

Silver-studded Blue Butterfly Survey
June/July 2018

(Part of Godrevy Warren Site Management Plan 2018)

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Appendix 1: Site survey data

Acknowledgements

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Cover photo of Silver-studded Blue - Shaun Poland

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Summary

1. This survey has confirmed that Godrevy Warren is one of the most important areas for the Silver-studded Blue butterfly in Cornwall and the UK. Sensitive management would contribute to its improvement and long term survival.
2. 6 sites visits were made during the survey period
3. In excess of 5,400 Silver-studded blues were recorded during the survey days and all results are tabulated in Appendix 1.
4. Many new colonies were discovered and the site contained excellent habitat.
5. The butterfly was distributed throughout the site and would contain higher numbers if there was less scrub.
6. Fragmentation of colonies is occurring due to scrub encroachment.
7. This site plays an important part in maintaining the long term viability of the Silver-studded blue in adjacent SSSI's and LNR's. It plays a key role as a link between the St Gothians LNR to the south, the NT land to the north and the coastal sites towards the east towards Hell's Mouth and further.
8. Ant association was recorded on many occasions and one ant species was identified as *Lasius alienus*.
9. Viable links between the site and neighbouring SSSI's and LNR's were identified.



Male silver-studded blue with ants in attendance

1. Introduction

1.1 Aims of survey

This report focuses on mapping the distribution and size of the colonies of the Silver-studded Blue butterfly *Plebejus argus*. This report focuses mainly on the butterfly but it has to be appreciated that the butterfly is regarded as a flagship species for the dune system, which contains a wealth of other wildlife that is not so well-monitored. Potential impacts on the Silver-studded Blue outlined here are very likely to affect other wildlife, and maintaining a healthy population reflects a healthy ecosystem. This report also investigates the importance of the site within whole landscape from Hayle River to the Godrevy Headland.

1.2 Status of the Silver-studded Blue Butterfly

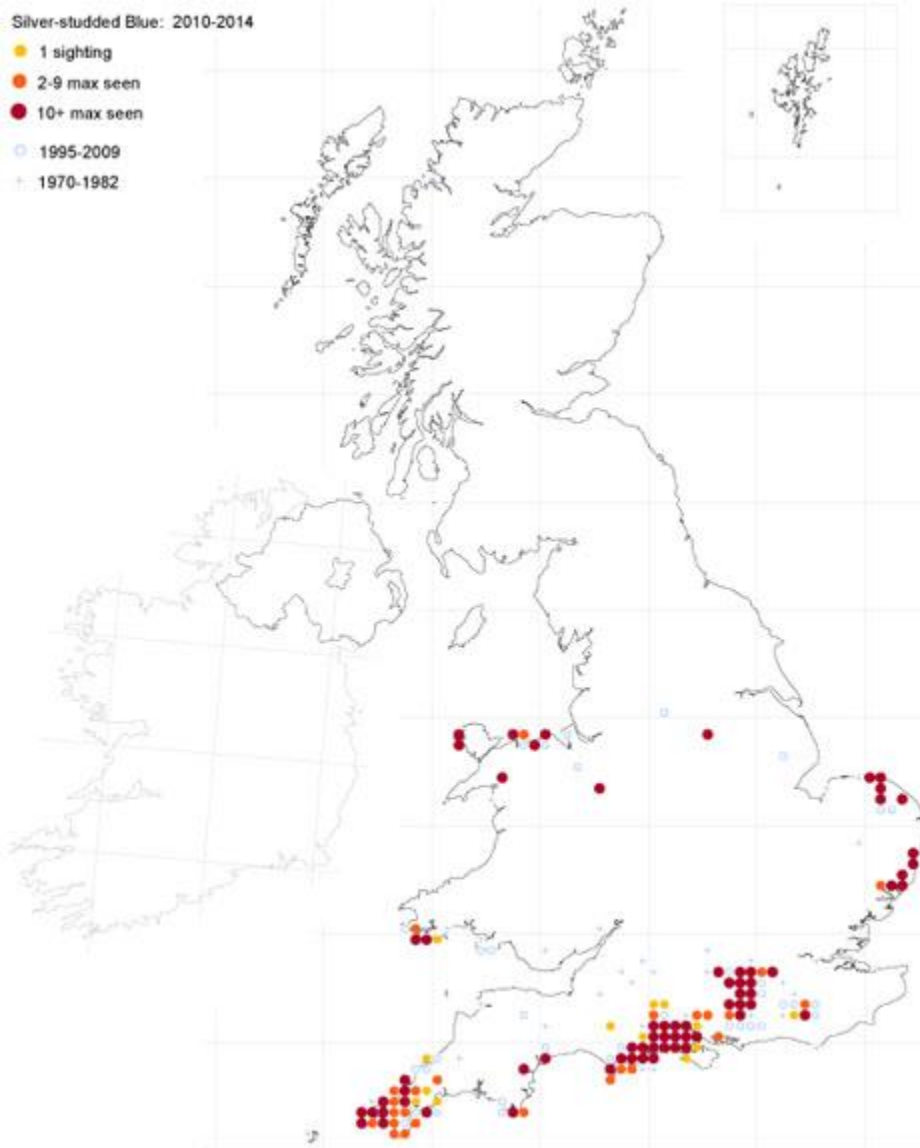
a. Conservation Status

The Silver-studded Blue *Plebejus argus* is a nationally scarce species that is included in the *Guidelines for the selection of Biological Sites of Special Scientific Interest* (NCC 1989) and protected under *Schedule 5 of the Wildlife and Countryside Act 1981* with respect to trade. In addition, the Silver-studded Blue has the following status:

- Section 41 species of principal importance under the NERC Act in England
- Section 42 species of principal importance under the NERC Act in Wales
- Butterfly Conservation: National High Priority 2016; South West Regional Action Plan 2016: High Priority
- GB Red List: Vulnerable
- UK BAP (2007) status: Priority Species
- European status: Not threatened

b. Distribution

- The Silver-studded Blue has declined enormously during the past century because much of its habitat has been destroyed and is now virtually absent from four-fifths of its former range. Its overall decline in range at a 10km square level has been 71% since 1800. Most colonies are found in Southern England, but some colonies are present in Wales, the East of England and on Prees Heath Reserve in Shropshire.
- UK Distribution Trend 1976-2014: -64%(State of UK's Butterflies 2015, Butterfly Conservation)



- It is mainly found in 3 biotopes: lowland heath, calcicolous grassland and sand dunes. In much of the country it lives on heathland and its caterpillars feed on heather.
- However, in Cornwall, as well as a few inland heathland populations, large colonies are found on the sand dunes of the north coast. The Silver-studded Blues on these sand dunes appear to be larger and more brightly coloured than the heathland forms (*P. argus argus*) and are similar to the now extinct *cretaceus* (*P. argus cretaceus*) form which was previously found on calcareous habitats. In North Wales there is another form of the Silver-studded Blue – *carnensis* (*P. argus carnensis*). Ecotypes or races are not afforded special protection. At present there is research into the different ecotypes but the sand dune populations are regarded as unusual and worthy of further research.
- Adults are extremely sedentary and form colonies on discrete patches of habitat. Published research suggests that most adults move less than 50m in their lifetime but a small proportion do disperse and individuals can slowly colonize suitable habitat close by. However, this species is particularly reluctant to cross obstacles and potential breeding areas separated by unsuitable habitat are effectively isolated.

c. Cornwall - Sand dune populations

- On the dunes the caterpillar is thought to feed mainly on Bird's-foot-trefoil and possibly young gorse plants.
- During part of its life cycle it has a highly developed relationship with ants. The black ant (*Lasius* species) protects the caterpillar and the chrysalis from parasites and predators and in return feeds on the sugar-rich solution that both the caterpillar and the chrysalis produce. Caterpillars and chrysalis have been found in ants' nests.
- The ants' habitat is very short turf often close to wild thyme. The female butterfly seeks out ants' nests when choosing a site to lay her eggs. She also finds the wild thyme a good source of nectar.
- In the spring it is possible to see the larvae feeding with ants in attendance. In the summer females can be seen egg-laying, and both sexes roosting on tall Marram grass in the evening.
- The specific requirements of the Silver-studded Blue's life cycle contribute to its highly restricted distribution and mean that it is threatened both by direct habitat loss (development and isolation) and declining habitat quality through inappropriate site management. However, all of these requirements are currently found on the dunes of north Cornwall and that is why it flourishes there.
- No recent studies have examined genetic differentiation of the Cornish coast Silver-studded Blue populations, but this might be worthy of study given that they may have been separated from other populations for several thousand years during the Holocene. Conserving ecologically distinct populations and maintaining genetic variation below the level of taxonomic species is critical to an effective conservation programme for the species, and the Cornish ecotypes are considered important and should be conserved. (Pers. Comm Roger Dennis & Dr Dan Hoare)

2. Methodology

2.2 Over 6 days the whole site was covered and all sightings of Silver-studded blues were recorded using a GPS. All data was then entered into the ERICA database and a distribution map was produced. All other butterfly species were recorded. In addition possible corridors linking the site with other areas of wildlife importance were investigated.

2.2 Definitions of terms

- **Colony.** For the purpose of this report, a colony has been defined as a group of individuals that occupies a discrete patch of habitat apparently separated from other groups of the same species. An area of unsuitable habitat or distance may restrict the free exchange of individuals within the colony with other colonies and in such cases the colony will become isolated or fragmented.
- **Metapopulation.** Several discrete colonies in close proximity that are interconnected by movement of individuals.

3. Results

3.1 Weather conditions.

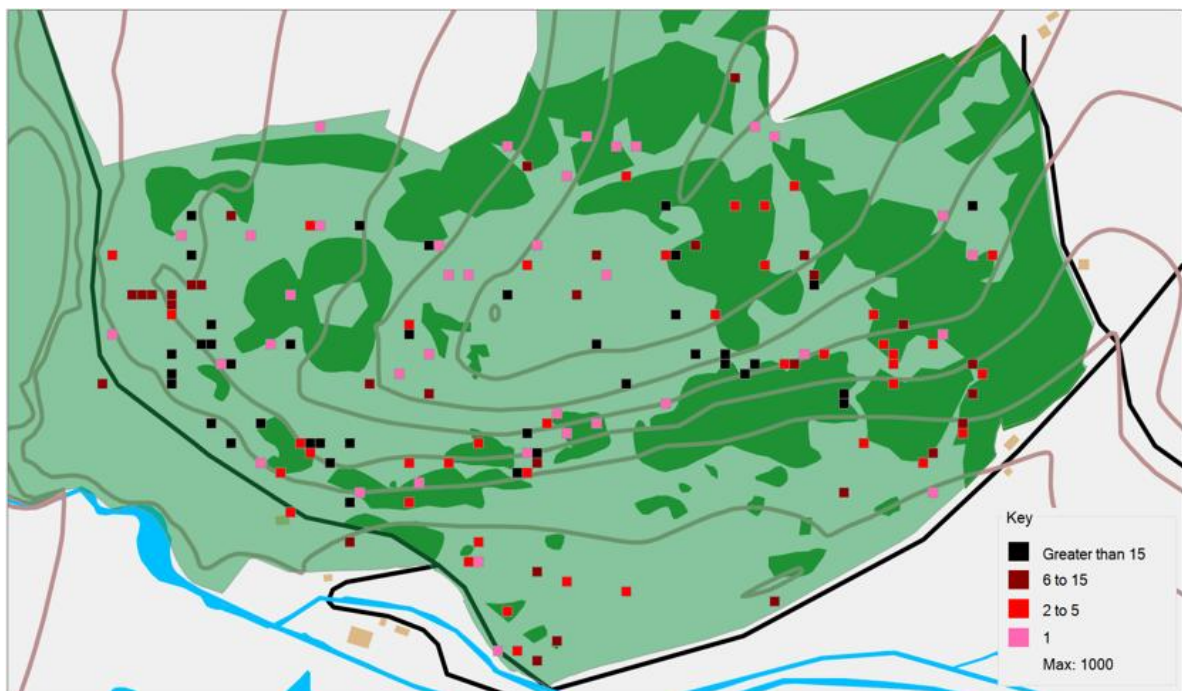
The weather during the survey period was on the whole very good and all sites were visited in good weather conditions apart from one day. As this butterfly roosts in vegetation close to the breeding areas it is still possible to make an accurate estimate of population size of a colony.

3.2 Flight period

By checking with the local transect walker at Upton Towans it was estimated that all surveys were carried out close to the peak of the flight period.

3.3 Map of colonies

The map below indicates the Silver-studded Blue colonies and gives an indication of the hotspots. The darker green indicates scrub and this map highlights the potential for fragmentation and thereby the need to clear scrub. A full list of colonies and numbers is provided in Appendix 1.



The favoured habitats were those with a SW, S, SW aspect. The butterfly was distributed throughout the site. In addition to the main south facing slope (See Photo 1,2, 3a & 3b) there were other important hotspots especially on the slopes and areas in the SW (Photo 4) of the site as indicated on the map. The survey also revealed that the large hollows present throughout the site contained large colonies of the butterfly (See photo 5). The key feature is habitat that has good exposure to sun which enables the associated ant to thrive. The area to the NE of the site contained lower levels of the butterfly and this is mainly due to lack of preferred habitat. In these areas the vegetation community was dominated by different plants such as Heath Grass and much fewer ants were detected- (see Photo 6). Areas in the flat area close to the main road in the SE corner contained very little suitable habitat for the butterfly but contained important semi-unimproved grassland and other species of butterflies were recorded including the Small Heath which is a BAP species – see photos 7 & 8. Due to

lack of grazing this area is declining in suitability for the Small Heath and this species would benefit from a return of cattle grazing



Photo 1 – Main south facing slope



Photo 2 - South facing slope



Photo 3a - South facing slope



Photo 3b - South facing slope



Photo 4 – SW facing slope in the western part of the site



Photo 5 – large hollow in the western part of the site.



Photo 6 – NE area of the site



Photos 7 & 8 - Flat area adjacent to main road in the SE corner of the site

3.4 Ant Association

The butterfly has a highly developed relationship with the Common Black Ant. A warm microclimate is essential. Photo 9 below is typical excellent habitat. During the survey on several occasions ants were found to be in attendance with the adult butterflies. This included mating pairs and single species. Photo 10 shows a newly emerged male Silver-studded Blue still with *Lasius alienus* in attendance.



Photo 9 – excellent habitat



Photo 10 – ants in attendance to a newly emerged male

3.5 Scrub and Marram Grass

In addition to the butterfly's dependence on the ant, it also **does** require areas to roost. It is essential that a site does provide some vegetation that provides shelter from the wind and an area to roost. Marram grass can provide important areas for roosting but in addition plants such as gorse, bramble and privet provide these needs. In addition, scrub also provide an important nectar source. Scrub may also be important for other species such as small mammals and birds. A balance needs to be sought which provides these needs but does not damage the ecosystem and cause the loss of important dune species and fragments the butterfly's metapopulation. During the survey it was apparent that the butterfly population was at risk from severe scrub encroachment. It was also found that the large areas of Marram Grass at the top of the main south facing slope was creating a barrier between colonies of the butterfly.

Example of Marram Grass providing a roosting area:



Photo 11 - Marram Grass providing important habitat for roosting

Scrub.

Photos below are examples of scrub encroachment and areas of too much Marram Grass.



Photo 12 – large areas of Marram Grass



Photo 13 Scrub encroachment



Photo 14- severe scrub encroachment in the central area of the site



Photo 15 Scrub encroachment on south facing slop

3.5 Links to other metapopulations

During the survey, possible corridors linking the site with other areas of wildlife importance which also contain large colonies of the Silver-studded blue butterfly was investigated.

3.6.1 South to Hayle Dune System

The best potential link with St Gothian Sands LNR and the Gwithian Towans was identified close to the Red River bridge – see photo 16. This link is from the southern end of the Warren and along a corridor parallel to the lagoons and the main road.

The link parallel with the sea was found to be unsuitable due to lack of suitable habitat and flooding – see photo 17 and 18



Photo 16



Photo 17



Photo 18

3.6.2 North to Godrevy Headland

On May 31st the possible links to other populations was investigated. The narrow corridor of semi-unimproved grassland that links Godrevy Farm to the Warren appears not to be suitable as there was little ant activity and suitable habitat. The most viable link to Godrevy headland which contains an important colony would be from the NE of the site. Photo 19 illustrates this potential link.



Photo 19 -Northern link

4. Discussion

It is a special experience to walk through a beautiful dune grassland site early in a sunny June morning with dew still on the ground and within two or three minutes count in excess of 500 Silver-studded Blue butterflies. Many of these iconic butterflies were emerging from their pupal stage and large numbers were mating with ants still in attendance. It could be easy to take these numbers for granted but compared to many sites in the UK it must be recognized that the dunes of Cornwall are extremely important nationally and further work will endeavour to establish how the numbers on the Cornish sites compare to the other main populations in the UK. A rough estimate using data from the UK Butterfly Monitoring Scheme, *The Millennium Atlas of Butterflies in Britain and Ireland* : Asher J., Cornwall Butterfly Conservation records and the *2017 Cornwall Silver-studded Blue SpeciesNet report* would rate the dunes to be one of the top ecosystems in the UK, but further research is required to confirm this.

At a time when there is concern that our invertebrates are declining it is important to understand further why these butterflies are surviving in good numbers and all measures need to be taken to support their long-term survival.

5. Recommendations and further work

Management recommendations are listed in the main report

6. References.

State of UK's Butterflies 2015, Butterfly Conservation
South West Regional Action Plan 2016, Butterfly Conservation
2017 Silver-studded Blue Butterfly SpeciesNet Report: Sally Foster
A Cornwall Butterfly Atlas, Wacher, J., Worth J., Spalding A
The Millennium Atlas of Butterflies in Britain and Ireland : Asher J.
The State of British Butterflies: Butterfly Conservation.

Appendix 1.

Table 1 – Species list

Common name	Full grid ref.	Location	Date	Notes	Number
Silver-studded Blue	SW5835942416	GODREVY	10/Jun/2018	SW FACING SLOPE	5+
Silver-studded Blue	SW5837242512	GODREVY	10/Jun/2018	SMALL COLONY. ONE FEMALE	16
Silver-studded Blue	SW5841442369	GODREVY	10/Jun/2018	GOOD COLONY	60
Silver-studded Blue	SW5845342387	GODREVY	10/Jun/2018		1
Silver-studded Blue	SW5839542385	GODREVY	10/Jun/2018		18
Silver-studded Blue	SW5872842483	GODREVY	10/Jun/2018		1
Silver-studded Blue	SW5871542460	GODREVY	10/Jun/2018	SMALL SLOPE	3
Silver-studded Blue	SW5859642392	GODREVY	10/Jun/2018	V GOOD COLONY. URGENT SCRUB REMOVAL REQUIRED	200
Silver-studded Blue	SW5839142402	GODREVY	10/Jun/2018	SSW FACING SLOPE OPP LIFEGUARD HUT	25
Silver-studded Blue	SW5859942408	GODREVY	10/Jun/2018	AREA BECOMING OVERGROWN	2
Silver-studded Blue	SW5831842435	GODREVY	10/Jun/2018		12
Silver-studded Blue	SW5835242423	GODREVY	10/Jun/2018	CONTINUOUS GOOD S-S BLUE HABITAT	15
Silver-studded Blue	SW5835842433	GODREVY	10/Jun/2018	CONTINUOUS GOOD S-S BLUE HABITAT	15
Silver-studded Blue	SW5837742440	GODREVY	10/Jun/2018	GOOD S-S B HABITAT	8
Silver-studded Blue	SW5838942448	GODREVY	10/Jun/2018	GOOD S-S B HABITAT	12
Silver-studded Blue	SW5843342490	GODREVY	10/Jun/2018	SMALL COLONY	1
Silver-studded Blue	SW5847442434	GODREVY	13/Jun/2018	GRAZING REQUIRED	1
Silver-studded Blue	SW5869342434	GODREVY	10/Jun/2018	SMALL HOLLOW OPP GOGREVY FARM	25
Silver-studded Blue	SW5841842286	GODREVY	13/Jun/2018	OPPOSITE NT HUT. LARGE COLONY	300
Silver-studded Blue	SW5853942226	GODREVY	13/Jun/2018		500
Silver-studded	SW5833442433	GODREVY	13/Jun/2018	GOOD SLOPE	15

Common name	Full grid ref.	Location	Date	Notes	Number
Blue					
Silver-studded Blue	SW5832142434	GODREVY	13/Jun/2018	SMALL COLONY	10
Silver-studded Blue	SW5838742387	GODREVY	13/Jun/2018	GOOD COLONY	210
Silver-studded Blue	SW5838742387	GODREVY	13/Jun/2018	GOOD COLONY FACING S/SW	35
Silver-studded Blue	SW5835342378	GODREVY	13/Jun/2018	SLOPE LOOKING TOWARDS MUSSELL ROCK	33
Silver-studded Blue	SW5847942387	GODREVY	10/Jun/2018	V GOOD COLONY WHERE A CATERPILLAR WAS FOUND IN 2017	180
Silver-studded Blue	SW5835142351	GODREVY	13/Jun/2018	GOOD HABITAT TILL GATE	30
Silver-studded Blue	SW5836142499	GODREVY	10/Jun/2018	GRAZING REQUIRED. POTENTIAL HABITAT	1
Silver-studded Blue	SW58394230	GODREVY	13/Jun/2018	OPP CAR PARK. SCRUB REMOVAL REQUIRED	17
Silver-studded Blue	SW5853942227	GODREVY	13/Jun/2018	EXCELLENT COLONY	500
Silver-studded Blue	SW5853842186	GODREVY	13/Jun/2018		12
Silver-studded Blue	SW5885442328	GODREVY	10/Jun/2018	V GOOD HABITAT	
Silver-studded Blue	SW5881842347	GODREVY	10/Jun/2018	STRAT OF LARGE COLONY	130
Silver-studded Blue	SW5876942433	GODREVY	10/Jun/2018	TOP OF MAIN S FACING SLOPE	13
Silver-studded Blue	SW5879742453	GODREVY	10/Jun/2018		1
Silver-studded Blue	SW5835142349	GODREVY	13/Jun/2018		30
Common Blue Butterfly	SW5916642363	GODREVY	9/Jun/2018		2
Silver-studded Blue	SW5841342514	GODREVY	10/Jun/2018	S FACING SLOPE	12
Small Heath	SW5915342309	GODREVY	9/Jun/2018		
Common Blue Butterfly	SW5915342309	GODREVY	9/Jun/2018		2
Large Skipper	SW5915342309	GODREVY	9/Jun/2018		
Large White Butterfly	SW5915342309	GODREVY	9/Jun/2018		1
Meadow Brown	SW5915342309	GODREVY	9/Jun/2018		

Common name	Full grid ref.	Location	Date	Notes	Number
Butterfly					
Silver-studded Blue	SW5905542288	GODREVY	9/Jun/2018		3
Silver-studded Blue	SW5916642363	GODREVY	9/Jun/2018		7
Common Blue Butterfly	SW5905542288	GODREVY	9/Jun/2018		
Red Admiral	SW59124223	GODREVY	9/Jun/2018		
Large Skipper	SW59124223	GODREVY	9/Jun/2018		
Silver-studded Blue	SW59124223	GODREVY	9/Jun/2018		1
Small Tortoiseshell	SW58934217	GODREVY	9/Jun/2018		
Common Blue Butterfly	SW5893342166	GODREVY	9/Jun/2018		6
Large Skipper	SW5893342166	GODREVY	9/Jun/2018		2
Silver-studded Blue	SW5892842656	GODREVY	14/Jun/2018		4
Silver-studded Blue	SW5916042331	GODREVY	9/Jun/2018		8
Silver-studded Blue	SW5896542593	GODREVY	9/Jun/2018	CLOSE TO MEDIEVAL MANOR AND GATE	1
Silver-studded Blue	SW5829542390	GODREVY	10/Jun/2018	HABITAT OK NEEDS A LITTLE GRAZING	1
Silver-studded Blue	SW5850242501	GODREVY	9/Jun/2018	COLONY CLOSEST TO PERIMETER IN NW SECTOR	1
Silver-studded Blue	SW5829042470	GODREVY	9/Jun/2018	FURTHEST COLONY IN NW SECTOR	4
Silver-studded Blue	SW5861342486	GODREVY	9/Jun/2018	BEST COLONY CLOSE TO THE NORTHERN PERIMETER FENCE. HABIT VERY GOOD.	105
Silver-studded Blue	SW5875642556	GODREVY	9/Jun/2018		1
Silver-studded Blue	SW5881642553	GODREVY	9/Jun/2018	WEST FACING ASPECT TO SEA.. SCRUB ALONG FENCE ALL THE WAY DOWN THE SLOPE.	3
Silver-studded Blue	SW5915342309	GODREVY	9/Jun/2018		8
Silver-studded Blue	SW5894242601	GODREVY	9/Jun/2018	CLOSE TO BARBED WIRE FENCE	1
Silver-studded	SW5849742502	GODREVY	13/Jun/2018	SMALL ISOLATED	5

Common name	Full grid ref.	Location	Date	Notes	Number
Blue				COLONY VEGETATION DENSER THAN GOOD COLONIES	
Silver-studded Blue	SW5898442541	GODREVY	9/Jun/2018	HIGH POINT GORSE AND HEATH GRASS	2
Silver-studded Blue	SW5899742472	GODREVY	9/Jun/2018	GORSE ENCROACHMENT AND HEATH GRASS	6
Silver-studded Blue	SW5900242450	GODREVY	9/Jun/2018	SOME GOOD S-S B HABITAT	8
Speckled Wood Butterfly	SW5907442387	GODREVY	9/Jun/2018		
Silver-studded Blue	SW5907442387	GODREVY	9/Jun/2018	SCRUB ENCROACHING	4
Silver-studded Blue	SW5903842338	GODREVY	9/Jun/2018		20
Large Skipper	SW5905542288	GODREVY	9/Jun/2018		
Silver-studded Blue	SW5880342588	GODREVY	9/Jun/2018	WEST FACING ASPECT TO SEA.. SCRUB ALONG FENCE ALL THE WAY DOWN THE SLOPE.	1
Large Skipper	SW590422	GODREVY TOWANS	4/Jun/2018		2
Common Blue Butterfly	SW592427	PENCOBBEN	31/May/2018		1
Small White Butterfly	SW5842	GODREVY TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	
Painted Lady Butterfly	SW5842	GODREVY TOWANS	6/Jun/2018		2
Small Heath	SW5842	GODREVY TOWANS	6/Jun/2018		5
Common Blue Butterfly	SW5842	GODREVY TOWANS	6/Jun/2018		25
Small White Wave	SW5842	GODREVY TOWANS	6/Jun/2018		1
Large Skipper	SW5842	GODREVY TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	
Silver-studded Blue	SW5821641240	GODREVY	4/Jun/2018		1
Red Admiral	SW5842	GODREVY TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY-	2

Common name	Full grid ref.	Location	Date	Notes	Number
				BUTTERFLY LIST OF OTHER SPECIES SEEN	
Cinnabar Moth	SW588421	GODREVV TOWANS	4/Jun/2018		10
Common Blue Butterfly	SW588421	GODREVV TOWANS	4/Jun/2018		3
Common Blue Butterfly	SW587425	GODREVV TOWANS	31/May/2018		2
Fox	SW587425	GODREVV TOWANS	31/May/2018		1
Large White Butterfly	SW591430	THE KNAVOCKS	31/May/2018		2
Skylark	SW591430	THE KNAVOCKS	31/May/2018		2
Silver-studded Blue	SW5837742470	GODREVV	13/Jun/2018	SMALL COLONY. GRAZING REQUIRED IN THIS AREA PLUS MAJOR SCRUB REMOVAL	25
Cinnabar Moth	SW5842	GODREVV TOWANS	6/Jun/2018		30
Silver-studded Blue	SW58054313	GODREVV POINT	23/Jun/2018		2
Silver-studded Blue	SW58284234	GODREVV	13/Jun/2018		6
Silver-studded Blue	SW58474221	GODREVV	13/Jun/2018		3
Common Blue Butterfly	SW5872742151	GODREVV TOWANS	9/Jun/2018		1
Silver-studded Blue	SW5872742151	GODREVV TOWANS	9/Jun/2018		7
Small White Butterfly	SW5872742151	GODREVV TOWANS	9/Jun/2018		1
Silver-studded Blue	SW5866142165	GODREVV TOWANS	9/Jun/2018		1
Small White Butterfly	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	2
Silver-studded Blue	SW58744201	RED RIVER BRIDGE	9/Jun/2018	SMALL STEPPING STONE FOR SSB	2
Silver-studded Blue	SW5849942283	GODREVV	30/Apr/2018	CATERPILLAR SPOTTED WITH ANTS IN ATTENDANCE. 9.5 DEGREES C. TIME: 12:15	1
Silver-studded	SW58024320	GODREVV	23/Jun/2018	SILVER-STUDED	6

Common name	Full grid ref.	Location	Date	Notes	Number
Blue		POINT		BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	
Large White Butterfly	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	4
Cinnabar Moth	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	20
Speckled Wood Butterfly	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	10
Small Heath	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	4
Common Blue Butterfly	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	10
Common Blue Butterfly	SW5842	GODREVV TOWANS	14/Jun/2018	SILVER-STUDED BLUE SURVEY- BUTTERFLY LIST OF OTHER SPECIES SEEN	
Silver-studded Blue	SW58704207	GODREVV	9/Jun/2018		4
Silver-studded Blue	SW5844242302	GODREVV	13/Jun/2018	SMALL AREA OF GOOD HABITAT	220
Large White Butterfly	SW591427	PENCOBBE N	31/May/2018		2
Silver-studded Blue	SW5890442418	GODREVV	13/Jun/2018	NEAR THE TO OF SLOPEP NUMBERS NOT TOO GOOD.	4
Silver-studded Blue	SW5886242415	GODREVV	13/Jun/2018	GOOD HABITAT BUT IN THE AREA I THERE IS A LOT OF LONG GRASS AND BRAMBLE	20
Silver-studded Blue	SW58784238	GODREVV	13/Jun/2018	LARGE AREA OF MARRAM GRASS, BUTTERFLIES ROOSTING IN THIS AREA	100
Silver-studded Blue	SW5871942293	GODREVV	13/Jun/2018	PART OF A VERY LARGE COLONY COVERING A LARGE AREA OF THE MAIN S	500

Common name	Full grid ref.	Location	Date	Notes	Number
				FACING SLOPE	
Silver-studded Blue	SW5870842253	GODREVY	13/Jun/2018	VERY GOOD AREA CLOSE TO WHERE SCRUB WAS REMOVED IN 2017	220
Silver-studded Blue	SW5891742369	GODREVY	13/Jun/2018		100
Silver-studded Blue	SW5851342269	GODREVY	13/Jun/2018	SMALL AREA	75
Silver-studded Blue	SW5893842353	GODREVY	13/Jun/2018	CONTINUOUS GOOD HABITAT IN THIS AREA. HOWEVER TOO MUCH SCRUB IN THE VICINITY AND LOWER DOWN THE SLOPE	50
Silver-studded Blue	SW5849942283	GODREVY	13/Jun/2018	EXCELLENT ROOSTING AREA NOT FAR FROM CATERPILLAR FOUND IN 2018. VERY GOOD HABITAT AND EXTENSIVE	500
Silver-studded Blue	SW5850342289	GODREVY	13/Jun/2018		24
Silver-studded Blue	SW5853742286	GODREVY	13/Jun/2018	WESTERLY POINT OF LARGE COLONY	24
Silver-studded Blue	SW5859142263	GODREVY	13/Jun/2018	ENTERING INTO SCRUBBY AREA	5
Silver-studded Blue	SW5855942343	GODREVY	13/Jun/2018		10
Silver-studded Blue	SW5858642351	GODREVY	13/Jun/2018	SCRUB ENCROACHMENT	1
Silver-studded Blue	SW5854842506	GODREVY	13/Jun/2018	SMALL COLONY	18
Silver-studded Blue	SW5860842249	GODREVY	13/Jun/2018	SMALL COPSE	1
Silver-studded Blue	SW5878542474	GODREVY	13/Jun/2018	LOTS OF MARRAM AND SCRUB IN THE AREA	10
Silver-studded Blue	SW59164252	GODREVY	14/Jun/2018	LARGE AREA OF SUITABLE HABITAT SURROUNDED BY SCRUB AND ISOLATING FROM MAIN METAPOPULATION	100
Silver-studded Blue	SW5909942402	GODREVY	14/Jun/2018	SMALL AREA OF SUITABLE HABITAT	15
Silver-studded Blue	SW59124227	SANDCOT	14/Jun/2018		15

Common name	Full grid ref.	Location	Date	Notes	Number
Silver-studded Blue	SW5869142584	GODREVY	14/Jun/2018	LOTS OF SCRUB IN THIS AREA	1
Silver-studded Blue	SW5871242563	GODREVY	14/Jun/2018		10
Speckled Wood Butterfly	SW5892842656	GODREVY MANOR HOUSE	14/Jun/2018		
Silver-studded Blue	SW5888442373	GODREVY	13/Jun/2018	GOOD COLONY	100
Silver-studded Blue	SW5892842656	GODREVY MANOR HOUSE	14/Jun/2018	SMALL AREA OF SUITABLE HABITAT	4
Silver-studded Blue	SW5842	GODREVY TOWANS	30/Jun/2018	2ND TIMED COUNT AT GODREVY WARREN. PAST PEAK OF FLIGHT PERIOD - NUMBERS DOWN FROM PREVIOUS 10DAYS	350
Silver-studded Blue	SW5885142520	GODREVY	13/Jun/2018	LOTS OF SCRUB	20
Silver-studded Blue	SW5886042478	GODREVY	13/Jun/2018		50
Silver-studded Blue	SW5888842486	GODREVY	13/Jun/2018	SMALL COLONY WITHIN SCRUB	10
Silver-studded Blue	SW5892242526	GODREVY	13/Jun/2018	LOTS OF SCRUB!	2
Silver-studded Blue	SW5895942527	GODREVY	13/Jun/2018	NEAR THE TOP OF THE SLOPE	4
Silver-studded Blue	SW5900242449	GODREVY	13/Jun/2018		20
Silver-studded Blue	SW5894442360	GODREVY	13/Jun/2018	GOOD HABITAT BUT TOO MUCH SCRUB IN THE AREA	100
Small Heath	SW5892842656	GODREVY MANOR HOUSE	14/Jun/2018		

Appendix 2 Silver-studded Blue SpeciesNet Report covering 2015 records and transect and timed count data for 2016. The report also contains all the transect sites in the UK where the Silver-studded Blue is recorded. All Cornish sites are highlighted in red. In 2015 Upton Towans had the highest index of any monitored site in the UK and regularly features as a site with a high index. This indicates the Hayle Dune System is one of the most important sites for the Silver-studded Blue in the UK.