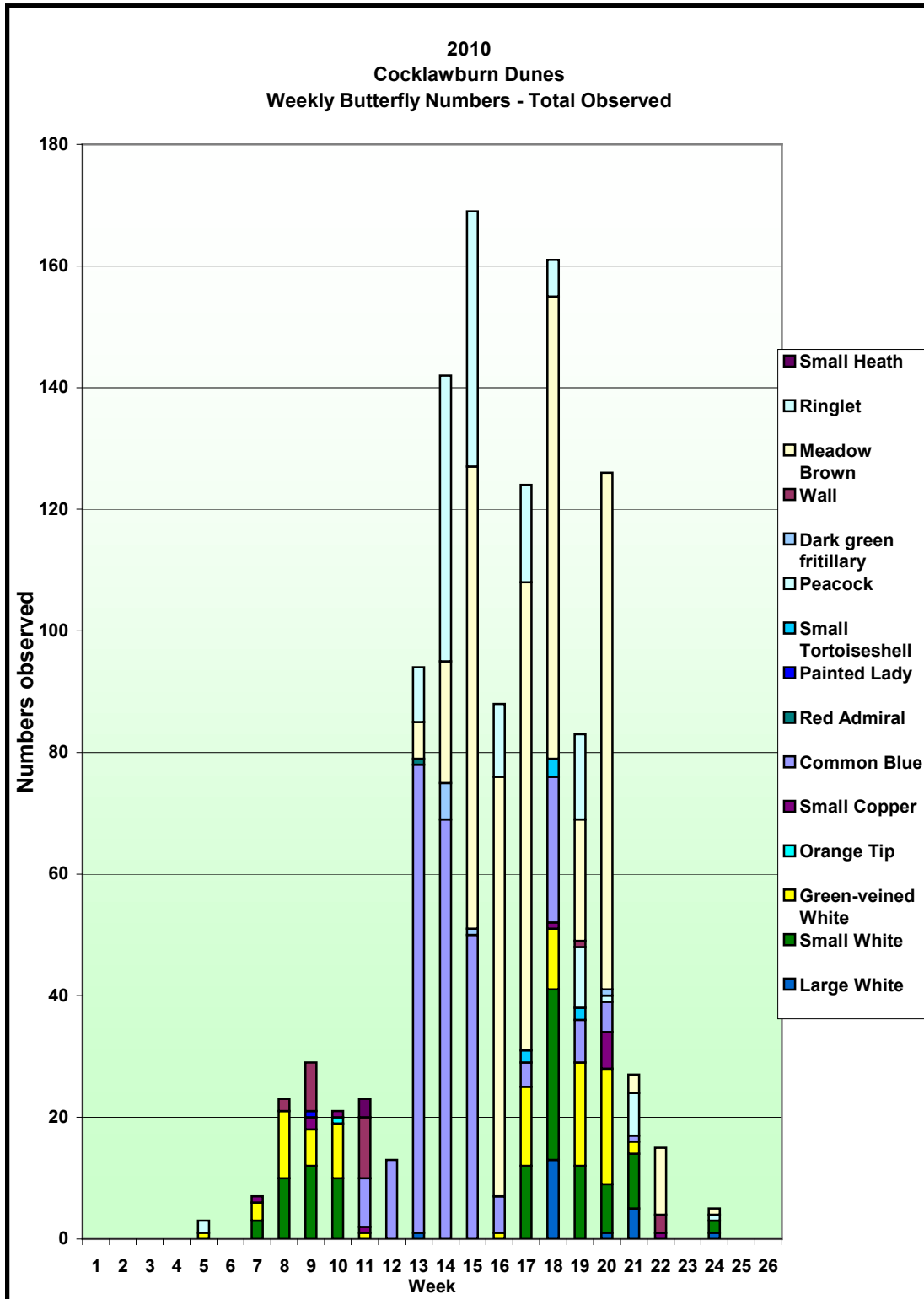
By Section

Section	Large White	Small White	Green-veined White	Orange Tip	Small Copper	Common Blue	Red Admiral	Painted Lady	Small Tortoiseshell	Peacock	Dark green fritillary	Wall	Meadow Brown	Ringlet	Small Heath	Total Adult
1	1	23	17		11	64			2	9	5	4	178	56		370
2	1	8	4			9		1	2	2	2	3	38	8		76
3	2	15	12		1	66			1	2	2	3	65	27		196
4	11	25	26			30				5		1	73	28		199
5	6	35	34	1	1	95	1		2	3	1	13	90	27	3	312
Total	21	106	93	1	13	264	1	1	7	21	8	24	444	146	3	1153

A Report on the 2010 Survey

Graphs – By Weeks

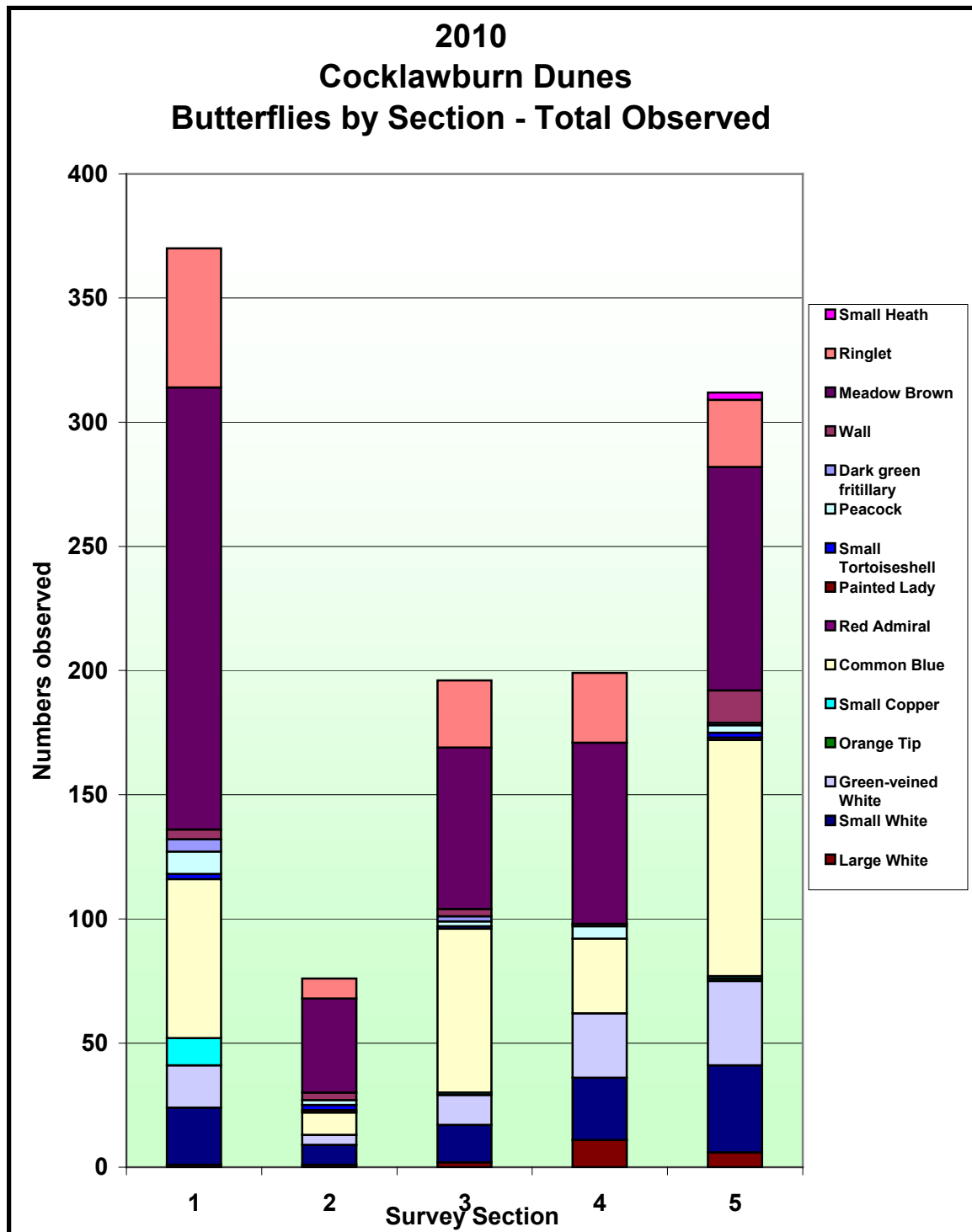
Total Butterfly Count Graphed by Weeks



A Report on the 2010 Butterfly Survey

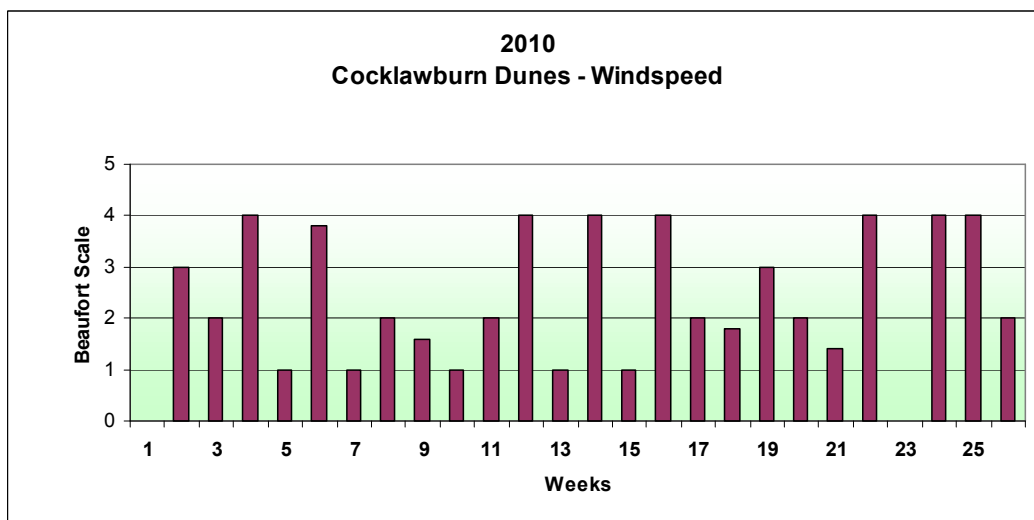
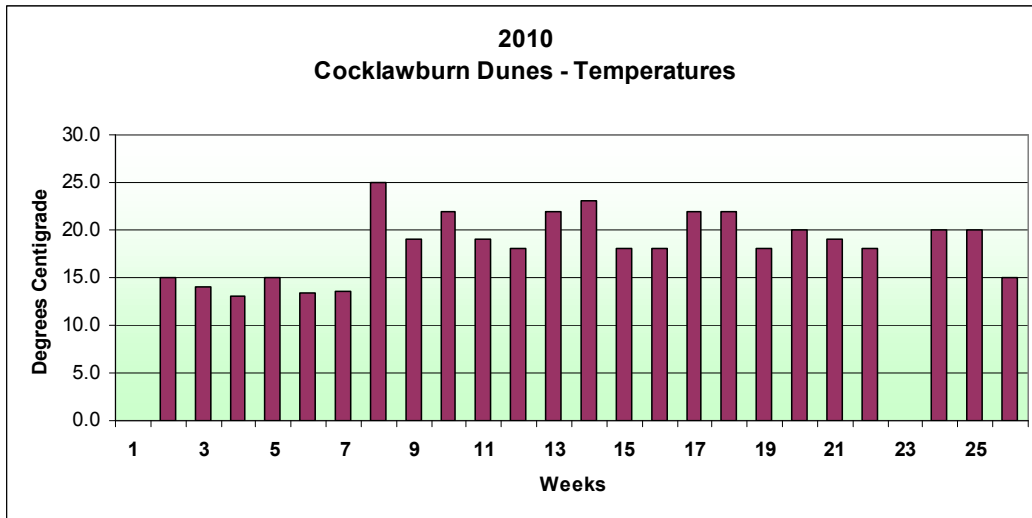
Graphs – By Section

Total Butterfly Count Graphed by section.

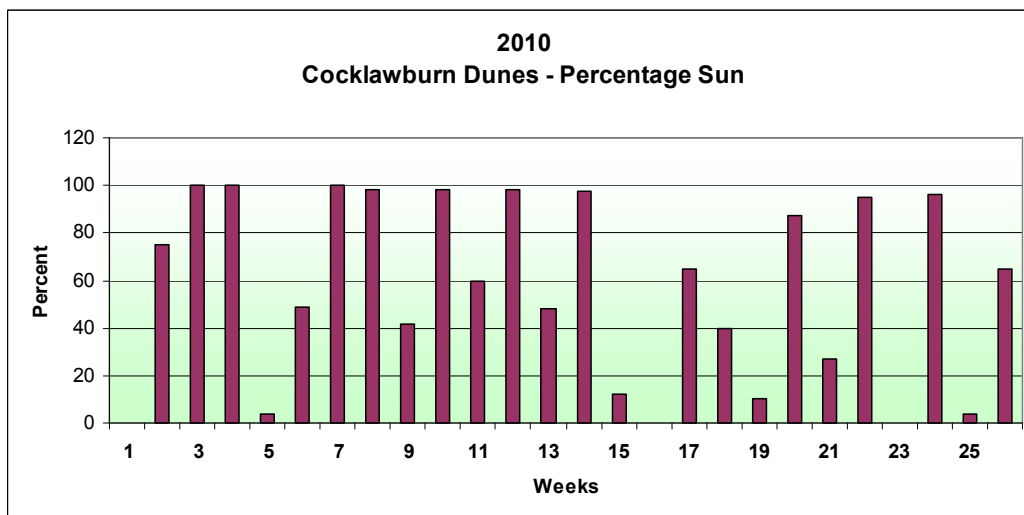


A Report on the 2010 Butterfly Survey

Weather



Force 1 = 1-3 mph Force 2 = 4-7 mph Force 3 = 8-12 mph Force 4 = 8-12 mph



A Report on the 2010 Butterfly Survey

Monthly Weather Reports

April was drier than usual, but lacked mild spring-like days. On the occasion of clear sunny weather it always seemed to be tempered by a cold wind from the north or the east. A cold clear night on the 2nd was the last white frost of the month with -2.2°C., (28.0° F), further slight frosts coming on three nights mid-month. Milder air swept in on the 24th. Total rainfall for the month was 23mm (0.91 ins), a dry month like April 2009. The warmest day was the 28th, with 19.0°C (66.2°F).

May was a rather cold month. It seemed the cold wind from a northerly quarter would never cease, so when a warm Atlantic sou-westerly came on the 19th bringing us a few days of high temperatures (22°C (71.6°F) on the 23rd), we thought summer had arrived. Not so. A return to the wind from the north-east brought cold temperatures and a late frost in some areas on the 26th. Rainfall was scarce with most coming overnight on the 6th, 14th, and the 30th, the total for the month being 39.5mm (1.6 ins). In addition to the slight frost on the 26th, there was frost on three night at the beginning of the month, with the coldest night on the 3rd when it fell to 1.1°C (34.0°F). By the end of the month the temperatures had crept back up to something like normal.

June was generally a pleasant and warm month. It started with several days of early sea-mists with the wind coming from the east. A change came with two nights of light rain on 7th/8th. From mid-month high pressure prevailed, bringing bright and sunny days with balmy sea breezes and rising temperatures, the peak being on the 27th with 26°C (78.8°F). It proved to be the driest June for at least 10 years with a total of only 12mm (0.5ins).

Although **July** was a warm month, it was short on bright sunny days with soaring temperatures. The warmest day was the 1st and 27°C (80.6°F) was recorded, but it was muggy and overcast with some drizzle. This was the basic pattern for the rest of the month, with only three fully sunny days. Winds were persistent but generally light from a SW quarter, but a passing cold front on the 4th brought strong SW winds up to gale force for a time. Rainfall, like last month, was below average with a monthly total of 65mm (2.6ins).

The weather for **August** was a little disappointing, as there were few long, hot, sunny days; mostly grey, quiet days interspersed with sunny spells and showers. Often the cloud cover kept it warm at night. A high of 15.6°C (60.1°F) on 20th and a cooler night brought sea-mist in at dawn. Night time temperatures fell at the end of the month to single figures, bringing the thoughts of the coming Autumn. Rainfall, like the last 4 months, was below average with only two nights of steady rain, the total for the month being 56mm (2.2 ins).

September seemed to blow 'hot and cold' throughout, with average temperatures and rainfall. Heavy rain and a strong north-east wind on the 7th was the only stormy day early in the month. An overnight temperature of 14.5°C (58.1°F) on the 11th was warm for the time of year. No frosts were recorded. A mild mid-month with light winds changed quickly on the 23rd to a

A Report on the 2010 Butterfly Survey

cold northerly and heavy showers, and gale-force winds on the 24th. Total rainfall for the month was 48mm (1.9ins).

Comparison between the 2008 - 2010 Observations.

The surveys, in all years, took place between the 1st of April and the 29th of September.

<u>Year</u>	<u>Total Number of butterflies observed</u>	<u>Number of species</u>
2010	1153	15
2009	974	15
2008	612	13

Species observed

2008	2009	2010
Common Blue	Common Blue	Common Blue
Dark Green Fritillary	Dark Green Fritillary	Dark Green Fritillary
Grayling		
	Green-veined White	Green-veined White
Large White	Large White	Large White
Meadow Brown	Meadow Brown	Meadow Brown
		Orange Tip
	Painted Lady	Painted Lady
Peacock	Peacock	Peacock
Red Admiral	Red Admiral	Red Admiral
Ringlet	Ringlet	Ringlet
Small Copper	Small Copper	Small Copper
Small Heath	Small Heath	Small Heath
	Small Skipper	
Small Tortoiseshell	Small Tortoiseshell	Small Tortoiseshell
Small White	Small White	Small White
Wall	Wall	Wall

Weather

Much of the variation in butterfly numbers can be attributed to the differing weather experienced during the survey periods. Below is a comparison of weather records for 2008, 2009 and 2010, gathered from a continuous weather recording station at Letham Shank Farm. This is a small farm situated just to the west of the A1 on the north bank of the river Tweed. Letham Shank Farm, grid ref NT978537, is one kilometre west of the survey area, and far less exposed to the sea's influence.

A Report on the 2010 Butterfly Survey

2008

Date	Barometer mb.	Max. Temp °C	Min. Temp °C	Av Wind Dir. (T)	Av Wind kt.	Total Rainfall mm.	Total Sunshine hr.
April	1007	10.7	4.3	171	7.9	64.0	140.60
May	1016	14.1	8.5	159	6.8	25.8	185.60
June	1011	17.3	9.5	205	6.2	67.5	141.80
July	1009	18.4	12.2	179	6.3	48.9	120.50
August	1004	18.2	12.5	197	5.5	168.9	76.90
September	1013	16.0	10.2	204	6.7	125.5	91.20

2009

Date	Barometer mb.	Max. Temp °C	Min. Temp °C	Av Wind Dir. (T)	Av Wind kt.	Total Rainfall mm.	Total Sunshine hr.
April	1010	12.8	5.7	177	7.2	8.3	153.8
May	1012	15.1	6.9	185	8.0	39.4	234.8
June	1016	16.0	10.0	161	5.9	22.0	182.0
July	1005	18.8	11.9	211	7.0	180.4	72.3
August	1008	18.9	11.9	214	6.2	64.4	30.5
September	1015	16.5	9.8	230	7.3	56.5	33.5

2010

Date	Av Barometer mb.	Max. Temp °C	Min. Temp °C	Av Wind Dir. (T)	Av Wind kt.	Total Rainfall mm.	Total Sunshine hr.
April	1016	12.2	4.6	222	6.7	69.7	64.2
May	1015	13.4	6.1	203	6.4	28.4	126.3
June	1016	17.4	10.3	179	5.0	11.3	91.2
July	1008	19.3	11.7	233	6.0	63.8	157.6
August	1010	17.6	10.2	236	5.1	56.6	166.2
September	1010	15.9	10.0	212	8.5	37.1	134.5

In the cold winter of 2009/10 "insects seem to have hibernated well, undisturbed by mild un-seasonal weather" (National Trust, 2010). In North Northumberland the spring of 2010 was chilly but dry, not nearly as sunny and warm as in 2009, but the summer of 2010 was warmer and dryer than in either of the two previous years. Even so, warm, sunny, still days were few – which made counting butterflies difficult to arrange. As before, sometimes the "best" available day of a count week was distinctly sub-optimal (low temperature, lack of sun), but it seemed better to count than to refrain from counting. When considered appropriate (i.e. on a fine still morning when a brisk on-shore breeze seemed likely later) counts were sometimes made earlier in the morning than recommended, starting at 10.00 rather than 10.45. This seemed a beneficial strategy, particularly in May and early June when easterly winds predominated. Data on temperature and windspeed, and time at the start and end of the count, are always recorded on the sheets sent to Butterfly Conservation.

A Report on the 2010 Butterfly Survey

Evaluation.

The survey "area" in the transect is effectively a moving cube 5m x 5m x 5m, directly in front of the surveyors as they walk along. Butterflies only get counted if they fly through this cube just in front of the surveyors. There is more time for a butterfly to fly through the cube if the surveyors spend longer there, so we try to keep walking at a steady pace although it is necessarily fairly slow (up to 1 hour to cover the 1.5 k route). It is easiest if one person records and one or more scan for butterflies, or they may be missed when you have your head down. The transect data, comprising butterflies in the cube, are only a very small sample of those flying all around, but a sample which can be usefully compared with other transects all over the UK. Butterfly transects also give a true indication of change in species numbers (Thomas, 2005). The whole "site" at Cocklawburn dunes will hold thousands of butterflies of which those counted on the transect are a small fraction.

The data from the transect have been sent to Butterfly Conservation (www.butterfly-conservation.org.uk), who co-ordinate "independent" transects for the United Kingdom Butterfly Monitoring Scheme (UKBMS). Over the first 32 years of the scheme, recorders had made over 170,000 weekly visits to 1,500 separate sites, walking over 375,000 km and counting over 12.5 million butterflies! (UKBMS website, 2009). Transects are especially valuable when they have been continued for a large number of years (some were initiated in 1976), when they allow monitoring of the effect on butterflies of changes in land use, habitat development, weather and climate (Brereton *et al*, 2006). The survey at Cocklawburn is one of about 1, 465 transects, a small contribution to this valuable data set.

The results from the transects also contribute to the "sightings" sent to Butterfly Conservation by thousands of groups and individuals, having been collated and verified by local co-ordinators. These are especially useful for showing changes in distribution (Fox *et al*, 2006).

This is the third field season we have worked at Cocklawburn. 1,153 butterflies were counted on the transect in 2010, compared with 974 in 2009 and only 612 in 2008. This reflects national trends. "After some terrible recent years, 2010 has been encouraging for Britain's dwindling butterfly population.....' The weather has been better for butterflies this year - a cold winter and a hot June and July seemed to benefit many species' said Richard Fox, Surveys Manager at Butterfly Conservation" (Butterfly Conservation website, 2011).

Overall, the spring numbers of those species which over winter as adults (such as Peacocks and Small Tortoiseshells) depend on how many went into torpor the previous autumn, and how many survived the winter (Toms, 2008). Numbers later in the year depend how successfully these first individuals breed. At Cocklawburn in 2010 we only recorded 21 Peacocks, mostly second-brooded individuals in August, compared to 36 in 2009 and 47 in 2008. There were 7 Small Tortoiseshells (all second-brooders in late July) in 2010, with 36 in 2009 and 2 in 2008. Nationally numbers of Small Tortoiseshells have risen in 2010. "The once-common Small Tortoiseshell, whose populations have been ravaged in recent years, showed welcome signs of recovery in some areas of the UK"

A Report on the 2010 Butterfly Survey

(Butterfly Conservation website, 2011). The erratic numbers, and appearance of these species only later in the season, in our 3 years of survey at Cocklawburn suggest they do not overwinter here but the site is re-populated from elsewhere only when the second brood takes to the wing.

Except for Brimstones (only rare vagrants so far north), White butterflies overwinter as pupae, the resulting adults usually laying eggs which hatch the same summer, so there are 2 or more generations each year. At Cocklawburn in both 2008 and 2009 there were no sightings of the spring brood of Large, Small and Green-veined Whites, but some butterflies of later generations appeared (?migrated in) in August. In 2010 by contrast, there were obviously two generations of Small and Green-veined Whites present, presumably having bred on site or very nearby. (The former is more likely, as the site lies between the North Sea and intensively farmed ground inland). It is tempting to put this down to an increase of cruciferous foodplants in the sward as a result of the recent grazing regime – but it will take several more years of observations to confirm this. A single Orange Tip (they normally have only a spring generation) appeared for the first time on the Cocklawburn transect this year.

Common Blues and Small Coppers have more than one generation a year, and they overwinter as caterpillars. In 2010 nationally "The Common Blue has.....had an excellent year, especially its second brood in August. It was reported widely and recorded in very large numbers in southern Britain." (Butterfly Conservation website, 2011). Common Blues were indeed abundant at Cocklawburn, with 264 individuals in the transect compared to 102 in 2008 and 163 in 2009. Numbers of Small Coppers were also slightly higher than in the previous years (13 in 2010; 7 in 2009; 5 in 2008). It has been suggested (National Trust, 2010) that their foodplants (Bird's-foot Trefoil and Sheep's Sorrel) did well this year as grass growth was suppressed by the dry weather in spring. As in 2009, individuals of Common Blue and Small Copper represented both first and second broods

Of the common single-brooded species which overwinter as caterpillars, Ringlets were plentiful at Cocklawburn as expected (146 in 2010; 170 in 2009; 69 in 2008), and Meadow Browns were especially abundant (444 in 2010; 325 in 2008; 311 in 2008).

Grayling and Wall butterflies also overwinter as caterpillars in tussocks of the grass on which they feed. These species are currently expanding their range along the coast of North Northumberland into Scotland. "The Wall currently reaches its northern limit in the Borders and Dumfries and Galloway, but the distribution of this butterfly has undergone great fluctuations since being first recorded, with past records from as far north as Aberdeen" (Mercer *et al*, 2009). They go on to say "The Wall has declined dramatically in recent years in the UK, particularly in southern England". It is just this sort of fluctuation in numbers and distribution that the UKBMS is designed to elucidate. We recorded 24 Walls (most from the first brood) from the transect at Cocklawburn in 2010; 20 in 2009; and 12 in 2008. Grayling caterpillars feed on the finer grasses – Sheep's Fescue, Red Fescue and Early Hair Grass, and prefer open areas, a habitat that occurs at Cocklawburn. However no Graylings were seen

A Report on the 2010 Butterfly Survey

either on- or off-transect at Cocklawburn in 2010, or in 2009, although 4 were recorded in 2008.

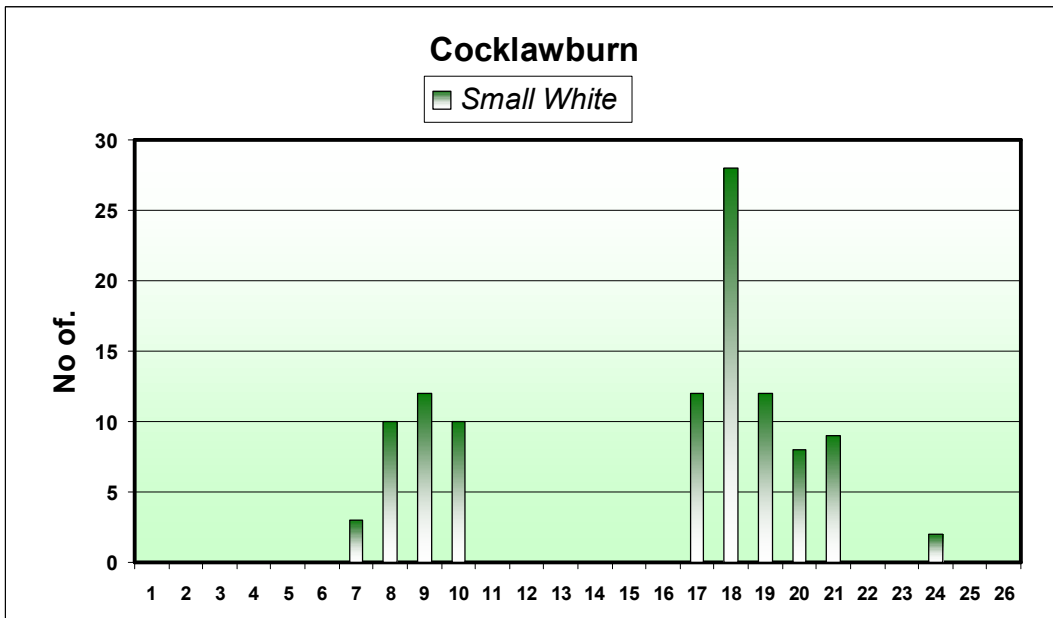
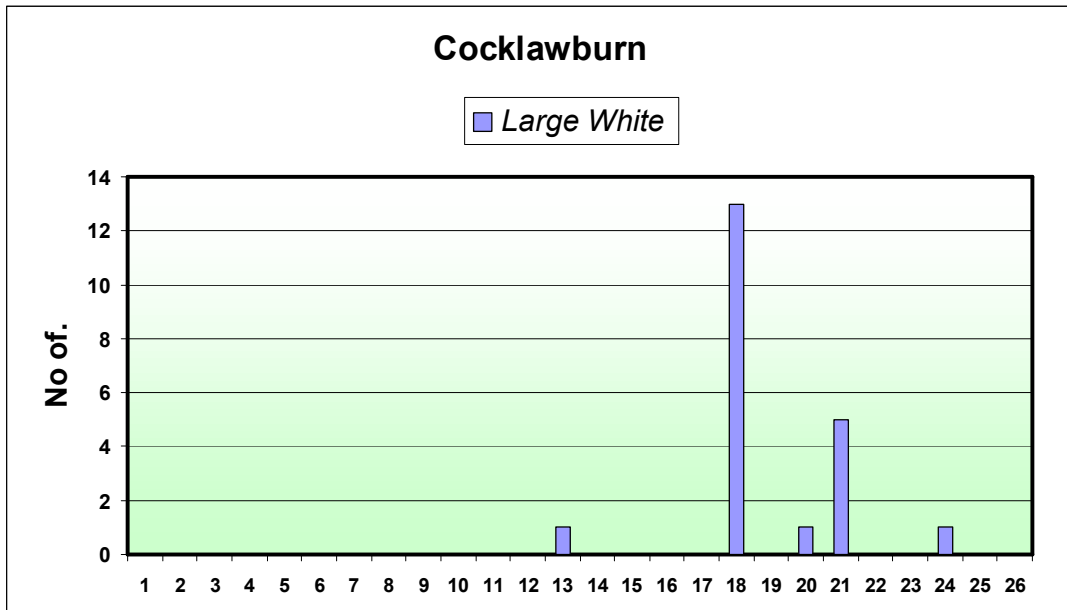
Small Skipper caterpillars are also grass-eaters (Creeping Soft-grass or Yorkshire Fog), but need areas of long grass to survive as they overwinter in small cocoons within grass stems. No Small Skippers were seen at Cocklawburn in 2008 or 2010, with 1 recorded on the transect in 2009. The Small Heath also occurs occasionally at Cocklawburn, with 3 on the transect in 2010; 2 in 2009 and 11 in 2008. This is another species declining rapidly in southern England but hanging on in the north and Scotland (Mercer *et al*, 2009). The Cocklawburn population seems marginal.

Dark Green Fritillaries appear on the transect intermittently – 8 in 2010; 1 in 2009 and 0 in 2008. Their caterpillar food-plant is Dog Violet (present at Cocklawburn) but they are strong fliers and abundant in the dunes at Holy Island, so it is not known if the specimens at Cocklawburn are bred locally.

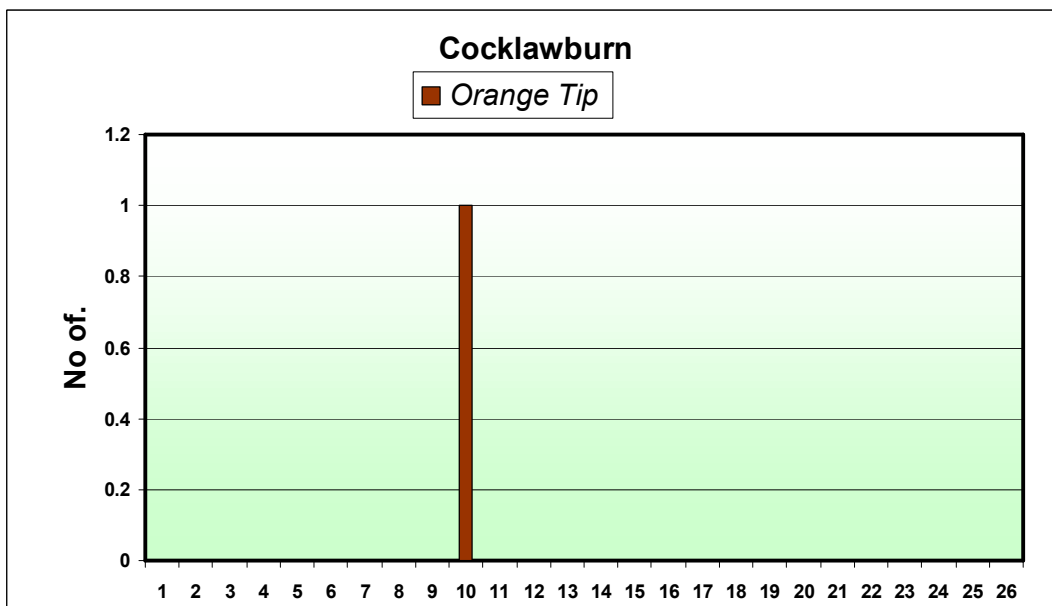
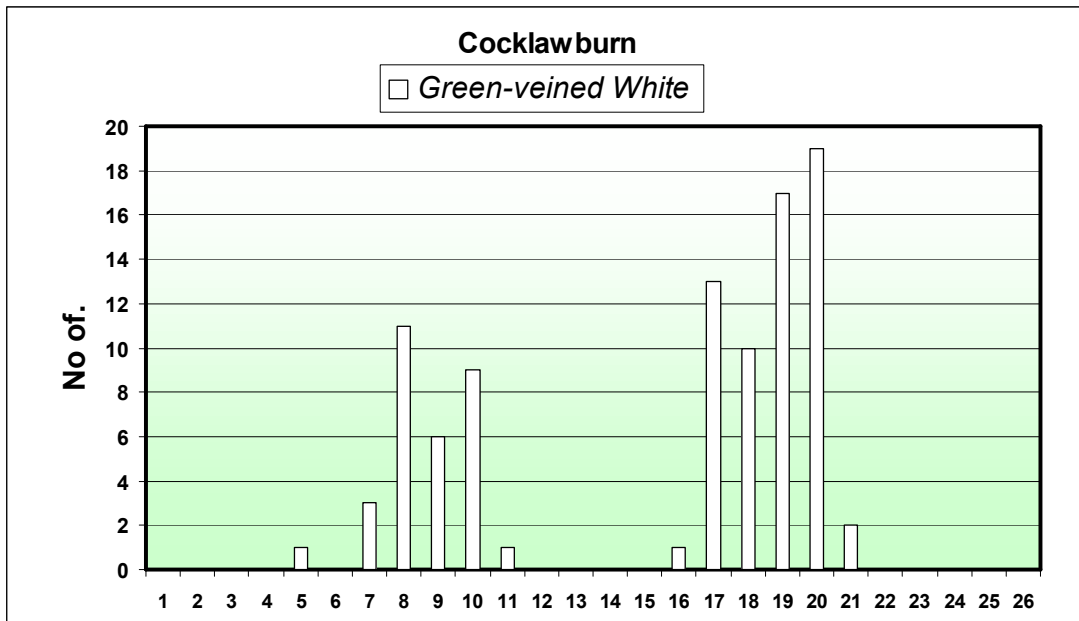
Of the migrant butterfly species, Red Admirals appeared on occasion at Cocklawburn during 2008, with 8 on the transect in week 20 (mid-August), but only 2 were seen in 2009 and 1 in 2010. Painted Ladies showed quite a different pattern, with none in 2008 but 114 in 2009 between 8th June and 18th September, and only 1 in 2010. This reflects the national picture. [August 2010] " was a poor month for immigrant moth and butterflies such as the painted ladies" (National Trust, 2010).

A Report on the 2010 Butterfly Survey

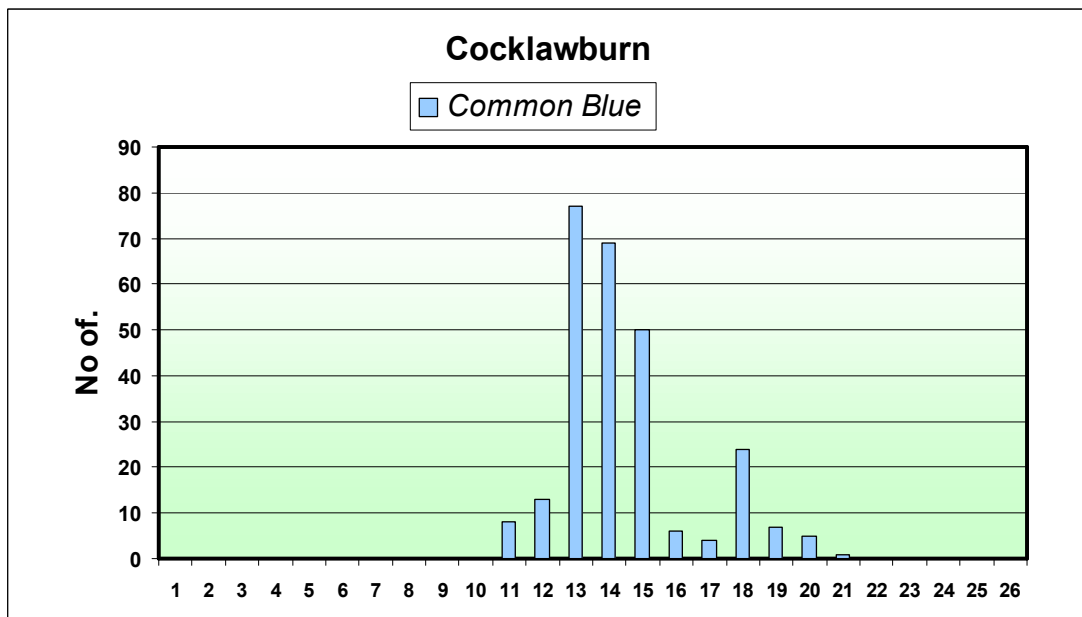
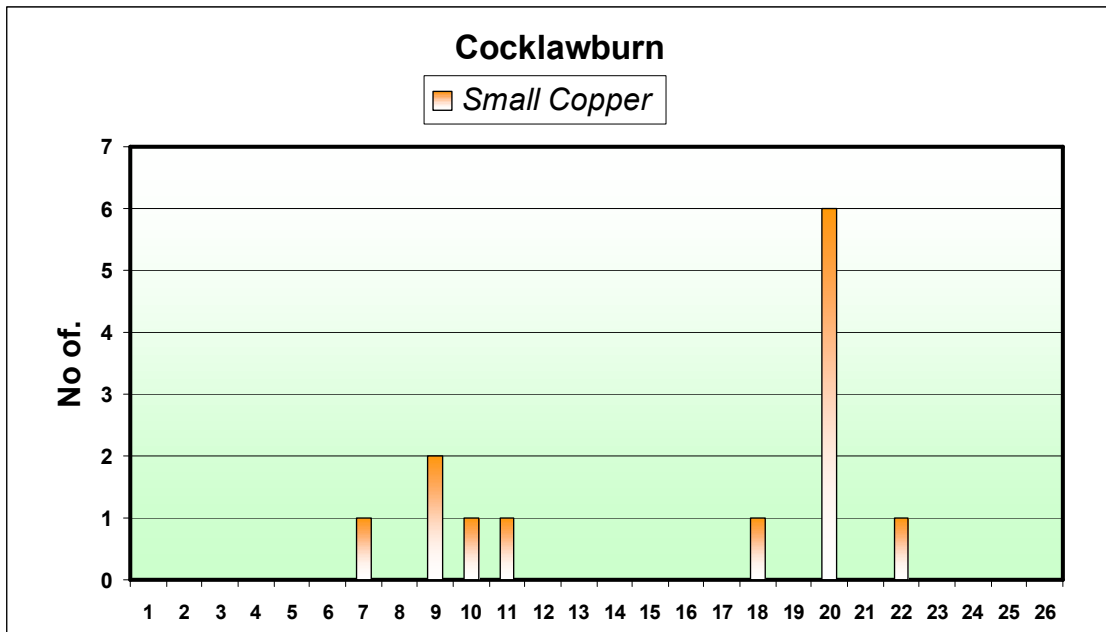
Graphs for individual species



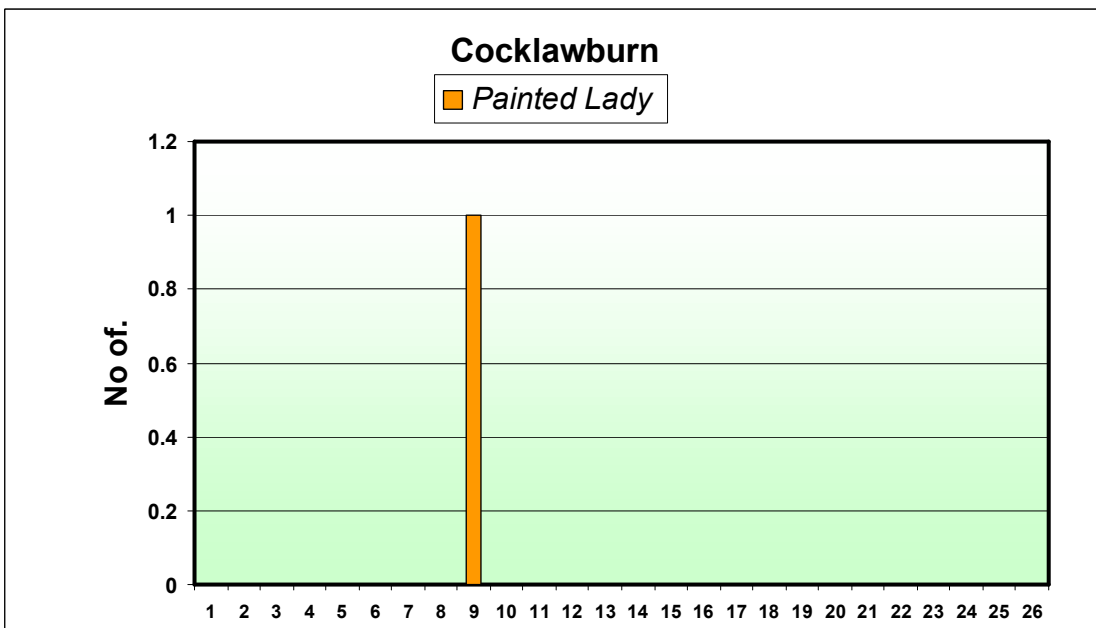
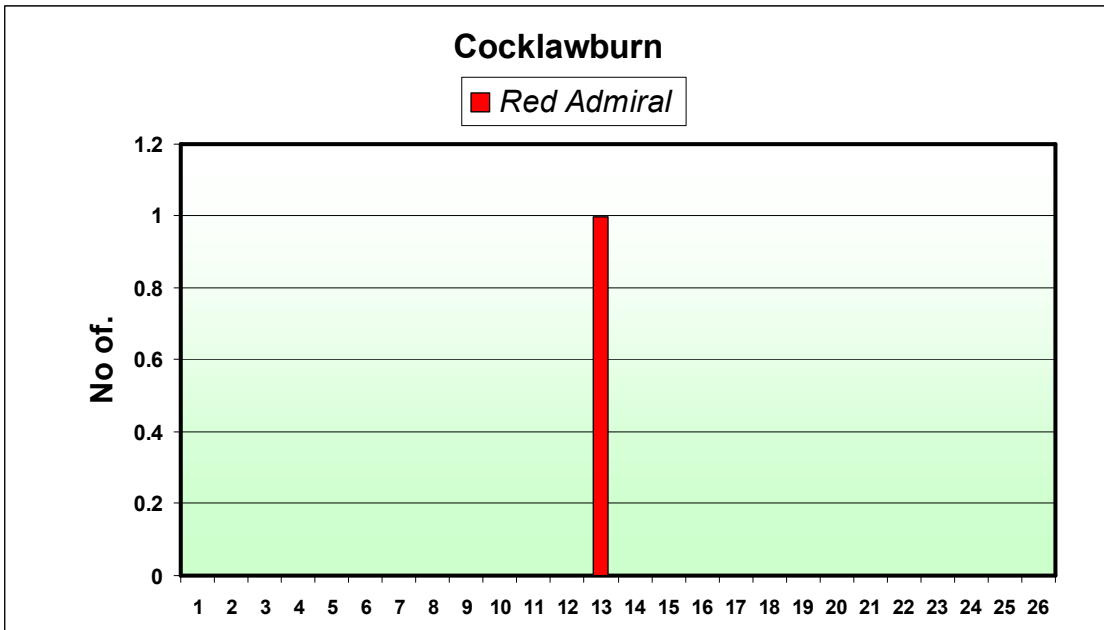
A Report on the 2010 Butterfly Survey



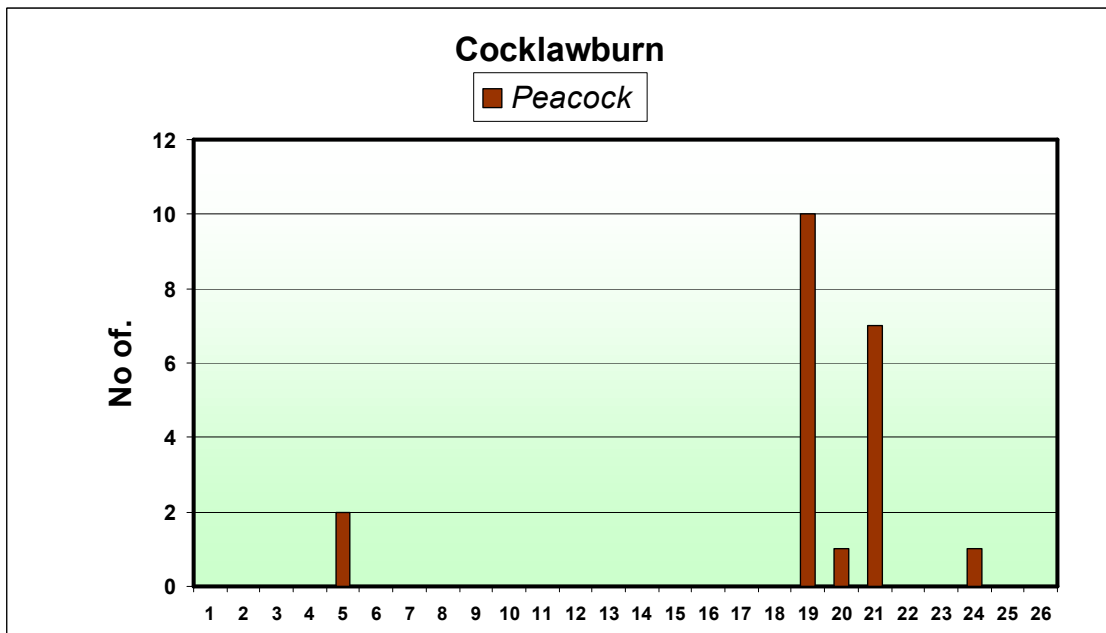
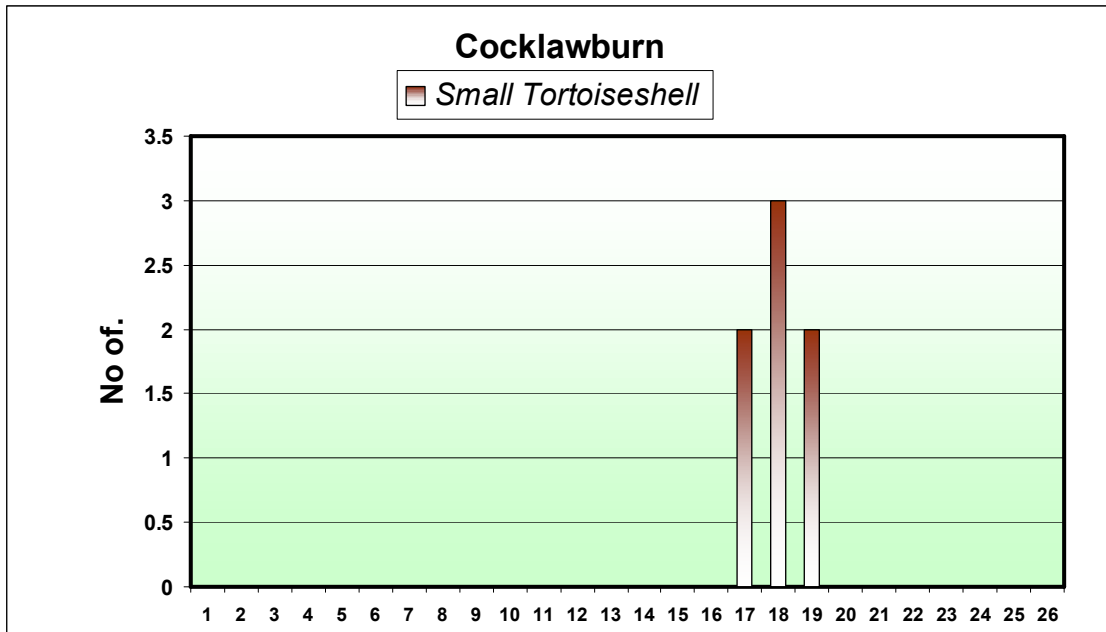
A Report on the 2010 Butterfly Survey



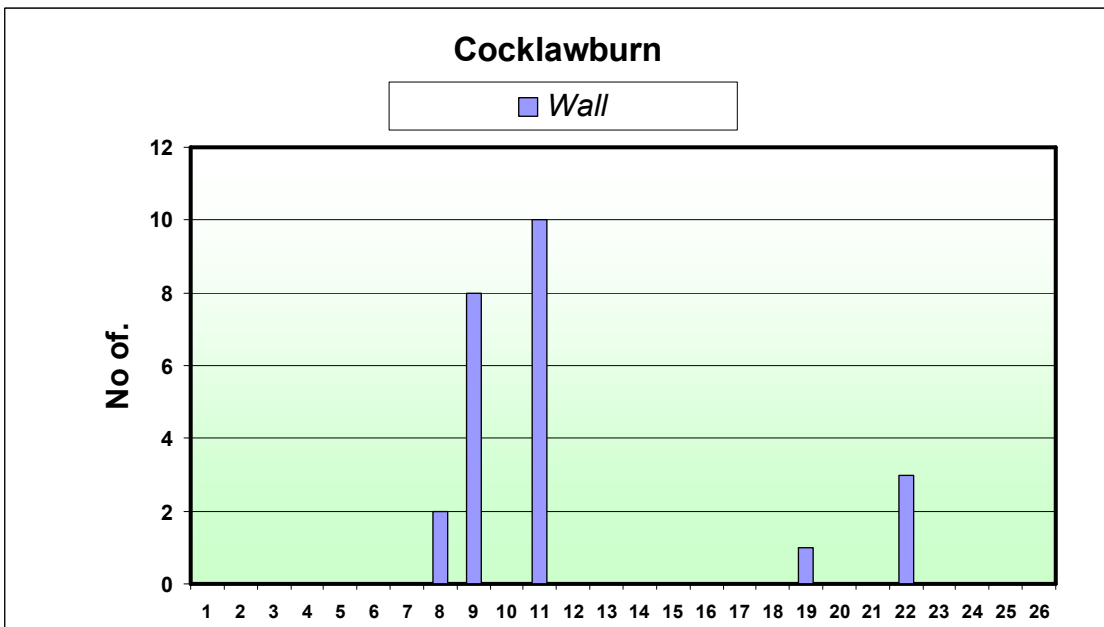
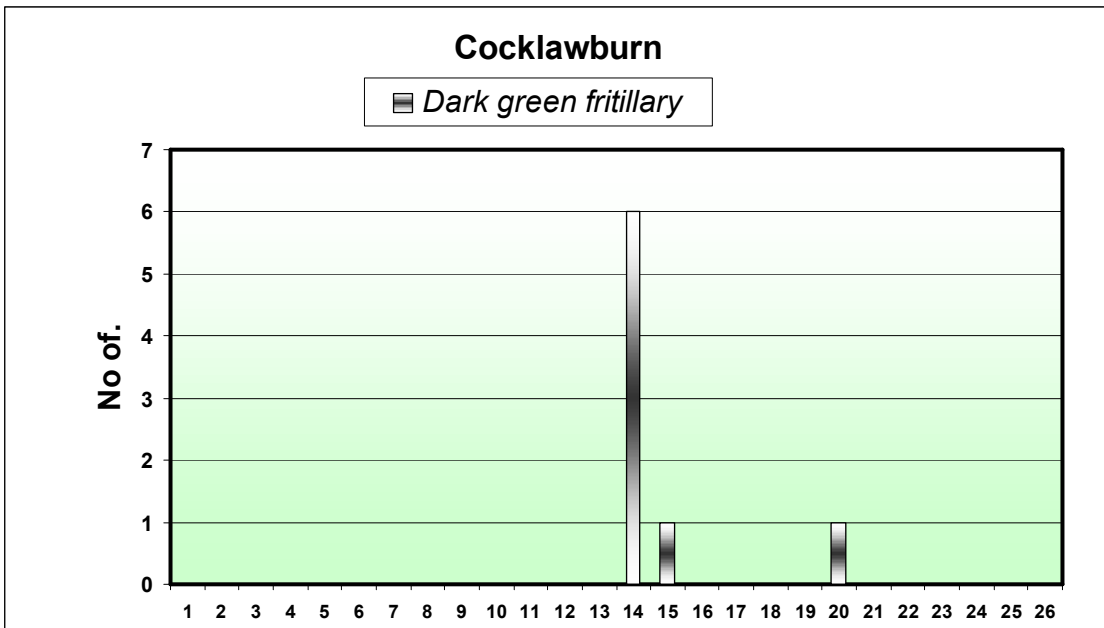
A Report on the 2010 Butterfly Survey



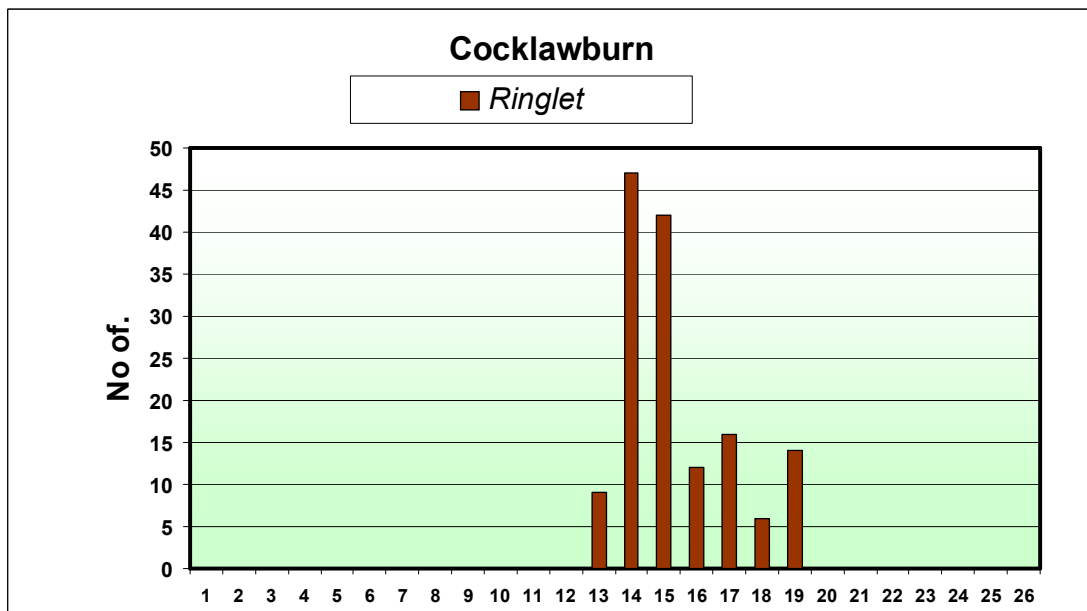
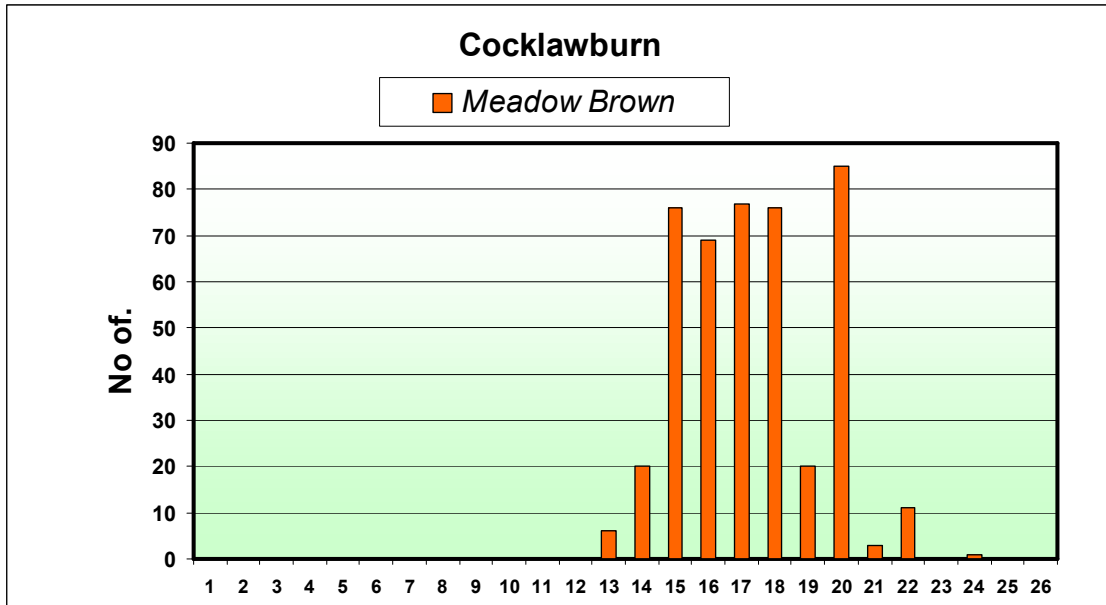
A Report on the 2010 Butterfly Survey



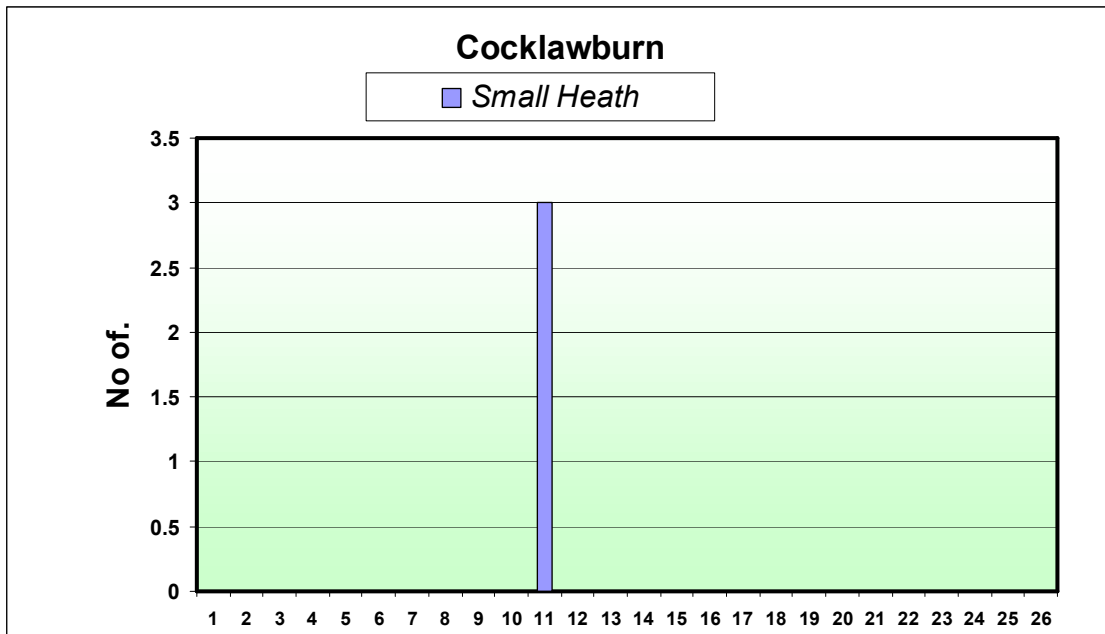
A Report on the 2010 Butterfly Survey



A Report on the 2010 Butterfly Survey



A Report on the 2010 Butterfly Survey



A Report on the 2010 Butterfly Survey

References

Brereton, T., Roy, D. and Greatorex-Davies, N., 2007. Thirty years and counting. The contribution to conservation and ecology of butterfly-monitoring in the UK. *British Wildlife*, **17**, 162-170.

British Butterfly Conservation Society – This is the largest butterfly conservation organisation in Europe.

website - <http://www.butterfly-conservation.org>

Butterfly Conservation website, January 2011. http://www.butterfly-conservation.org/article/9/225/good_year_for_britains_butterflies_but_the_battle_to_save_them_continues.html

Fox, R., Asher, J., Brereton, T., Roy, D. and Warren, M., 2007. *The State of Butterflies in Britain and Ireland*. Pisces Publications, Newbury.

Lewington, R. and Bebbington, J. , 2005 (second edition). *Guide to the Butterflies of Britain*. Field Studies Council.

Mercer, J., Buckland, R., Kirkland, P., and Waddell, J., 2009. *Butterfly Atlas of the Scottish Borders*. Butterfly Conservation Scotland. Atropos publishing.

National Biodiversity Network – The National Biodiversity Network is the UK's first web based database of British wildlife.

website - <http://www.nbn.org.uk>

National Trust, 2010. "Wildlife and the weather". Navigate from http://www.nationaltrust.org.uk/main/w-global/w-news/w-latest_news.htm

Thomas, J.A., 2005. Monitoring changes in the abundance and distribution of insects using butterflies and other indicator groups. *Philosophical Transactions of the Royal Society, B*, **360**, 339-357.

United Kingdom Butterfly Monitoring Scheme (UKBMS). website – www.ukbms.org.uk

A Report on the 2010 Butterfly Survey

Appendix 1

Details of Survey Area as supplied to Butterfly Conservation

Site Name	Cocklawburn Dunes (inland from Mid & Far Skerrs).		County	Northumberland				
OS Grid ref. (6 fig.)	NU 032 480	OS map no. (1:50 000)	75	Year transect established			2008	
Transect length (m)	1,500m		Transect width (m) Tick one	5	<input checked="" type="checkbox"/>	6	1 0	Other
Overall habitat description	Coastal dune grassland.				Hab. Code(s)	B1.4		
Land Use if the transect is on a disused industrial site tick the type	<input type="checkbox"/>	Rail way	<input type="checkbox"/>	Quarry	<input type="checkbox"/>	Pit/mine	<input type="checkbox"/>	Other - add to notes <input checked="" type="checkbox"/>
Sites conservation status	SSSI, ESA		Type of recorder	V				
Recorder details	Berwick Wildlife Group, 23 Castle Terrace, Berwick upon Tweed, TD15 1NR							
Owner details	Greenwich Hospitals. Manager John Whiteford, Borewell Farm, Scremerston, TD15 1RJ							

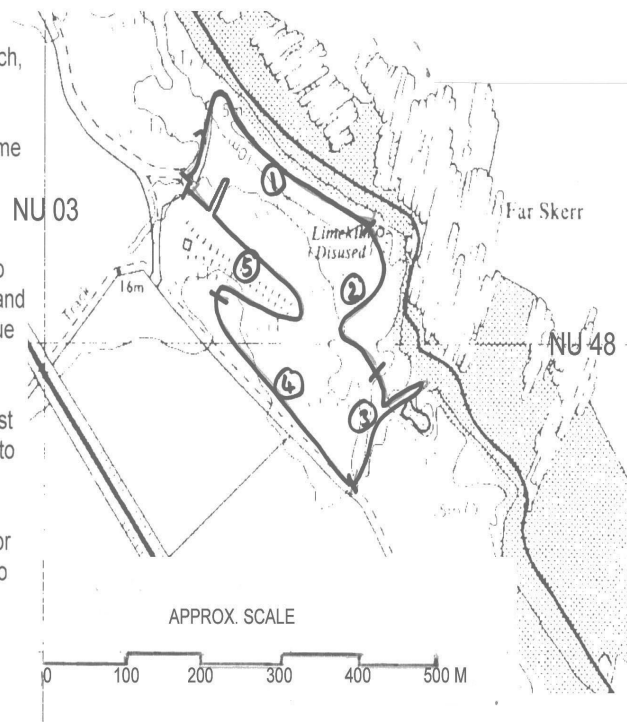
SECTION 1. Car park, track to beach, along foredune hollow to lime kiln

SECTION 2. Under fence, above lime kiln, over stile, track ahead to main path then left to stile.

SECTION 3. From stile bear right to main track, LEFT along main track and double back (5m each side), continue up main path to top.

SECTION 4. Keep inside fence past Philadelphia, continuing straight on to left of incline to damp rushy area.

SECTION 5. From rushes take minor path to base of incline, then return to car park on right of incline, making detour to spoil heap on right.



TARGET NOTES

Land Use: Although at first glance normal dune grassland (newest near sea) and rough pasture, site includes lime kiln spoil heaps, an old brick pit, clay areas, tracks, etc.

Area subject of Management Agreement, including light grazing by Aberdeen Angus, monitored by Natural England and Berwick Wildlife Group.

A Report on the 2010 Butterfly Survey

Summary of Habitat

Section number	Grid Ref. (for mapping)	Section Length (m)	HABITAT		MANAGEMENT	
			Description/notes & main species	Code	Description/notes	Code
1	NU 033 482	350	Dune grassland, including quite "young" dune, with Anthyllis, Geranium sanguineum, Astragalus. Ungrazed by stock. Some trampling.	B1.4	Unmanaged	
2	NU 034 481	250	More mature dune grassland and rough pasture – thistles, hawkweeds, dock, etc.	E2.1/ 2.2	Light cattle grazing	M 1
3	NU 034 479	250	Limestone spoil heaps, tracks, etc. Lotus, Thymus, Geranium sanguineum.		Part ungrazed, part light cattle grazing	M 1
4	NU 033 479	300	Rougher grassland, more thistles, some bushes, willow-herb, improved pasture nearby.	E2.1/ 2.2 + F3.1	Light cattle grazing	M 1
5	NU 033 481	300	Mature dune grassland, rough pasture and marsh and limestone spoil. Very variable substrate and hence flora.	E2.1/ 2.2 + E3 + E1.2	Light cattle grazing	M 1

A Report on the 2010 Butterfly Survey

Appendix 2

Observed species details and status in the United Kingdom Butterfly Monitoring Scheme database.

Small Skipper - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=120>

Large White - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=98>

Small White - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=100>

Orange Tip - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=4>

Green-veined White -
<http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=99>

Small Copper - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=68>

Common Blue - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=106>

Red Admiral - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=122>

Small Tortoiseshell -
<http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=2>

Peacock - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=84>

Dark Green Fritillary -
<http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=12>

Wall Brown - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=94>

Grayling - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=48>

Meadow Brown - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=75>

Small Heath - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=29>

Ringlet - <http://www.ukbms.org/SpeciesFactsheets.aspx?speciesId=8>