



# Samphire Hoe Butterflies Report 1999 - 2009



Samphire Hoe is owned by Eurotunnel and managed together  
with the White Cliffs Countryside Partnership.

## INTRODUCTION

**Samphire Hoe** is made from 4.9 million cubic metres of Chalk Marl dug to create the Channel Tunnel. The site is owned by Eurotunnel and managed in conjunction with the White Cliffs Countryside Partnership.

**Thirty species of butterflies** have been recorded since the site opened to the public in July 1997. The recording of butterflies provides data on their colonisation of this new area of land and its ecological development.



## RECORDING METHODOLOGY

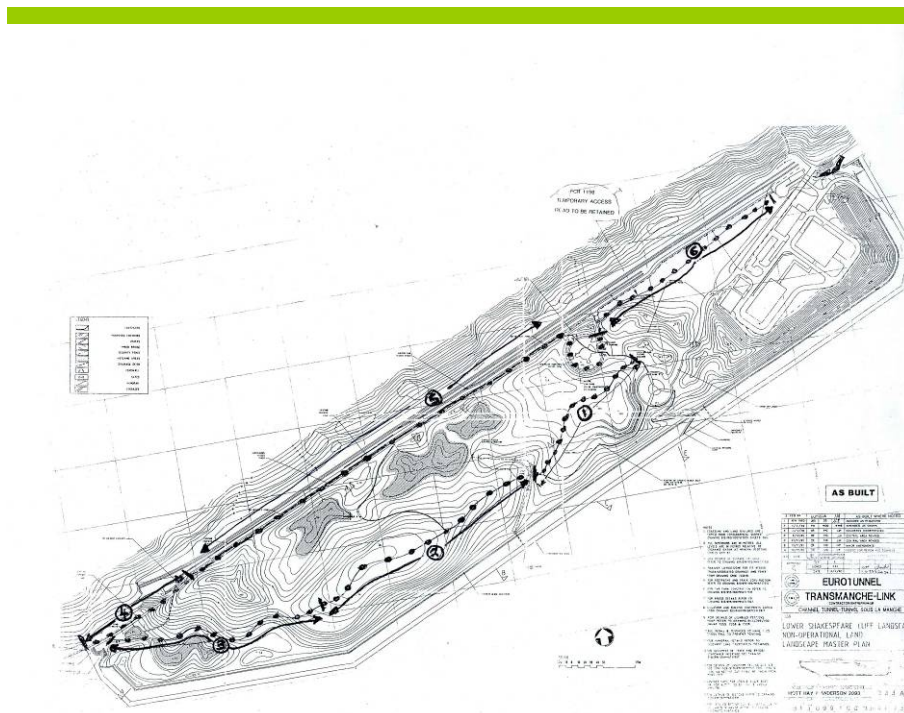
The butterflies are recorded by two means; firstly by skilled eye observation as the site is walked on an almost daily basis; secondly by a fixed transect, which was started in 1999. This follows the method established for the Butterfly Monitoring Scheme (BMS) by the Institute for Terrestrial Ecology in the 1970's. Due to the time consuming nature of the survey and very low numbers of butterflies seen, April was not included in the survey. For similar reasons in the first few years, September was not included, and for statistical purposes has not been included in the transect analysis.

### The Transect Route

The route follows the path from the office down to the west end and returns along the back track. It is divided into six sections.

Section 1	272m	Section 2	396m
Section 3	324m	Section 4	158m
Section 5	870m	Section 6	333m

Map showing the transect route and sections.



## SYSTEMATIC LIST

### **Small Skipper** *Thymelicus sylvestris*

Food plant – Grasses in particular Yorkshire-fog *Holcus lanatus*

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo T.Morris

### **Essex Skipper** *Thymelicus lineola*

Food plant – Grasses in particular Cock's-foot *Dactylis glomerata*

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo T.Morris



Both these species have been recorded on the Hoe, but the Small Skipper dominates. The way to separate the two species is the differing colour of the underside of the antennae. Because they are so similar for the purpose of transect the two are lumped together.



### Large Skipper *Ochlodes venata*

Food plant – Various grasses in particular Cock's-foot *Dactylis glomerata*

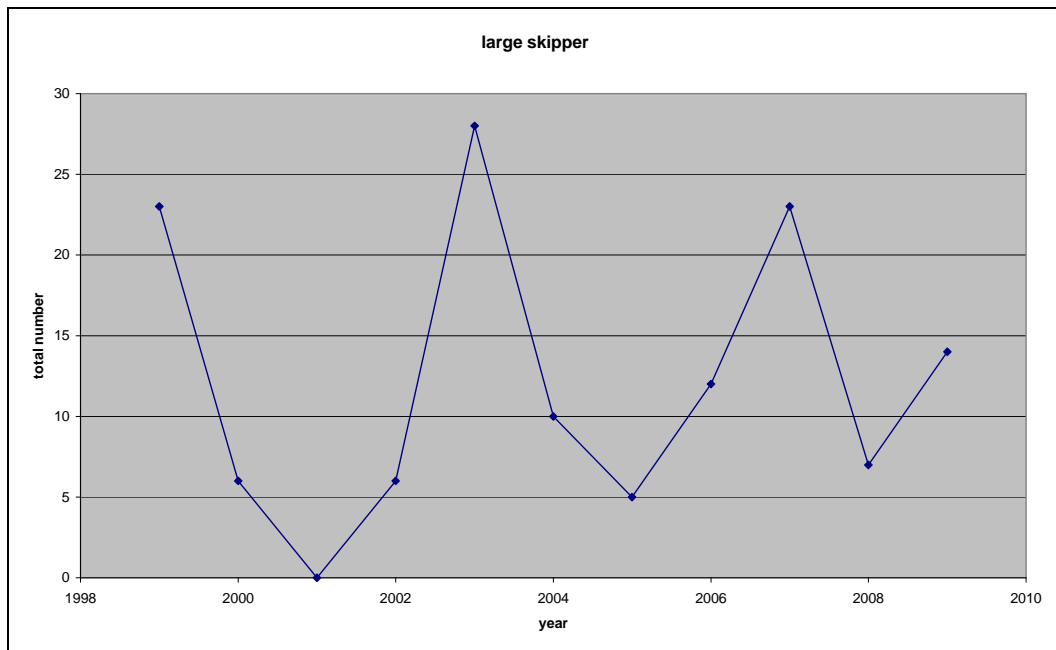
#### Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

This butterfly breeds on the Hoe. They can often be seen sunning themselves on bramble leaves, in a strategic spot to defend their territory from rival males or find females.



Photo P.Holt



Earliest date	Peak day count	Latest date
07.06.05	11 on 24.06.03	31.08.02

### **Dingy Skipper** *Erynnis tages*

Food plant – bird's-foot trefoil *lotus corniculatus*

#### Conservation Status

- UK Biodiversity Action Plan: Priority Species
- Butterfly Conservation priority: high
- European threat status: not threatened

This species loves basking on warm sunny ground. In good years at the Hoe it has a partial second generation.

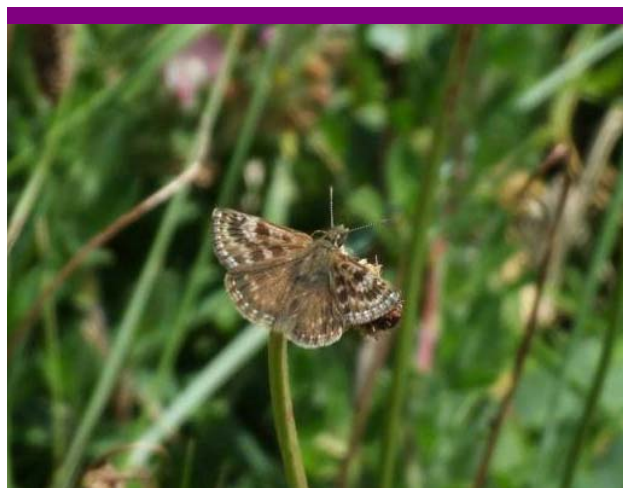
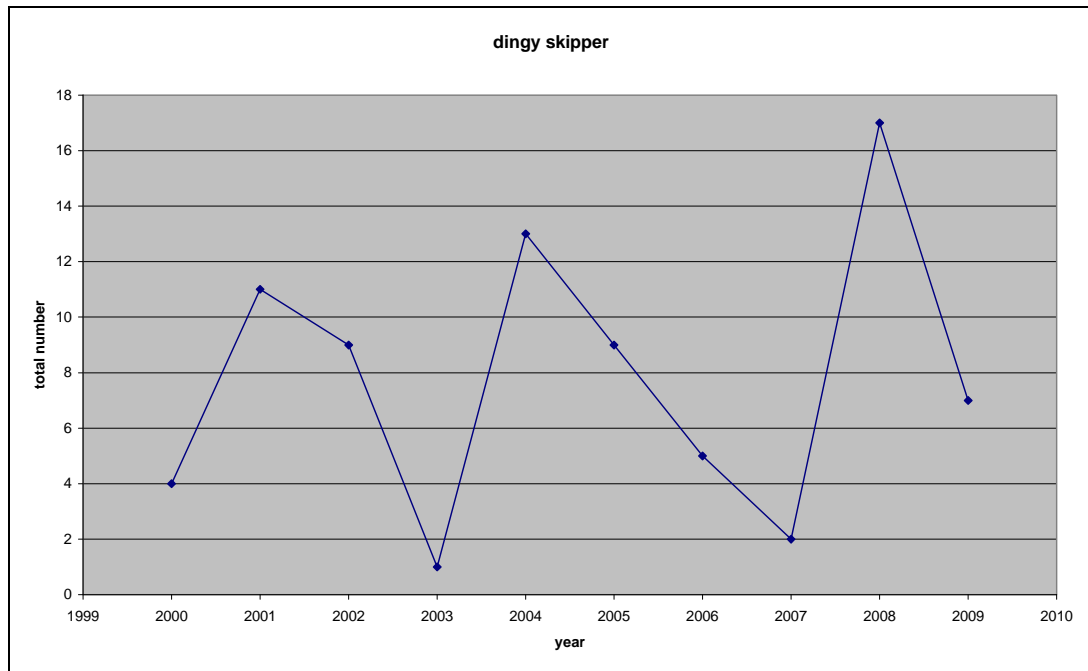


Photo P.Holt



Earliest date	Peak day count	Latest date
18.04.07	12 on 19.05.03	21.08.01

### **Swallowtail** *Papilio machaon*

Food plant - The European form feeds umbellifers such as Wild Carrot *Daucus carota*.

#### Conservation Status

- UK BAP status: Not listed
- Butterfly Conservation priority: medium
- European threat status: not threatened

There was one unconfirmed report of this dramatic species on the Hoe. Another was seen on the cliff top above the site in April 2007.

## Clouded Yellow *Colias croceus*

Food plant – Clover *Trifolium* spp, and Lucerne *Medicago sativa*

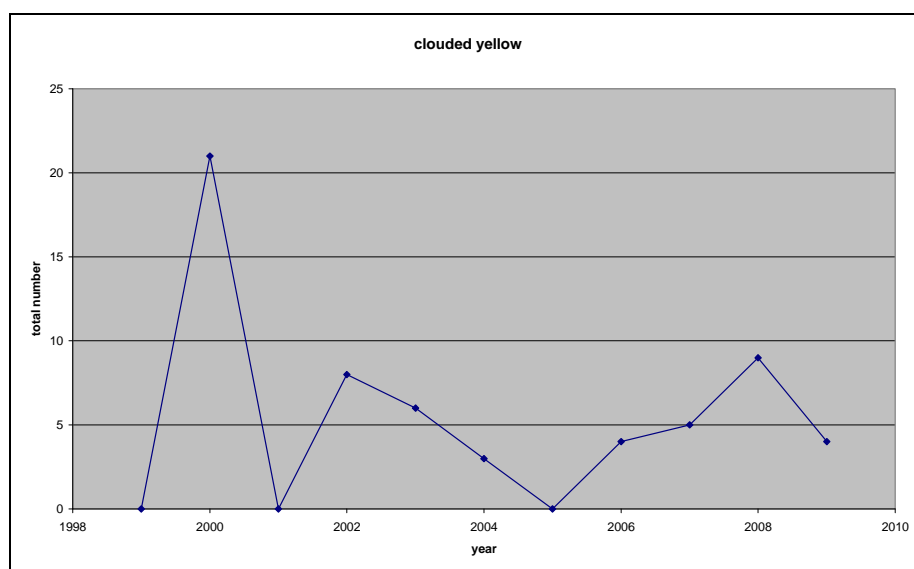
### Conservation Status

- UK BAP status: not assessed
- European threat status: not listed



Photo P.Holt

Clouded yellows are migrant butterflies and the numbers vary greatly from one year to the next. Historically they were thought not to be able to over winter in Britain, but an early sighting on the cliffs above the Hoe on 11 February 1999 and one on the site on 28 March gives an indication they can now do so. The latest record of any butterfly at the Hoe was of a clouded yellow flying weakly in warm sunshine on 17 December 2002.



Earliest date	Peak day count	Latest date
28.03.99	10 on 25.08.06	17.12.00



**Brimstone** *Gonepteryx rhamni*

Food plant – Buckthorn *Rhamnus cathartica*

There are one or two records a year in the areas of scrub along the cliffs.

Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

Earliest date	Peak day count	Latest date
15.03.09	Singles only	30.08.08

**Large White** *Pieris brassicae*

Food plant – Cabbages *Bassicae*

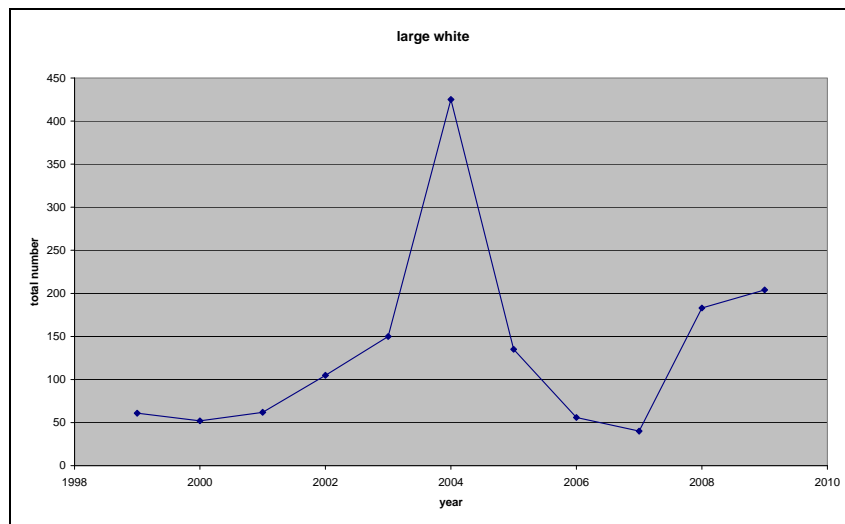
Conservation Status -

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt

This species breeds on the site in particular on the wild cabbage. It can be present in good years in significant numbers. Obvious migration has been observed across the Hoe.



Earliest date	Peak day count	Latest date
21.03.00	169 on 28.07.04	13.10.03

### Small White *Pieris rapae*

Food plant – Cabbages *Bassicae*

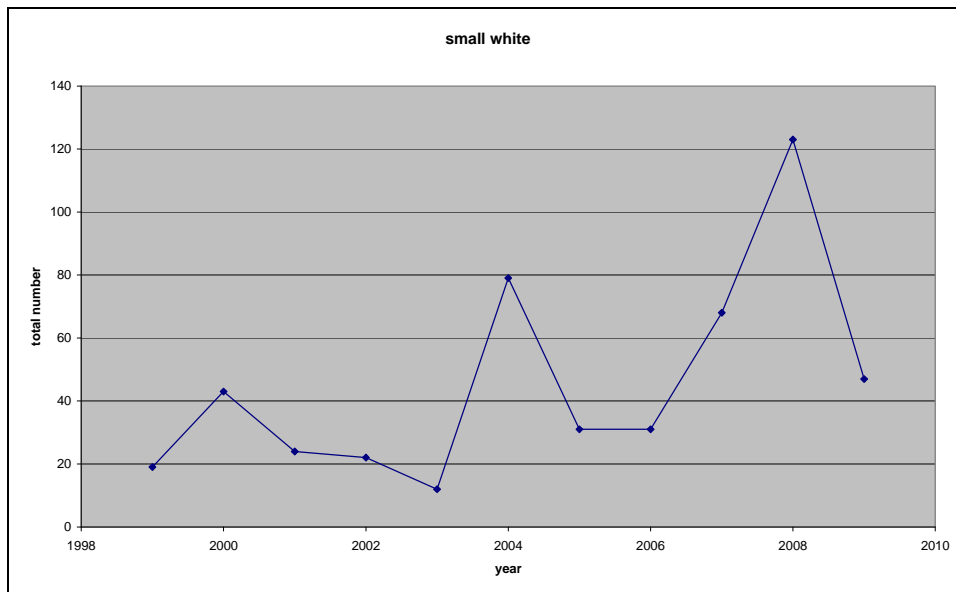
#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo T.Morris

This common butterfly is regularly seen at the Hoe, it is often the first butterfly seen in the year.



Earliest date	Peak day count	Latest date
18.03.09	64 on 05.09.07	29.08.08

### Green-veined White *Pieris napi*

Food plant – A wide range of crucifers including hedge mustard *sisymbrium officinale*, wild mignonette *Reseda lutea*

#### Conservation Status

- Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

This species is probably under recorded due to the difficulty in identifying flying individuals.



Photo P.Holt

Earliest date	Peak day count	Latest date
21.04.05	-	29.08.08

**Orange Tip** *Anthocharis cardamines*

Food plant – Several species of crucifer including Tower Mustard *Arabis glabra*, and Lady's Smock *Cardamine pratensis*.

Conservation Status

- Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo T.Morris

The Spring single generation of Orange Tips is a sign of warmer days to come. They are recorded every year in low numbers often along the base of the cliffs. Females may be under recorded as they can be difficult to separate from the other two small species of white butterfly when seen at a distance.

Earliest date	Peak day count	Latest date
26.03.03	5 on 05.05.99	30.06.00

**Green Hairstreak** *Callophrys rubi*

Food plant – A very wide variety from Birds-Foot-trefoil *Lotus corniculatus* to Bramble *Rubus fruticosus*.

Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: medium
- European threat status: not threatened

This stunning small butterfly has metallic green underside to its wings. When they land they tilt their body to maximise heat absorption from the sun.



Photo P.Holt

Earliest date	Peak day count	Latest date
22.04.09	5 on 03.05.00	08.06.06

### **Small Copper** *Lycaena phlaeas*

Food plant – Sorrel and Docks *Rumex spp*

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

This small attractive butterfly is seen at the Hoe every year in low numbers.



Photo P.Holt



Earliest date	Peak day count	Latest date
22.03.07	4 on 02.05.99	22.09.02

### Small Blue *Cupido minimus*

Food plant – Kidney vetch *Anthyllis vulgaris*

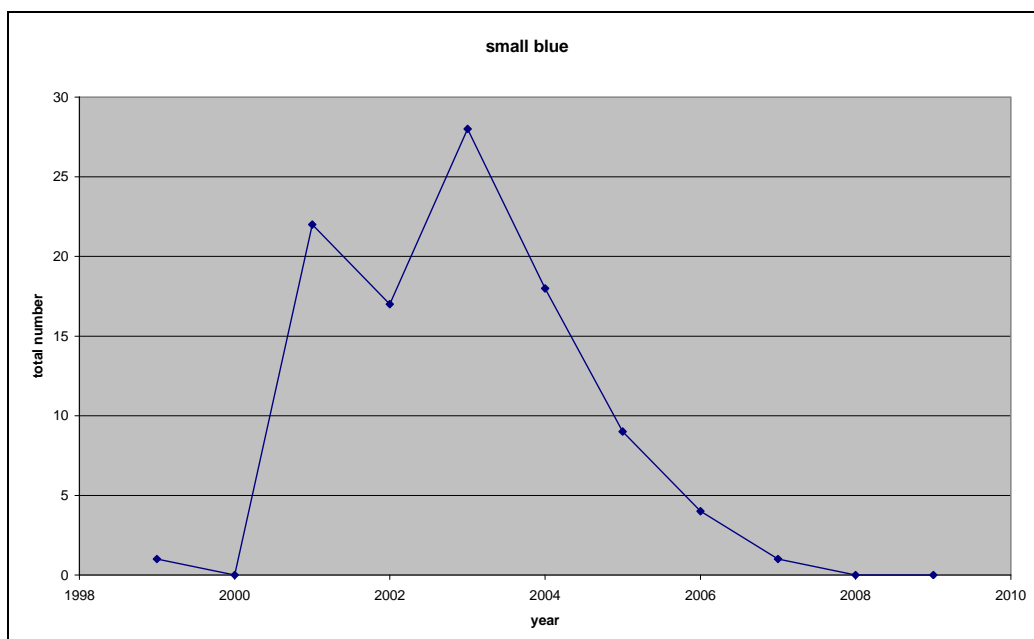
#### Conservation Status

- UK BAP status: Proposed Priority Species
- Butterfly Conservation priority: high
- European threat status: not threatened

This tiny butterfly colonised the Hoe in the early first few years of the survey, with four good years from 2001 onwards. However since then only one or two are seen a year.



Photo P.Holt



Earliest date	Peak day count	Latest date
09.05.99	8 on 11.06.03	26.07.03

**Brown Argus** *Aricia agestis*

Food plant – Common Rock Rose *Helanthemum nummularium* and Stork's and Crane's Bills *Geranium spp*

Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

The main food plant does not grow on the Hoe so the two records are of wandering individuals from the cliffs or perhaps further beyond the site. Singles were seen on 9 September 2008 and 16 June 2009.

**Common Blue** *Polyommatus icarus*

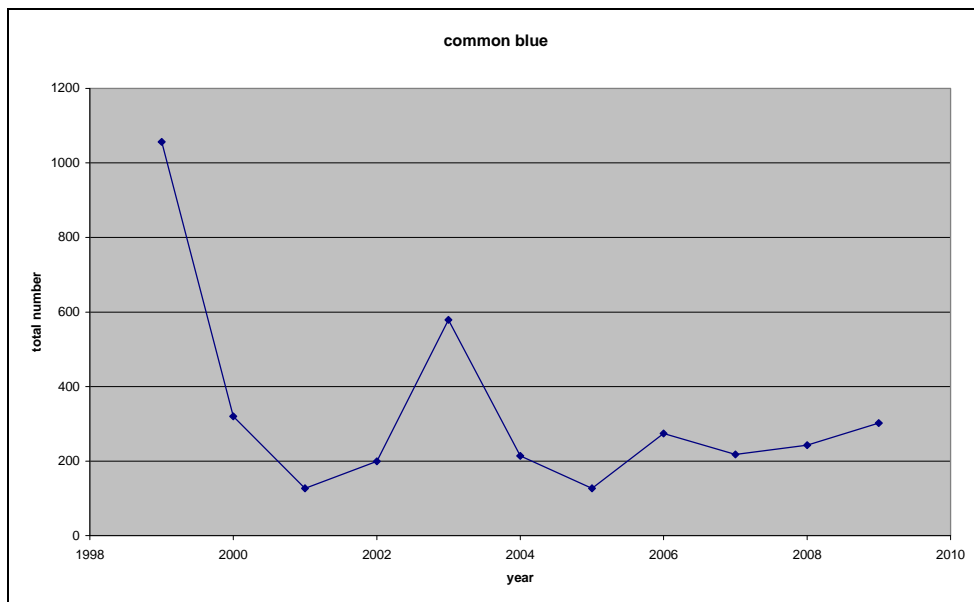
Food plant – The most often used plant is Bird's-foot-trefoil *Lotus corniculatus*

Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
28.04.07	138 on 11.08.09	08.10.00

**Chalk-hill Blue** *Polyommatus (Lysandra) coridon*  
 Food plant – Horseshoe Vetch *Hippocrepis comosa*

#### Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: medium
- European threat status: not threatened



Photo P.Holt

This species has only been recorded on the Hoe twice when single males were seen on 28 July 2006 and 17 August 2006. The food plant does occur on the site but currently only in small amounts. This butterfly is not seen on the cliffs above the Hoe.

**Adonis Blue** *Polyommatus (Lysandra) bellargus*  
Food plant – Horseshoe Vetch *Hippocrepis comosa*

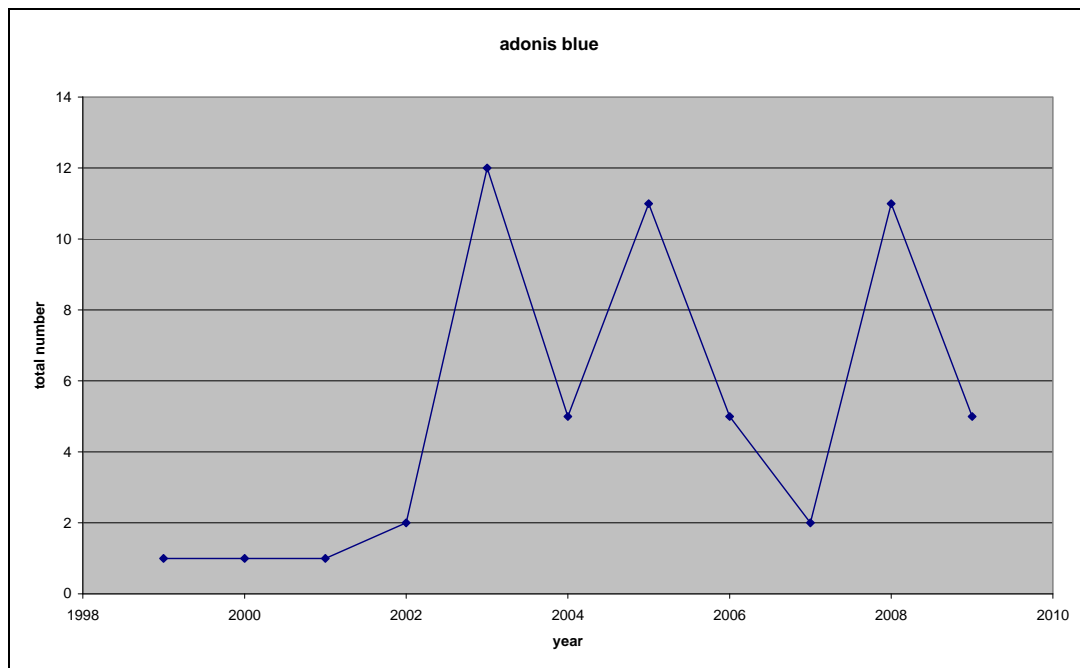
#### Conservation Status

- UK BAP status: Not listed (formerly Priority)
- Butterfly Conservation priority: medium
- European threat status: not threatened

This stunning butterfly is occasionally seen across the site, but it shows a distinct preference for the sheltered areas at the base of the cliff at both the east and west end of the Hoe. The food plant was omitted from the initial seeding of the chalk marl. In November 2001 30 plants were planted out on the Hoe directly opposite a colony of Adonis Blue that occurs on the cliffs.



Photo P.Holt



Earliest date	Peak count	Latest date
06.05.03	6 on 19.05.08	09.09.08

### **Holly Blue** *Celastrina argiolus*

Food plant – Holly *Ilex aquifolium* and Ivy *Hedera helix*

#### Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo T.Morris

This species is seen in low numbers flying over the scrub at the base of the cliffs.



**Red Admiral** *Vanessa atalanta*

Food plant – Common Nettle *Urtica dioica*

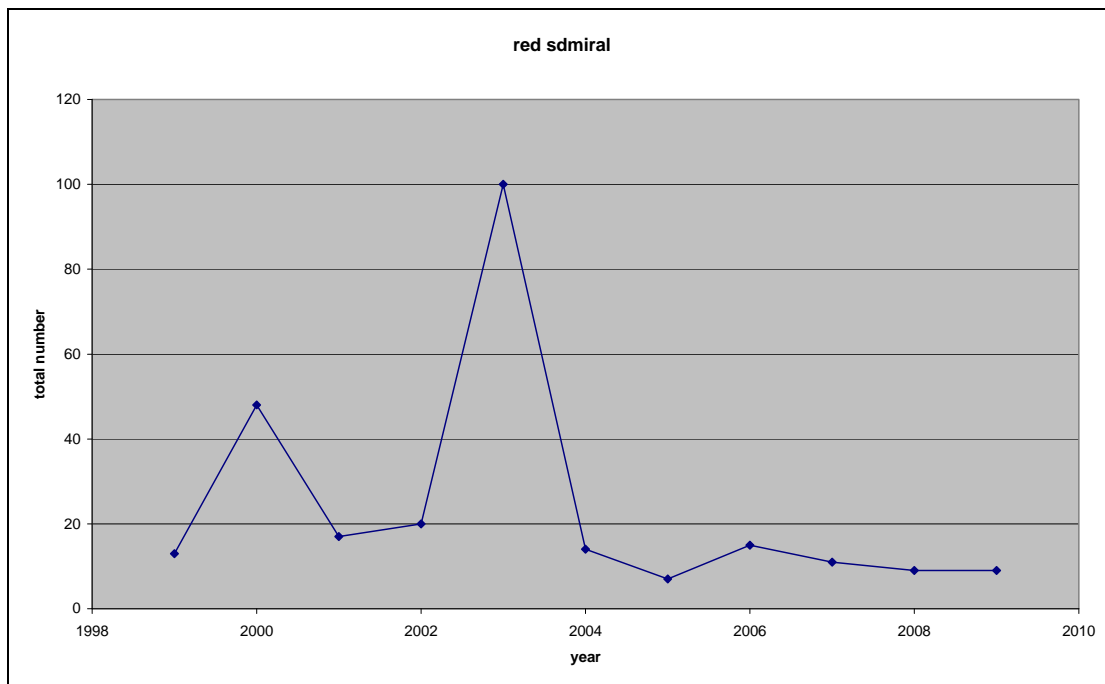
Conservation Status

- UK BAP status: not assessed
- Butterfly Conservation priority: low
- European threat status: not assessed

The food plant does not occur on the Hoe so sightings relate to adults passing through. This is a highly migratory species and has been observed flying in off the sea.



Photo P.Holt



Earliest date	Peak count	Latest date
21.04.07	441 on 29.07.03	14.11.04

### Painted Lady *Vanessa cardui*

Food plant – Thistles *Cirsium spp*

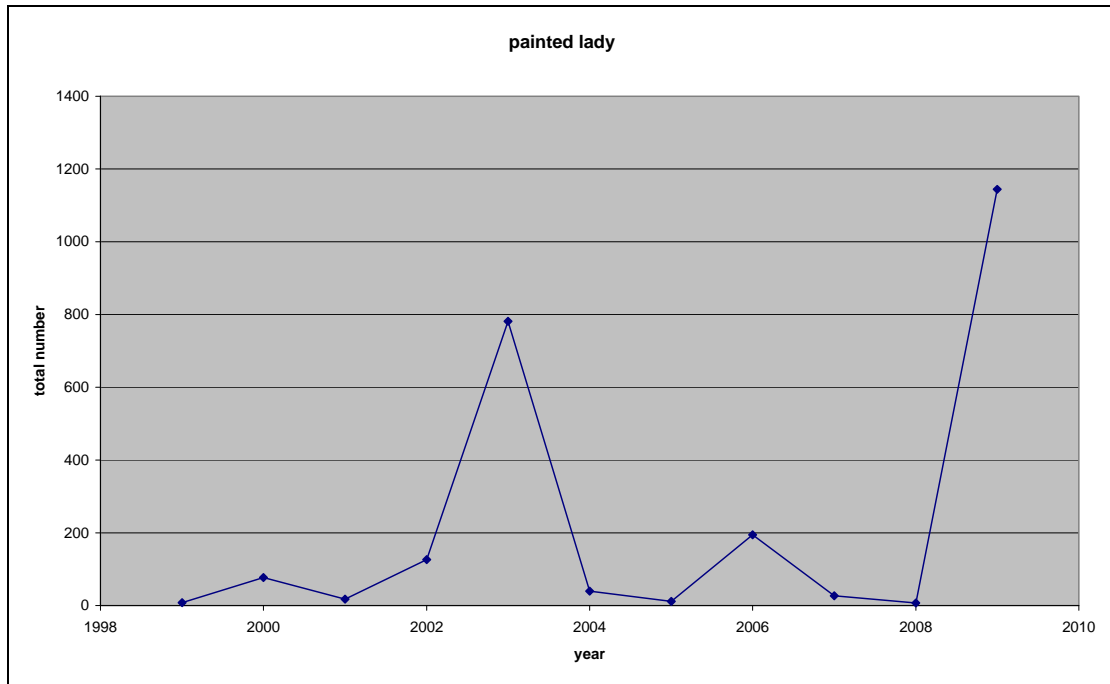
#### Conservation Status

- UK BAP status: not assessed
- Butterfly Conservation priority: low
- European threat status: not assessed

This butterfly has been recorded breeding on the site. It is highly migratory and the arrival in the spring of 2009 was a true wildlife spectacle.



Photo P.Holt



Earliest date	Peak count	Latest date
08.05.06	433 on 29.07.03	22.09.04

### **Small Tortoiseshell** *Aglais urticae*

Food plant – Common Nettle *Urtica dioica*

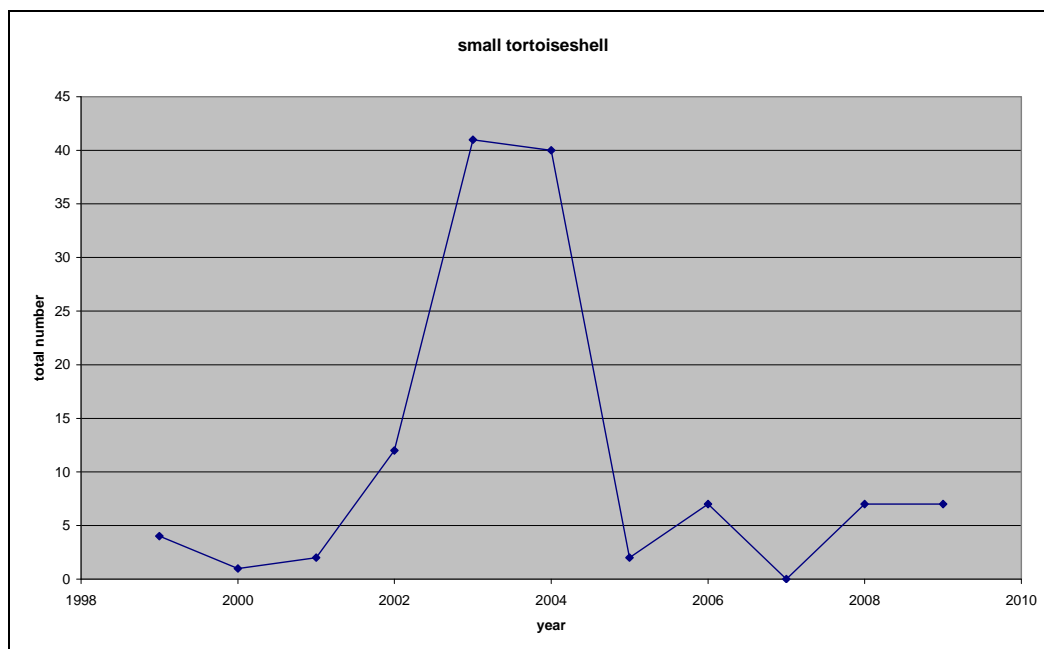
#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low but concern over recent decline
- European threat status: not threatened



Photos P.Holt

Nettles do not grow on the Hoe so this species is a non breeding visitor. Fifteen years ago this species was considered a widespread and common species but sadly numbers have been very low in recent years.



Earliest date	Peak count	Latest date
1.4.05	20 on 29.07.03	28.10.08

### Peacock *Inachis io*

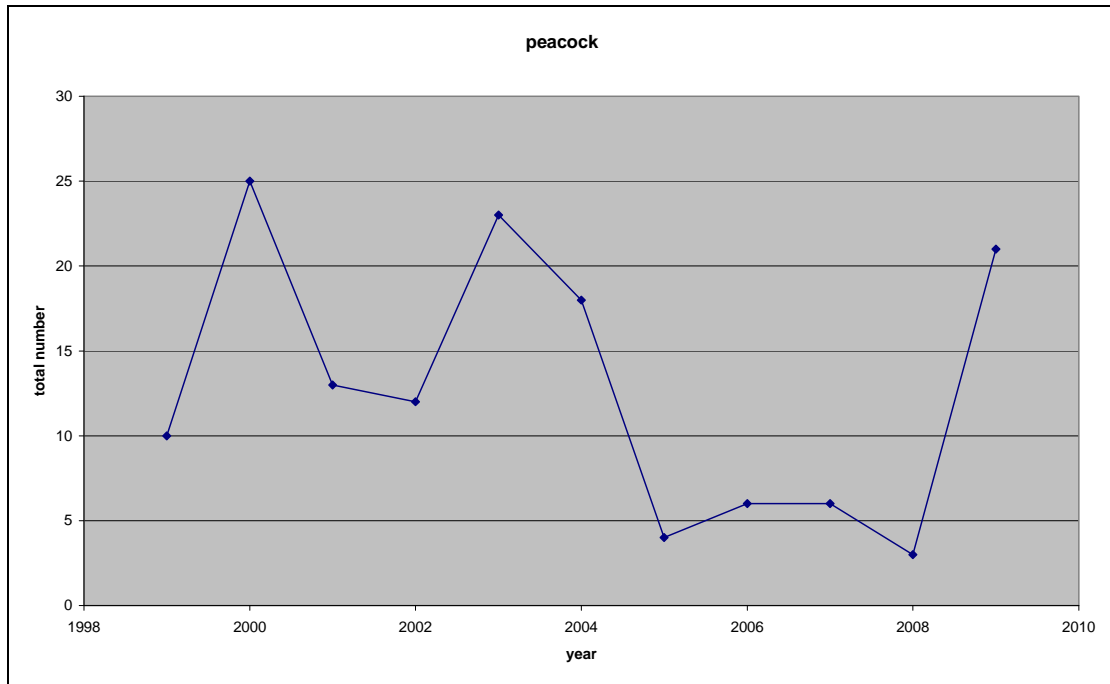
Food plant – Common Nettle *Urtica dioica*

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
04.03.06	18 on 31.08.02	12.11.05

**Comma** *Polygonia c-album*

Food plant – Common Nettle *Urtica dioica*

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

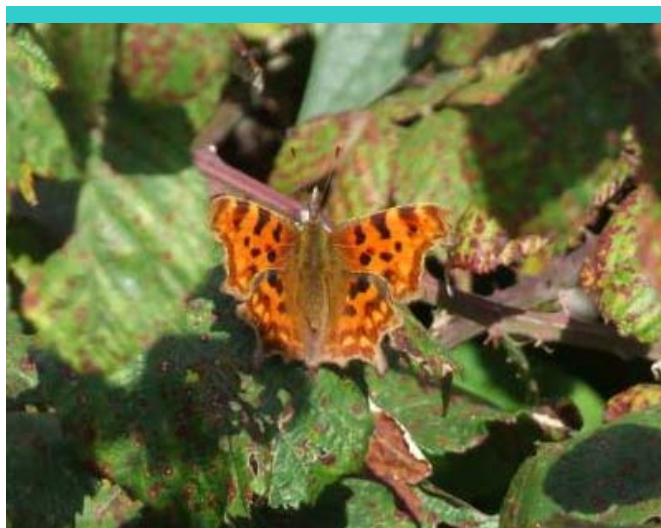


Photo P.Holt

This ragged winged butterfly is seen in very low numbers at the Hoe each year.



**Speckled Wood** *Pararge aegeria*

Food plant – Many types of grass

Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

This species is strongly associated with scrub and woody habitats. There have only been six records.

May	June	July	September	October
1 <sup>st</sup> 2005	18 <sup>th</sup> 2006	25 <sup>th</sup> 1999	22 <sup>nd</sup> 2008	9 <sup>th</sup> 2008



Photo P.Holt

**Wall** *Lasiommata megera*

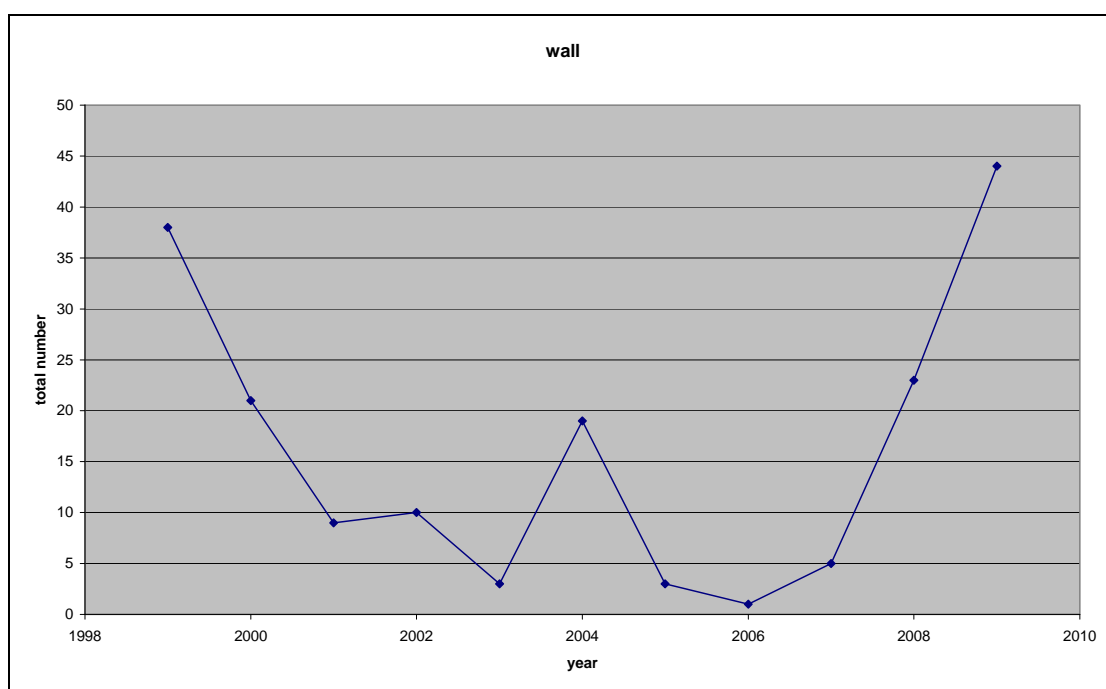
Food plant – many types of grass

Conservation Status

- UK BAP status: Priority Species (for research only)
- Butterfly Conservation priority: high
- European threat status: not threatened



Photo P.Smith



Earliest date	Peak count	Latest date
15.04.07	15 on 11.08.09	18.09.08

## **Marbled White** *Melanargia galathea*

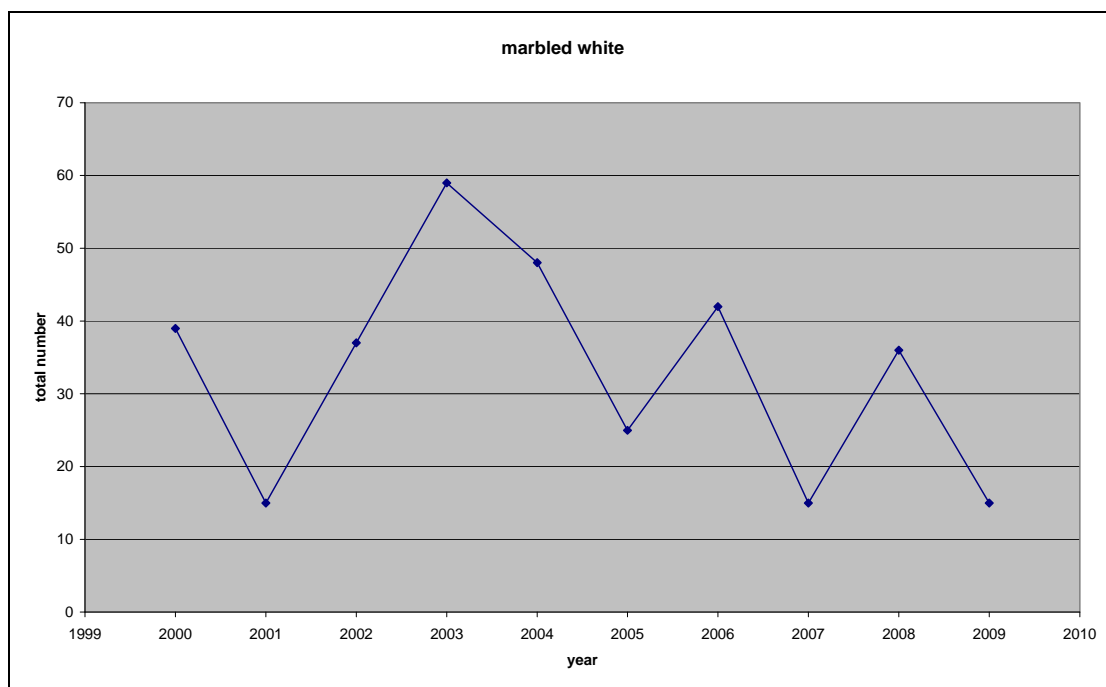
Food plant – many types of grass

### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
18.06.99	39 on 15.07.03	24.08.02

### Gatekeeper *Pyronia tithonus*

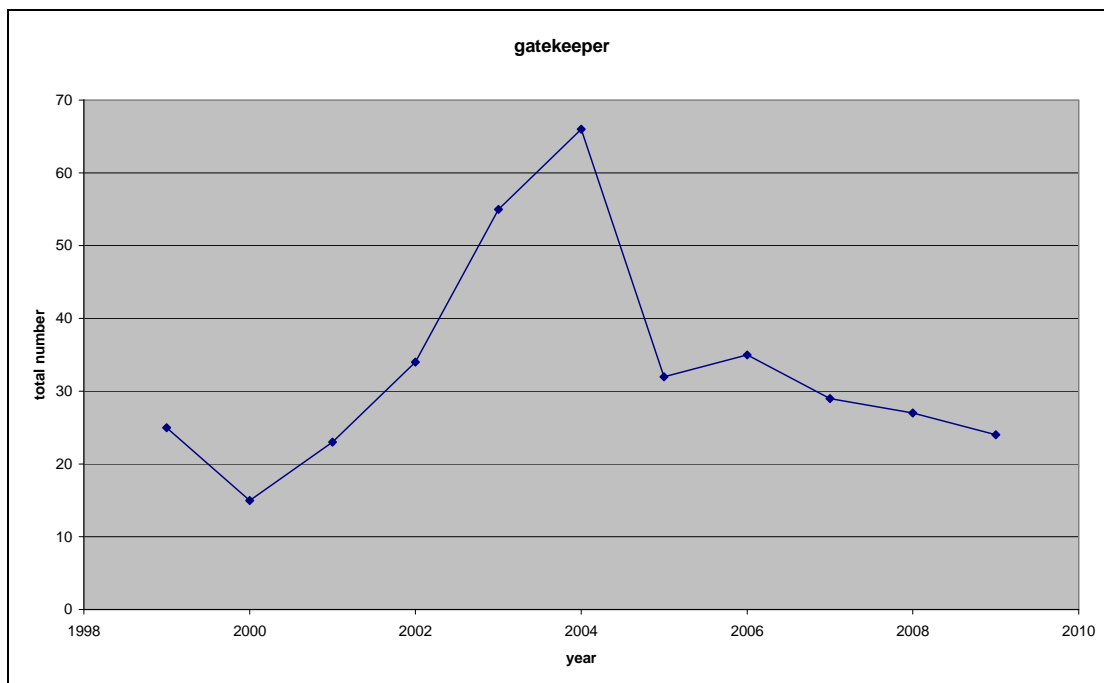
Food plant – Many types of grass in particular *Agrostis* spp

#### Conservation Status

- UK Biodiversity Action Plan: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
12.06.06	32 on 03.08.04	28.08.99

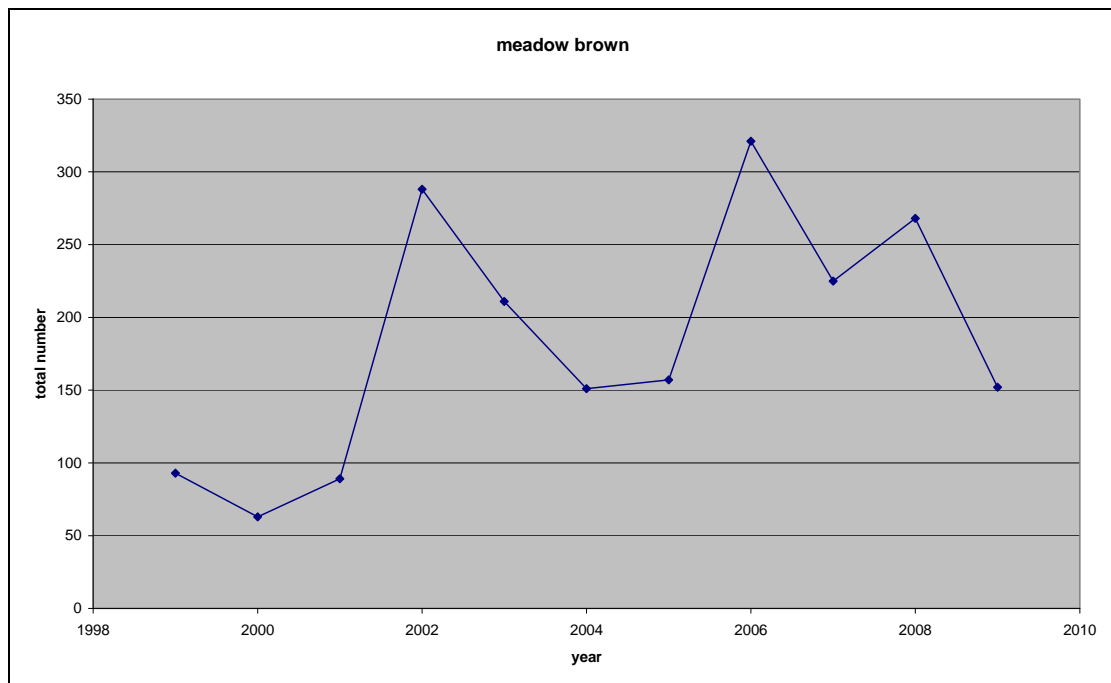
**Meadow Brown** *Maniola jurtina*  
Food plant – Many types of grass

Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
15.06.03	95 on 21.07.08	28.08.99



**Ringlet** *Aphantopus hyperantus*  
Food plant – many types of grass

#### Conservation Status

- UK BAP status: not listed
- Butterfly Conservation priority: low
- European threat status: not threatened

This is a butterfly of tall damp grassland in partial shade. Not the habitat at the Hoe, so not unsurprisingly there is only one record on 29 June 2008.

**Small Heath** *Coenonympha pamphilus*

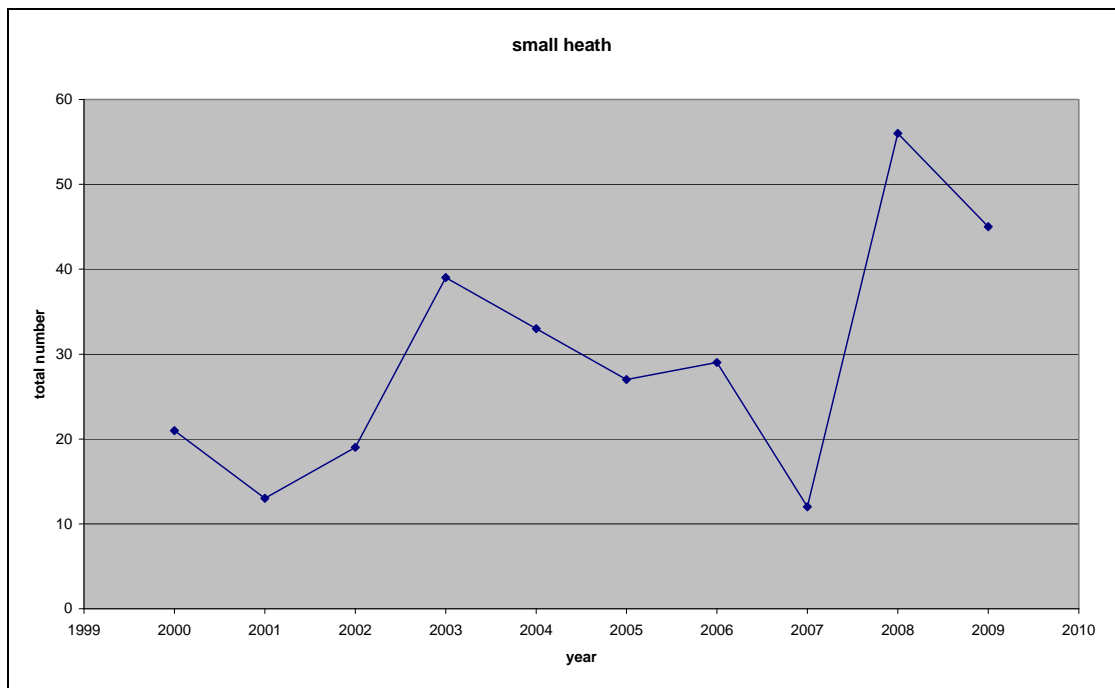
Food plant – Many types of grass in particular *Festuca* and *Poa spp*

#### Conservation Status

- UK BAP status: Priority Species (for research only)
- Butterfly Conservation priority: high
- European threat status: not threatened



Photo P.Holt



Earliest date	Peak count	Latest date
28.04.07	19 on 11.08.09	09.09.03

## MANAGEMENT AND HABITAT CHANGES

From an initial sowing of 31 different types of seed onto the Hoe in 1994, the vegetation has developed with now over 200 species of plant recorded. The vegetation change is best illustrated by the photographs below.

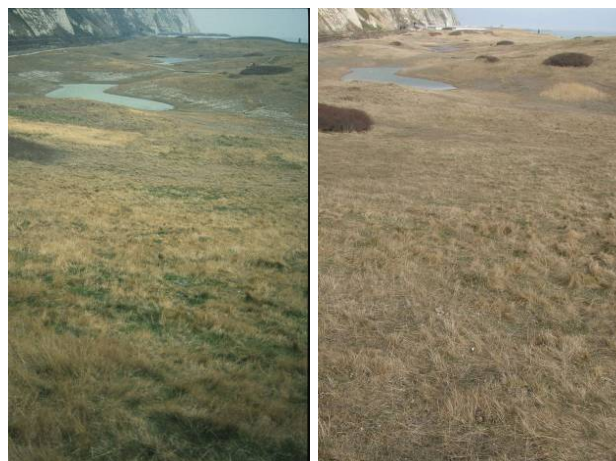
### Winter photo monitoring



Feb 1999

Feb 2001

Feb 2003



Feb 2005

Feb 2009

The photos show the vegetation development from bare and moss dominated in ground with sparse cover of grass in 1999, to almost complete grass cover in 2009.

## Summer Photo monitoring



August 1999



August 2000



August 2002



August 2004



August 2006



August 2008

The summer photo monitoring shows the change from patchy vegetation in 1999 to complete grassy sward in 2008, with what appears to be a reduction in the amount of flowers at this particular point.



Photos P.Holt

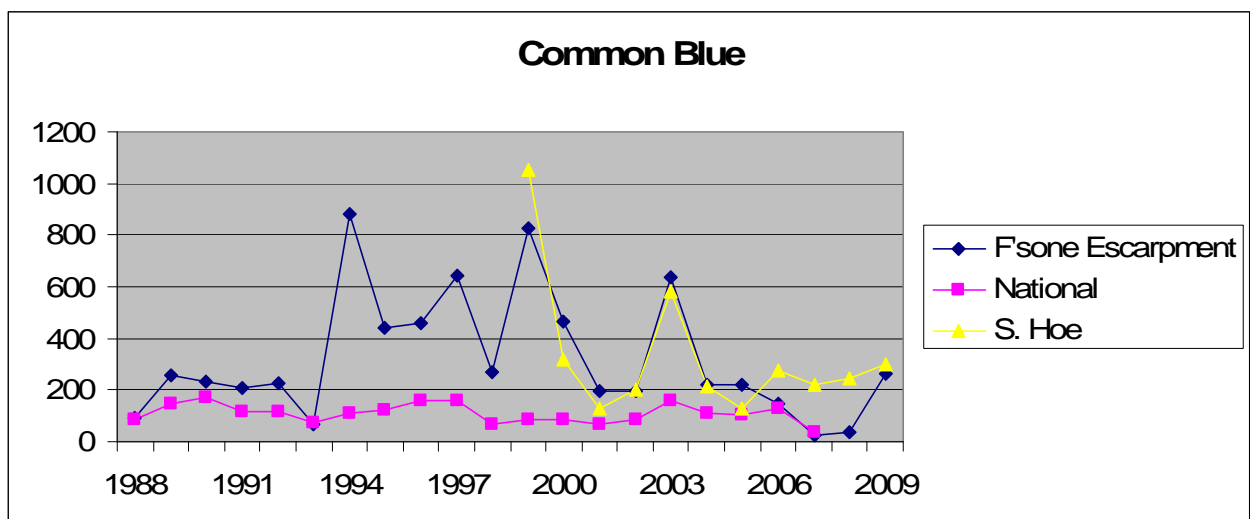


In 2003, sheep grazing was introduced with 10 sheep in small electric fence enclosures this carried on until 2006 when the grazier was changed and the number of sheep was increased to 40. In 2008 the site had external fencing installed and 6 cows were brought in to graze alongside the 40 sheep. The grazing took place between September and March.

## Discussion

The observations of butterflies at the Samphire Hoe have provided a wealth of data, and show that the Hoe has been successfully colonised by a wide variety of species. The suite of species found at the Hoe is typical of Chalk grassland. It is difficult to make firm comment on why the numbers for each species change over time. For the majority of grassland species, the warmer and drier the summer the greater the number of butterflies recorded. But other factors such as changes in habitat, food plant availability and parasitic loading will also affect their numbers.

The over-arching relationship with weather can be seen in the graph for common blue butterflies. The graph shows a comparison between the Folkestone Escarpment (in blue) and Samphire Hoe (in yellow) butterfly transects. It illustrates well the two best summers (in terms of weather) during the survey period were 1999 and 2003; these coincided with peak numbers of common blue. The national data has not been adjusted to illustrate the peaks and troughs over the years so appears as a very flat line.





The photo below, taken in 1997, shows the abundance of bird's foot trefoil around the car park at the Hoe. It has declined in the sward and by 2009 there was almost none in this area. This has been a general trend over the sown areas of the Hoe, and may well be a factor in common blue numbers.



Photo M.Sheperd

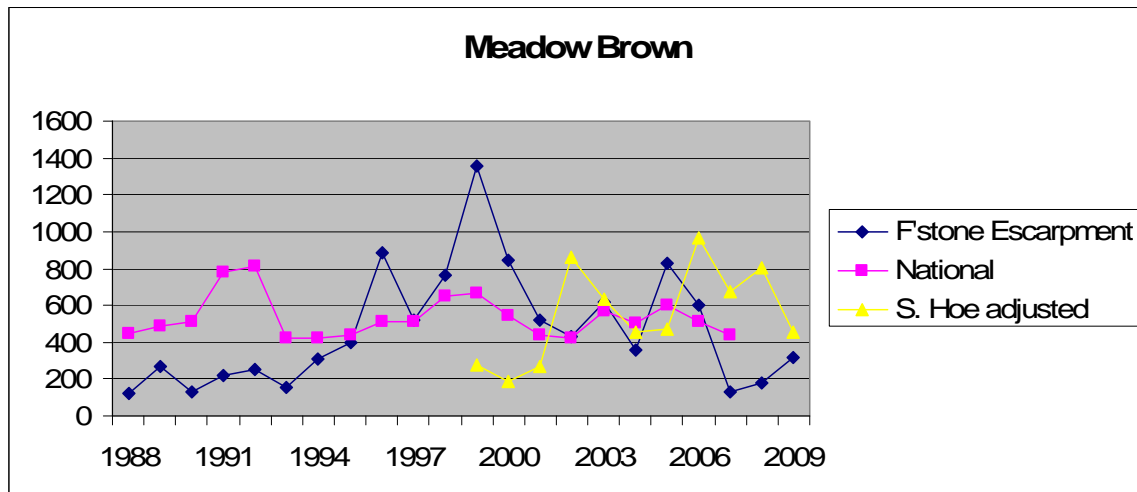
In the early years of the Hoe Kidney Vetch was in super abundance. It was included in the initial seeding of the site and is a plant of early succession, loving bare ground. As the vegetation has developed it has reduced significantly and only a small amount now remains.



Photo P.Holt

The caterpillars of small blue feed solely on kidney vetch flowers. The colonisation of the Hoe began in 1999 reached a peak in number in 2003 and yet by 2008 they had almost disappeared. The reduction in kidney vetch is probably the main reason for the loss of numbers of small blue.

Meadow brown butterflies are a species that show a preference for longer grass, the graph on page 24 shows an increase in numbers, it could be inferred that one of the factors influencing this is the general vegetation development of the Hoe. The graph below puts this increase in a context of the Folkestone escarpment and the national figures. (The Hoe figures have been adjusted so they show on the same scale).



## Conclusion

The Hoe has become an important area for butterflies, with several notable species now occurring. It can be an exciting place to see spectacular migration events, and note the change in habits and distribution of species such as the apparent successful over wintering of clouded yellows and the temporary colony of small blues. It will be very interesting what the next ten years will bring.

## Acknowledgements

Thanks goes to every one who has assisted with observations at the Hoe, in particular to Derek Smith and Phil Smith.

**Paul Holt**  
**September 2010**



**Wall** - Photo P.Smith