Heath Fritillary in the Tamar Valley 2022 Report

Butterfly Conservation Report No. S22-17

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Contents

Summary

- Heath Fritillary populations remain in only four areas of the UK; the Blean (Kent), Exmoor (Somerset), Tamar and Lydford Valleys (Cornwall/Devon) and woodlands in south Essex.

- There are two extant sites in the Tamar Valley, located at Lydford Old Railway Reserve and Greenscoombe Wood. The Greenscoombe colony is classified as Large (made up of three breeding areas, each less than 300m apart), whilst the colony at Lydford Old Railway has declined and for the last two years has been classified as Small.

- Early spring weather was unsettled but late spring and summer conditions were warmer, drier and sunnier than average.

- Transect counts were carried out at Lydford Old Railway throughout the flight season, with the first Heath Fritillary seen on 22nd May. Subsequent counts were carried out on a weekly basis, with the last sighting on 20th June. The highest count from the transect was of 12 adults on 11th June, however a subsequent casual survey on the same day resulted in 18 individuals recorded. In 2021 the maximum number seen during a single survey visit was 2 individuals.

- Three timed counts were undertaken at Greenscoombe Wood on 24th and 27th May, and 11th June (peak).

- The timed count results indicated that Heath Fritillary had a good year at Greenscoombe Wood, with the estimated peak population across all compartments higher than in any year since 2009, with the exception of 2018.

- Only two visits were made to walk the East transect at Greenscoombe Wood this year, the first on 19th May when one individual was seen and the other on 9th July when two adults were seen. Unfortunately, the transect walker was unavailable for the period inbetween these dates, so no further transect walks were carried out. The West transect was also not walked this year. However, it's clear that the butterfly had a long flight season at Greenscoombe, on the wing for at least seven weeks.

- Deer Park Wood was visited once on 27th May, but no Heath Fritillary were seen.

- Blanchdown Wood was not visited during the flight period in 2022.

- In Greenscoombe Wood habitat assessments indicated that presence of Common cow-wheat has remained relatively stable, whilst the other two food plants (Germander speedwell and Ribwort plantain) show a decline since 2012.

- **UK Biodiversity Action Plan (UKBAP) Target 3:** being met / exceeded with a total of 18 sites occupied during 2022 in the South West England (Exmoor: 16 sites; Devon: 1 site; Cornwall: 1 site) (2005 baseline:11 sites).

- **Progress is ongoing to meet UKBAP Target 4** both in the Tamar Valley and other south west colony areas. Partnership working between Butterfly Conservation, the Duchy of Cornwall Estate, Natural England and local landowners continues. Active practical management takes place annually in Greenscoombe Wood and the Lydford area to maintain the Tamar Valley colonies. Advice and support to landowners (primarily the National Trust) in Exmoor is provided by Butterfly Conservation.

1. Monitoring Background and Methodology

1.1. Report Scope

This report documents the results of the 2022 Heath Fritillary *Melitaea athalia* monitoring in the Tamar Valley, following on from monitoring reports produced annually since 2009. Updates on the status of the Heath Fritillary at Greenscoombe Wood, Deer Park Wood and Lydford Old Railway Reserve are included.

1.2. Monitoring methods

Monitoring at Greenscoombe Wood (Luckett Wood) and Lydford Old Railway BC Reserve has been conducted annually by volunteers since 1980 and 1994 respectively, using an established UK Butterfly Monitoring Scheme (UKBMS) transect route.

For population monitoring, standard timed count methodology is used to give a rapid indication of the population size for each colony. Full details of this methodology are given in Appendix B. This method generates data for the number of individual butterflies seen in a given search time across a specified flight area. This data is then used to calculate estimates of total colony size at the peak flight period (estimated peak population)*****, which is then converted to the colony size categories used in annual comparisons (Table 1). Timed count data is passed to the Butterfly Conservation monitoring team to inform national species trend data produced under the UKBMS project. Species records are passed to the relevant county recorders.

Estimated Peak Population (number of adults)	Population Size Category
>250	Large
100 to 250	Medium
10 to 100	Small
<10	Very small

Table 1: Population size categories used in annual monitoring

Three visits were made by the author to Greenscoombe Wood to undertake timed counts. The 2022 flight season lasted for over seven weeks, between 19th May and 9th July.

All areas of potential habitat were visited to see if the butterfly was present. Presence of the larval food plants, Common Cow-wheat (*Melampyrum pratense*), Ribwort Plantain (*Plantago lanceolata*) and Germander speedwell (*Veronica chamaedrys*) were recorded using an abundance scale (where 0 represents absence and 5 represents >40% ground cover), and notes were made on the general habitat condition (see Table 4).

The extent of suitable habitat within which adults were seen or the limits of individuals recorded along sections of ride were used to define the colony boundaries. Individual colonies were determined by a separation of 300m or a barrier of unsuitable habitat restricting the interchange of individuals (after Barnett & Warren 1995).

Lydford Old Railway BC Reserve transect data was obtained from the volunteer reserve warden. Weekly visits were made starting 24th April and the butterfly was recorded between 22nd May and 20th June.

Usually an adjustment to peak is made if the maximum counts obtained from the timed count data differ by more than three days to the peak seen in the transect data for that site, however since the Greenscoombe transect was not walked in 2022, it is not possible to determine when the peak occurred so no adjustment has been made. Full data is given in Appendix E.

** Timed count data are used to calculate an encounter rate (No seen/hr), relative adult numbers (y= encounter rate x area x adjustment to peak) and estimated population size, x (where y= 0.499x – 2.396, after Warren 1985). The size categories given are as used in the 2004 all colony monitoring exercise (Wigglesworth et al. 2004). For the current monitoring programme correcting to peak is deemed necessary where the survey data falls outside 25% of the peak count range as indicated by a smoothed plot of local transect data.*

2. Results

2.1 Summary of 2022 Population Monitoring

Figure 1 shows the sites surveyed for the 2022 monitoring programme in the Tamar and Lydford Valleys. Figures 2 and 3 show the extent of flight areas used by each of the colonies during the 2022 flight season.

There are two extant sites each containing one colony in the Lydford and Tamar Valleys. Data from the 2022 surveys indicates that the Greenscoombe Wood colony is Large (made up of three breeding areas, one Large, one Medium and one Small, but constituting one Large colony, as each is less than 300m apart). The Lydford Old Railway colony is Small. Lydford Forest was not surveyed for Heath fritillary in 2022. Singletons were recorded there in 2021, and re-survey during 2023 to assess whether this site remains occupied is a priority.

At **Greenscoombe Wood**, the first Heath Fritillary was recorded on 19th May and the last individual was recorded on 9th July. The timed count was highest on 11th June, when a total of 254 individuals were recorded across the East Ridge and West reserve combined. This total is higher than in any year since 2015, and when flight area is taken into consideration, the Estimated Peak Population in 2022 is higher than in any year since 2009, with the exception of 2018.

The Heath Fritillary at Greenscoombe Wood are found in three core areas (described in this report as GW1, GW2 and GW3), however individuals are well spread across all these areas with less than 300m separating each breeding patch, so technically there is only one Large colony present (Table 2, Figure 2).

Lydford Old Railway Reserve Numbers at Lydford increased on those recorded in recent years, with a maximum count of 18 individuals recorded on the 11th June (compared with a maximum count of two individuals seen in 2021). This is still considerably lower than the numbers seen during 2015-2018, when more than 100 were recorded during timed counts. **Lydford Forest** was not surveyed in 2022, and will be a priority for survey in 2023. Figure 3 shows the Lydford Old Railway flight area.

Deer Park Wood was surveyed on 27th May, and no Heath Fritillary were seen. Some suitable habitat remains along the track south of the road, however much of the original breeding site has become dominated by scrub and is no longer suitable. Management recommendations have been provided (see Section 3.2) and will need to be implemented in the coming years, otherwise this site will not be recolonised.

2022	No. of Heath Fritillary recorded (max counts from a single survey visit)	Estimated peak population	Total colonies	Total flight area (ha)	Estimated population size
Greenscoombe Wood	**254**	**1021**	**1**	**2.16**	**Large**
Lydford Old Railway	**18**	**26**	**1**	**0.47**	**Small**
Lydford Forest	**No survey**	**n/a**	**0**	**n/a**	**n/a**
All Site Totals	**272**		**2**		

Table 2: Summary of Tamar Valley monitoring

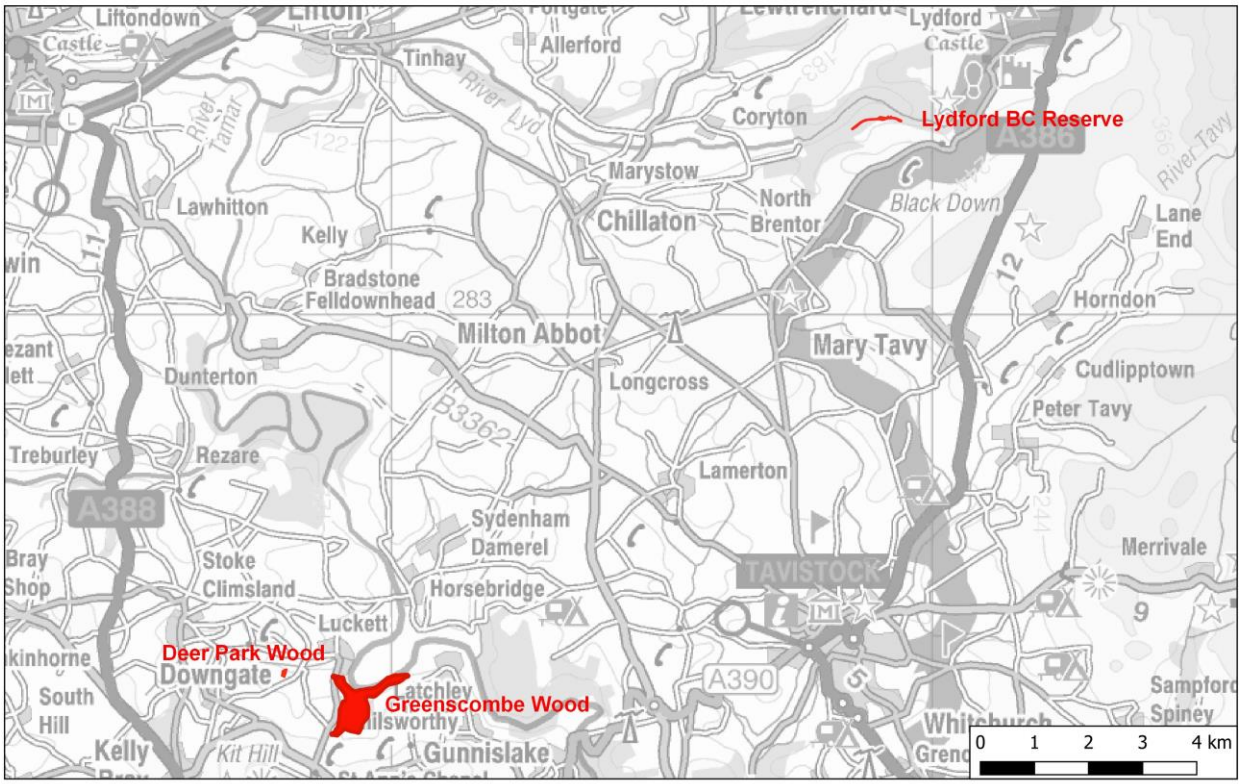

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Figure 1: Sites surveyed during 2022 Heath Fritillary flight season

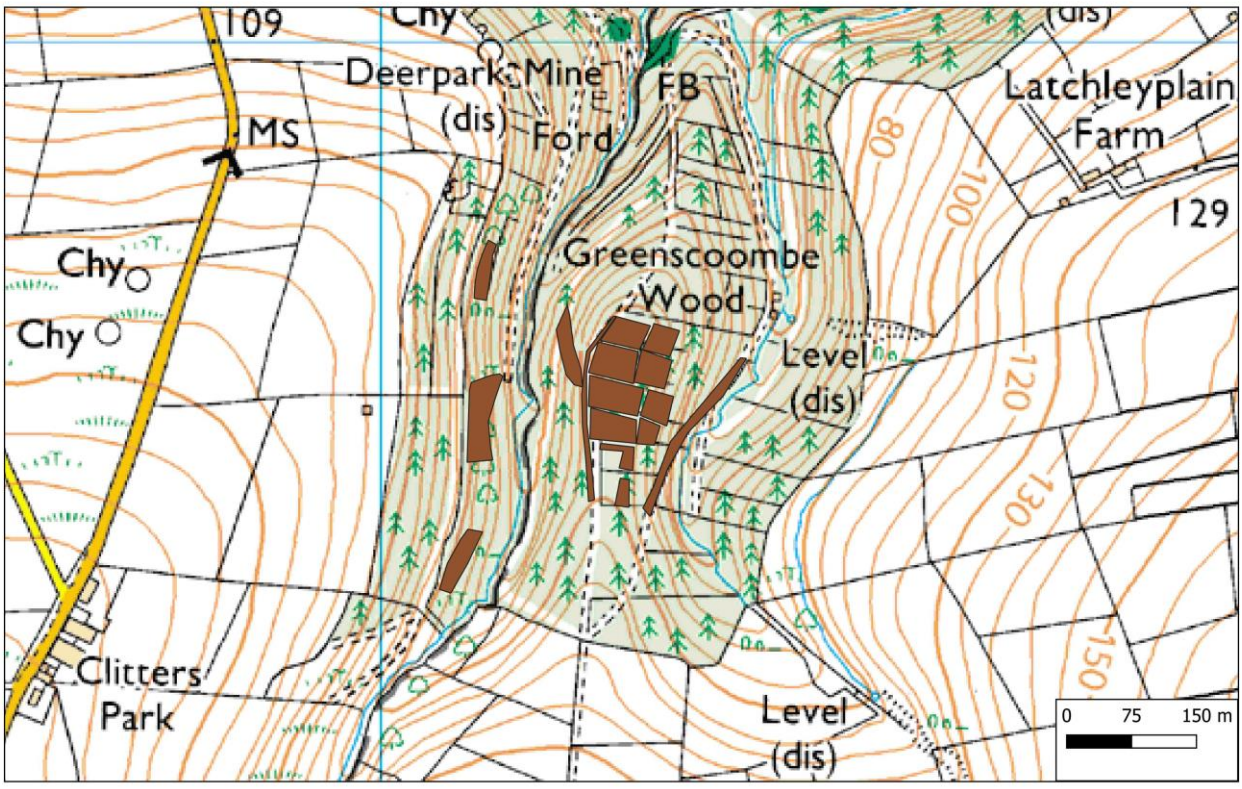

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Figure 2: Heath Fritillary colony areas at Greenscombe Wood, 2022

HF Colony area 2022

HF Compartments (Greenscombe Woods)

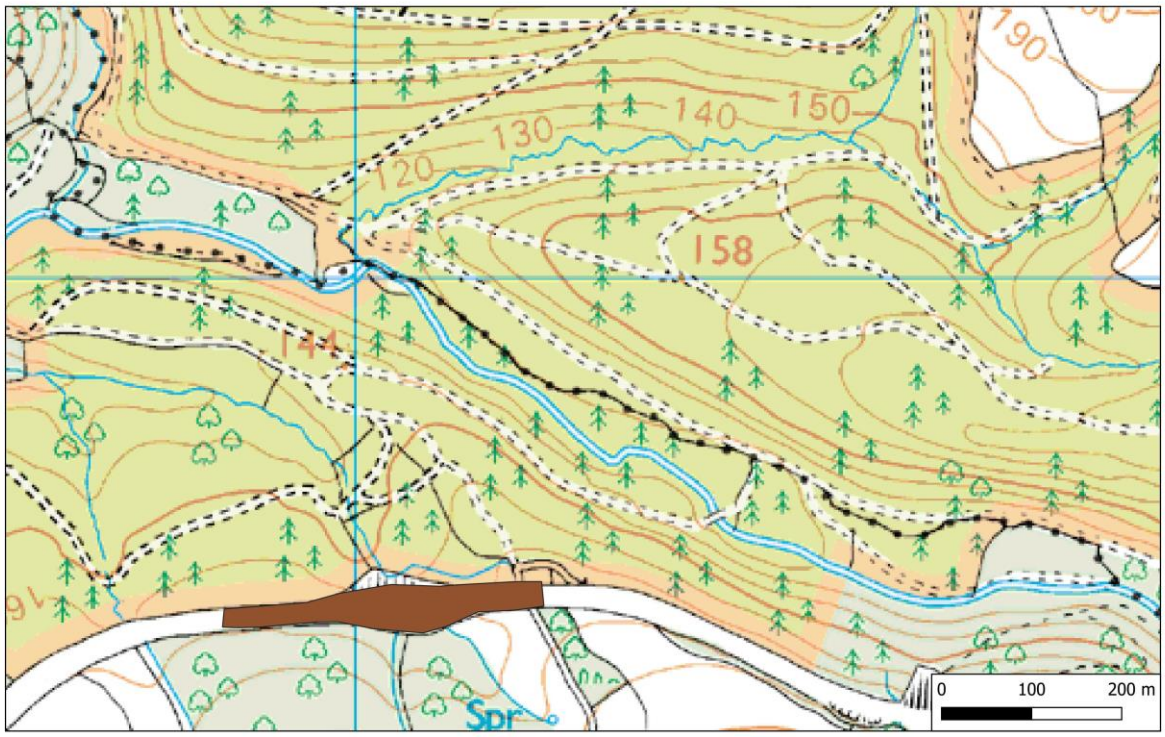

Figure 3: Heath Fritillary flight area in the Lydford Old Railway reserve, 2022

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2.2 Lydford Old Railway Results

The increase in the number of Heath Fritillary recorded in a single survey visit (18 Heath Fritillary in 2022, compared with 2 the previous year) is positive, however concern remains for the long term sustainability for the population here. Poor weather and possibly over management may be causal factors, together with the isolation of this population, although the reason for the very sudden decline in abundance since 2018 is unclear.

A change in the management regime was introduced in the winter of 2021/22, when rotational management was introduced and part of the site was left unmanaged so that a more varied habitat mosaic and age structure could develop. With the encouraging increase in numbers recorded this year, there is hope that the population may yet recover.

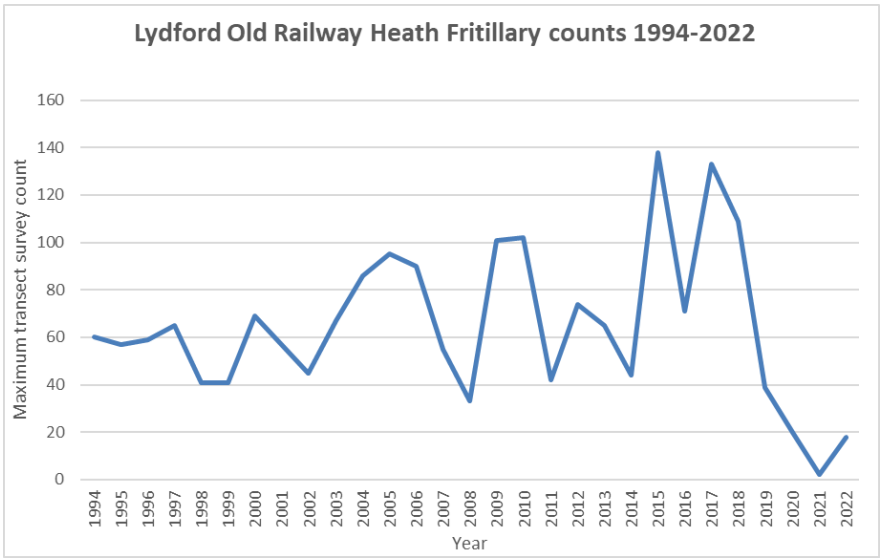

Figure 4: Maximum Heath Fritillary count during a single transect survey visit, Lydford Old Railway Reserve 1994-2022

2.3 Greenscoombe Wood Results

At Greenscoombe Wood, Overall Estimated Peak Population Size increased to the second highest in the period since 2009, with only the exceptional year in 2018 recording a higher estimated peak population (Table 3, Figures 5 & 6).

Colony Name	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
GW1	Small	Small	Medium	Medium	Small/ Very Small	Very Small	Small	Medium	Medium	Medium	Medium	Small	Medium	Medium
GW2	Not Recorded	Very Small	Very small	Not recorded	Not recorded	Not recorded	Small	Large	Large				Small	Small
GW3	Small	Small	Medium/ Large	Large	Medium	Medium	Large	Large	Large	Large	Large	Large	Large	Large
Overall Estimated 'Peak' Population size	**Medium (116)**	**Medium (180)**	**Large (532)**	**Large (860)**	**Medium (227)**	**Medium (156)**	**Large (621)**	**Large (972*)**	**Large (990)**	**Large (1059)**	**Large (501)**	**Large (383)**	**Large (761)**	**Large (1021)**
Total maximum number of adults recorded during a single survey	**23**	**43**	**185**	**208**	**59**	**106**	**304**	**173**	**240**	**244**	**79**	**84**	**153**	**254**
Total number of colonies	**2**	**3**	**3**	**2**	**2**	**2**	**3**	**2**	**2**	**2**	**2**	**1**	**1**	**1**
Total area occupied (ha)	**1.37**	**1.2**	**2.9**	**2.72**	**1.8**	**1.9**	**2.7**	**4.2***	**3.62**	**3.43**	**3.04**	**3.04**	**2.55**	**2.16**
Total Area Managed (ha)	0.5	1.21	4.45	3.85	3.85	4.12	4.21	**5.4****	**4.08**	**5.26 + 5.35=10.61**	**3.5**	No winter work due to CV-19		**2.79**
										includes 5.35ha newly felled area				

Table 3: Summary of colony size and status at Greenscoombe Wood (2009-2022)

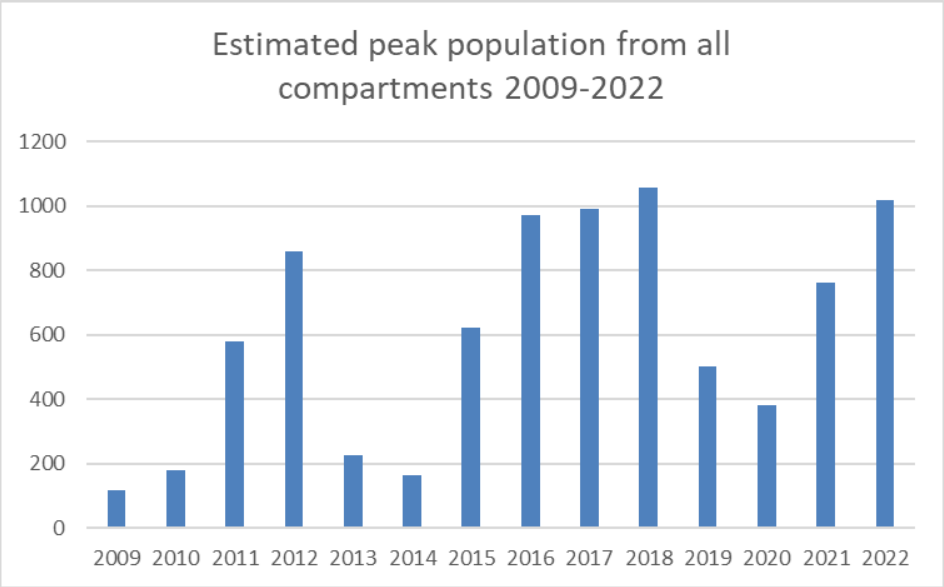

Figure 5: Total Estimated Peak Population, Greescoombe Wood 2009-2022

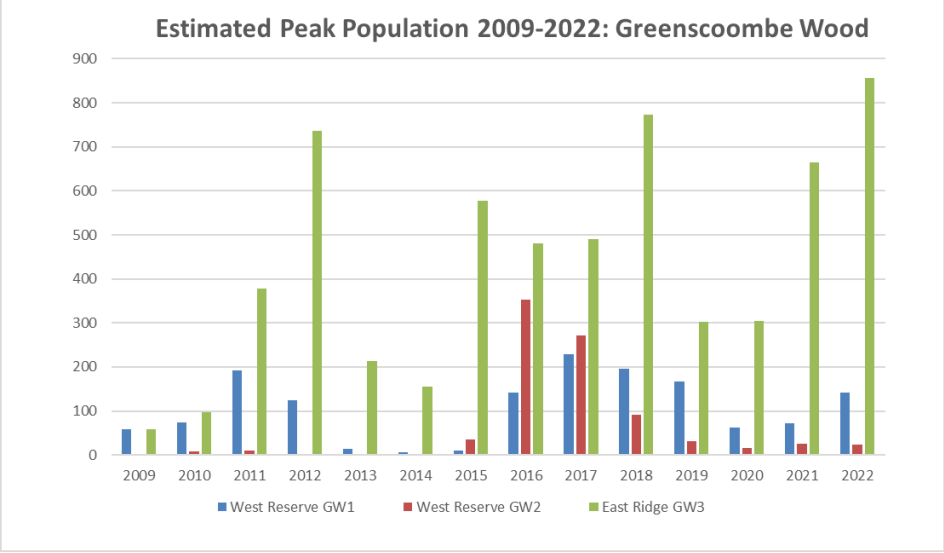

Figure 6: Estimated Peak Population by compartment, Greenscoombe Wood 2009-2022

2.4 Greenscoombe Woods: Habitat suitability and foodplants

Results of the larval foodplant assessment are presented in Table 4 and Figure 7.
23 compartments were assessed, and presence was confirmed of some or all of the larval foodplants in all compartments.

Cow-wheat presence continues to be greatest (ground cover >40%) in the hill fort areas and Compartment 3a, and in the Oak Standards compartment on the West Reserve. Cow-wheat remains the most abundant foodplant and was present in 20 of the 23 compartments surveyed. Although there was a small decline since 2020, overall abundance is consistent with that recorded in recent years. Abundance of other foodplants, Ribwort Plantain and Germander Speedwell, has shown a general decline over the recording period 2012-2022 (Table 4).

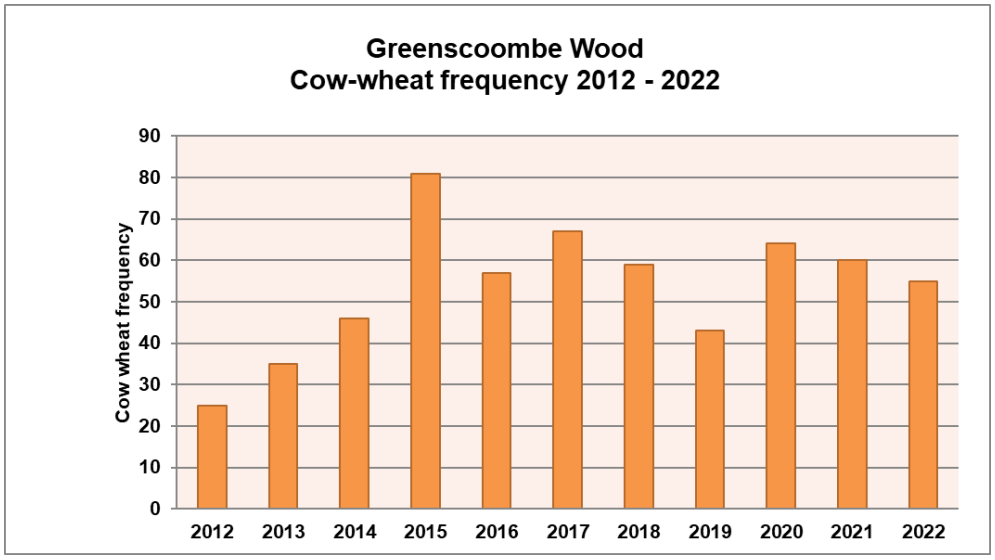

Figure 7: Common Cow-wheat frequency across all compartments, Greenscoombe Wood 2012-2022

		Abundance Score 2014			Abundance Score 2015			Abundance Score 2016			Abundance Score 2017			Abundance Score 2018			Abundance Score 2019			Abundance Score 2020			Abundance Score 2021			Abundance Score 2022		
Colony Area	**Compartment Name**	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	Germander Speedwell	Cow Wheat	Ribwort Plantain	Germander Speedwell	Cow Wheat	Ribwort Plantain	German der Speedw	Cow Wheat	Ribwort Plantain	German der Speedw
GW3	Compt.3b				1	0	0				3	0	2	2	0	0				1	0	0	1	0	0			
GW3	Compt.4	4 to 5	0	0	3	0	0													3	0	0	2	0	0	2	0	0
GW3	Meadow-M4				0	5	4	1	4	3	0	5	4	0	2	3	0	1	1	0	1	2	1	2	2			
GW3	Compt.4 Fire Brea	2	2	2				1	2	1	0	0	2	0	0	0	0	0	0				0	0	1	0	0	1
GW3	Bottom Ride	1	2	2							0	5	5	1	0	2				0	3	3	0	4	3			
GW3	Compt.1	5	0	0	3	0	0				3	0	3				3	0	0	4	0	0	4	0	0	3	0	0
GW3	Compt.1a				4	0	4	2	0	0	2	0	2				2	0	3	3	0	0	3	0	2	3	0	2
GW3	Compt.2a	3	3	2	0	2	5	4	3	3				2	0	1							Inaccessible					
GW3	Compt.2b				0	0	1	1	0	3				2	0	1							Inaccessible					
GW3	Compt.3a	2	0	0	4	0	0				5	0	0	3	0	0	0	0	0	3	0	0	5	0	0	5	0	1
GW3	Hill Fort S1	5	1	1	5	0	0	4	1	1	5	0	2	5	0	2	5	0	2	5	0	0	5	0	2	5	0	2
GW3	Hill Fort S2				4	0	1	5	1	1	5	0	2	5	0	2	4	0	1	5	0	0	5	0	3	5	0	3
GW3	Hill Fort S3				5	0	0							3	0	0	5	0	0	5	0	0	5	0	0	5	0	0
GW3	Meadow-M1	3	4	2	4	5	4	4	4	4	3	5	3	3	3	3	2	2	2	1	2	1	2	1	1	2	1	2
GW3	Meadow-M2	3	4	2	0	5	5	4	3	3	3	5	4	2	2	2	2	1	2	2	2	2	1	2	3	2	2	4
GW3	Meadow-M3	3	4	2	0	5	5	4	3	3	3	5	4	2	2	2	1	1	2	1	1	2	1	4	1	1	3	2
GW3	Top Ride	1	2	2	4	5	4				5	4	2	5	2	2	5	2	3	4	1	1	4	2	1	4	2	1
GW3	Transect Route				4	0	4																					
GW1	Penneys Piece	1	1	1	4	1	1				0	0	0	0	0	0	0	0	0	0	0	0				0	1	1
GW1	Top ride	1	2	2	0	0	2				3	0	5	0	0	0							1	1	1	2	1	2
GW1	Bottom Ride	1	2	1	4	0	0	3	3	2	3	0	5	4	0	2							3	2	3	2	1	3
GW1	Compt.1	2	2	2	1	0	0	0	1	2	2	0	0	1	0	1	1	0	0	1	0	0	1	0	0	1	0	0
GW1	Compt.2	2	2	2	1	0	0	0	2	2	3	1	3	3	1	0	1	0	2	4	0	0	1	0	0	1	0	0
GW1	Compt.3	2	2	2	5	0	0	4	3	3	3	1	0	4	0	1	2	0	2	2	0	0	3	0	1	1	0	0
GW1	Transect Route	2	2	2	5	2	0																					
GW2	Compt.5	3	1	4	1	0	0	5	1	1	3	0	0	2	0	1	2	0	0	5	0	2	4	0	1	3	0	1
GW2	Compt.6	3	1	4	4	0	0	5	1	1	3	0	2	3	0	1	2	0	1	3	0	1	2	0	0	2	0	0
GW2	Compt.7	1	1	2	5	0	0	5	1		3	1	2	2	0	0	2	0	2	1	0	0	1	0	0	1	0	0
GW2	Compt. 8																						0	0	3	0	0	3
GW2	Oak standards				0	0	0	5	0	0	5	0	0	5	0	0	4	0	0	5	0	0	5	0	0	5	0	0
GW1	Transect Route				2	0	0													5								
	TOTAL	**46**	**38**	**37**	**73**	**30**	**40**	**57**	**33**	**33**	**65**	**32**	**52**	**59**	**12**	**26**	**43**	**7**	**23**	**63**	**10**	**14**	**60**	**18**	**28**	**55**	**11**	**28**

Foodplant rank abundance scale:
0 Absent
1 Rare – a few plants only
2 Scarce – a few patches present
3 Frequent – patches always in view
4 Common – ground cover >10%
5 Abundant – ground cover >40%

Table 4: Foodplant abundance, Greenscoombe Wood (2014-2022)

2.5 Progress towards targets and ongoing objectives

Table 5 outlines UK BAP targets for Heath Fritillary. **Target three** is currently being met, and exceeded, with a total of 18 sites occupied during 2021 (16 sites on Exmoor in Somerset, one site in south Devon and one site in Cornwall). Annual monitoring is carried out and the current range is being maintained with management advice and support provided to landowners.

Progress to meet **Target four** by 2030 is ongoing, with work to restore and maintain suitable habitat in Cornwall, Devon and Somerset.

UK BAP Targets for the Heath Fritillary covering the Devon & Cornwall population
Target 3: Maintain the current range in east Cornwall, Devon and Somerset (2005 base line, 11 sites).
Target 4: Restore populations in east Cornwall, Devon & Somerset to 1989 status by 2030 (1989 status, 27 sites/ 32 colonies)

Table 5: UK Biodiversity Action Plan targets for Heath Fritillary (Devon and Cornwall)

3. Site Status and Recommendations

3.1. Greenscoombe Wood

- Owned and managed by the Duchy of Cornwall
- Monitored by timed counts and transects
- One colony recorded (Large). Compartments GW1, GW2 & GW3 are <300m apart from each other so are considered part of the same colony
- Management delivered during winter 2021/22:
    - East ridge: S1, S2 & S3 – scrub brushcut and cleared and stumps treated.
    - East ridge: Compartment 1 and 1a - coppiced and arisings burnt.
    - West reserve: Compartment GW 1 and GW7 – coppiced and arisings burnt.
    - Butterfly Transect and all paths cut and cleared

See Appendix I for images of work carried out in 2021/22.

A meeting took place in early November with representatives from The Duchy Estate, Natural England and Butterfly Conservation, and management plans for winter 2022/23 and beyond were discussed. The following management was agreed for the coming year:

East Ridge

- Mow 3 of the 4 meadows after the middle of September (leaving one meadow uncut each year)
- Brushcut and remove young encroaching oak/scrub from meadows and fringes
- S1, S2 & S3 - brushcut and clear all scrub, treat stumps
- Coppice Compartment 2a and 2b, burn arisings
- Coppice the firebreak
- Remove the top 4 rows of conifer adjacent to Meadows 4 and 3, to reduce shading on meadows. Leaving the rest of the crop in situ for the time being will ensure shelter is maintained.

West reserve:

- Coppice Compartment 2, burn arisings
- Coppice lower half of the Oak Standards compartment
- Fell and clear one of the larger oaks from the upper half of the Oak Standards compartment
- Thin the trees (remove some of the oaks) from the lower track below the Oak Standards and Cpts 6 and 7 – note there is a Wild Service tree which must be left in situ.
- Cut and clear the transect route

Penney's Piece

- Ponies now removed; reinstate grazing summer 2023.
- Reduce alder buckthorn and gorse. Divide the whole site into two (east and west) – in the western section coppice half of the alder buckthorn (no stump treatment). In the same half, remove half of the gorse and treat stumps to slow regrowth. Burn arisings (select burn area carefully eg. on top of an old gorse clump, to minimise impact on open grassland). (Eastern half to be managed in subsequent year in the same way)

Across all areas, during summer 2023:

- Monitor for presence of Heath Fritillary adults.
- Assess habitat condition to monitor the impact of management and suitability of breeding habitat.

3.2. Deer Park Wood

- **Owned and managed by Duchy of Cornwall**
- **Surveyed in 2022; no Heath Fritillary were recorded**
- **One adult Heath Fritillary recorded in 2021; previously none seen in 2016-2020, a single adult was recorded in 2015**

No management was carried out in 2021 or 2022. It is therefore recommended that the management outlined below which was planned for last year is carried out this year (in 2022/23):

- Reintroduce coppice regime, clearing half of the original Heath Frit breeding area every other year. Coppice and clear back the area above a line from top right to bottom left.
- Cut and remove regenerating vegetation from the bog opposite the original breeding area
- Cut back ride edges either side of the track heading towards Deer Park Farm as widely as possible
- Remove the first 3 or 4 rows of young Douglas Fir trees recently planted close to the edge of this track
- Consider felling conifer above the original breeding area, and introducing a coppice rotation here

Across all areas, during summer 2023:

- Monitor for presence of Heath Fritillary adults.
- Assess habitat condition to monitor the impact of management and suitability of breeding habitat.

4. Acknowledgements

Butterfly Conservation would like to thank all the partner organisations and individuals working in the Tamar Valley for their continuing contribution towards the conservation of the Tamar Valley population of the Heath Fritillary: the Devon and Cornwall Branches of Butterfly Conservation; the Duchy of Cornwall (Geraint Richards); Colin Sargeant (Volunteer Warden and transect walker for Lydford Reserve); Richard Vulliamy (Volunteer Warden and transect walker for Greenscoombe Wood); Caroline Kelly (volunteer surveyor); Natural England (Simon Tame and Hugh Tyler); Forestry England (Aaron Boughtflower); and Tamar Valley AONB. Butterfly Conservation's work on this species is made possible through funding by Natural England under the *Action for Threatened Species* project (nominated officer Jon Curson).

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Appendix A: Heath Fritillary Factsheet Website link

[Heath Fritillary Factsheet]

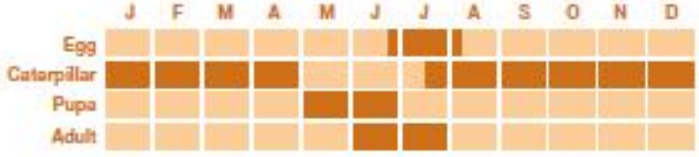
The Heath Fritillary is one of the rarest of our small fritillary species, distinguished by its dusky wing colours. It is restricted to a few specialized habitats where it flies close to the ground with characteristic flits and glides. The butterfly has historically been linked with the traditional practice of woodland coppicing, giving it the local name of the 'Woodman's Follower'. Its main strongholds are now in sheltered heathland combes on Exmoor and woods in the Blean Woods of Kent. The butterfly has also been re-established at four woodland sites in Essex and one site in Devon since the 1980s.

Life cycle

The Heath Fritillary flies from the end of May until early July in Cornwall but somewhat later (from mid-June to early August) on Exmoor and in south-east England. In the south-east there can be a small second generation in hot years during late August and early September. The eggs are laid typically in batches of between 80-150, close to the ground on the underside of a leaf immediately next to the foodplant, and only rarely on the foodplant itself. The larvae feed in a small, inconspicuous web, but soon disperse into smaller groups. These groups overwinter during their third instar close to the ground, where they form a hibernaculum usually by spinning together the edges of a dead, tightly rolled leaf. The larvae emerge again in March or April and feed sporadically between lengthy bouts of basking on dead leaves or twigs. They pupate within the leaf litter, often within curled-up dead leaves.

Colony structure

The species is highly sedentary and forms compact colonies centred on its favoured breeding areas. Adults rarely move more than 100 m but a few individuals have been recorded to disperse up to 2 km. Despite the fact that its habitats are often short-lived, it has a very limited colonising ability: suitable habitats more than 600 m from a population are colonised only slowly, if at all. On Exmoor, it has survived best on larger, less isolated sites and effective conservation therefore has to consider the pattern of its habitats.



Foodplants

The main foodplant on woodland and heathland sites is Common Cow-wheat *Melampyrum pratense*. Foxglove *Digitalis purpurea* can be a secondary foodplant, especially on Exmoor. On rare grassland habitats in south-west England, it can also use Ribwort Plantain *Plantago lanceolata*, Germander Speedwell *Veronica chamaedrys*, and occasionally other speedwells *Veronica spp.*.

Habitat

The species uses sunny, warm, and sheltered habitats of three main types:

1. Sheltered heathland combes (valleys) on Exmoor (up to 200-400 m above sea level) where Common Cow-wheat grows as scattered plants on mineral soils amongst vegetation dominated by Bilberry;
2. Coppiced or newly felled woodland on acid soils where Common Cow-wheat is abundant;
3. On a few sites in south-west England, the butterfly breeds on unimproved grassland with abundant Ribwort Plantain and/or Germander Speedwell growing in short (5-15cm) or sparse swards on stony soils.

Habitat management for the Heath Fritillary

Sheltered Heathland Combes (Exmoor)

Aim is to maintain short heathy vegetation with scattered Common Cow-wheat growing amongst Bilberry.

Burning

The Heath Fritillary can thrive in immediate post-burn vegetation, providing that colonies survive nearby to re-colonise. Burning on rotation during winter can thus be highly beneficial to restore short vegetation on sites that have become too tall or too Bracken dominated to be suitable (e.g. as a result of low grazing pressure). Some periodic burning may also be essential to maintain habitat suitability under all grazing systems. Any burning undertaken must be in line with 'The Heather and Grass burning Code'. Wherever possible, burn before the bird nesting season in March and burn only a part of the breeding habitat in any single year and allow to regenerate before burning adjacent patches. Ideal burning frequency for each habitat patch is probably once every 10-15 years (e.g. one-fifth of the area every 2-3 years). Burning is best followed by Bracken control in the same year (see below) as this plant is invigorated by burning.

Grazing

Suitable habitat can be maintained by grazing through the year by sheep, cattle, ponies and deer. Some winter grazing may be preferable to provide some disturbance and shorter vegetation in spring when Common Cow-wheat germinates. Ideal grazing levels will depend on the pattern and timing of grazing as well as density. Grazing probably needs to be combined with periodic burning.

Bracken

Many good sites have a light cover of Bracken, though it is not clear how important this is in providing suitable breeding habitat and in sustaining the larval foodplant. Dense Bracken can be controlled by spraying with Asulox in patches, while moderate densities can be suppressed by appropriately timed cutting or rolling (e.g. with a Bracken bruiser), or by encouraging localised grazing. Bracken spraying may be crucial after burning and is best carried out during mid July and early August.

Grasslands (Cornwall and Devon)

Aim to maintain herb-rich grassland, with abundant Ribwort Plantain growing in short/medium vegetation (i.e. 5 - 15cm) usually on stony substrates.

Cutting/mowing

The following two regimes have successfully provided suitable habitat:

1 Cutting every other year during autumn or winter with brush cutters so that half the habitat is cut each year, and raking cut material.
2 Annual mowing in autumn with tractor-drawn 'bush-hog' cutter. Sites may need periodic ground disturbance to encourage high Plantain densities, so occasional more severe cutting or scraping may be necessary.

Woodland (Kent and Essex)

Aim to ensure a succession of sunny clearings with abundant Common Cow-wheat, in otherwise sparse vegetation. Coppicing or group felling of high forest woodland best produces such clearings, but continuity of management is essential.

Wide sunny rides are needed for the species to move to new, freshly cleared areas where conditions are suitable for breeding. Coppice small plots (0.4 -2ha) on a rotation of 10-20 years, preferably cutting adjacent plots within 3 years, or within 300m of an existing colony. Where deer are abundant it may be necessary to fence newly coppiced areas to allow good regrowth, though managing deer populations is a preferable long-term option.

above Ideal habitat in young coppice with abundant Cow-wheat
below Habitat in recently burnt, bilberry-dominated heathland on Exmoor

Butterfly Conservation
Saving butterflies, moths and their habitats

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Appendix B: Ng1: Monitoring butterflies by timed counts

TIMED COUNT MONITORING

Timed counts are a useful method for rapid monitoring of rare species, especially those that have temporally and spatially dynamic distributions in extensive habitats. Unlike transects, timed counts need only be carried out once a year at a site to provide meaningful results. However, the margins of error in timed count data tend to be greater than transects. It is also important to note that local transect data is required to generate a meaningful index from the raw timed count data.

This guidance note describes how to carry out a timed count to UK Butterfly Monitoring Scheme specifications. It is vital that **all** of the required information is recorded during a timed count if it is to be used in the UKBMS to analyse trends at National, Regional and site levels.

RECORDING BASICS

When to record: Make a timed count as near as possible to the peak flight period of the species in question. Your local Transect or BNM co-ordinator may be able to advise you on this. Only one count is needed per year if this is achieved.

Time of day: Timed counts should ideally be made between 10:45 and 15:45 hours. Between 10:00 and 17:00 hours is usually allowable, though butterfly activity may drop off rapidly during the late afternoon on warm days, so later times should be avoided.

Weather conditions: Timed counts should only be carried out in warm and at least bright weather, with no more than moderate winds and not when it is raining. The minimum criteria are either 13-17ºC with at least 60% sunshine, or if there is no sunshine the temperature must be 17ºC or above. Windspeed (Beaufort scale) should be no more than 5 unless the survey area is sheltered from the wind. Check that conditions are suitable before you start the count and that if the temperature is less than 17ºC there is likely to be sufficient sun for butterfly activity.

HOW TO DO THE COUNT

1. Briefly walk the site to identify the extent of the adult flight area. If adults are patchily spread over a large area, it is better to identify sub-populations and survey them separately.
2. Count adults by walking the site in a zigzag path, covering the flight area as thoroughly and evenly as possible. It is important the walk passes through areas of high and low adult density: If only the best patches are visited, our analysis may over-estimate abundance.
3. Recording should be made at a slow, steady pace. Count the number of butterflies seen in a fixed time period (in minutes) sampling the whole flight area. This usually takes between 5 and 60 minutes depending on the size of the colony area. Do not worry about counting the same butterfly twice as the analysis accounts for this.

ESTIMATING PROPORTIONS OF SIMILAR SPECIES

If similar species such as High Brown Fritillary (HBF) and Dark Green Fritillary (DGF) are flying together at a site, you can identify a sample of the individuals and the results can be used to determine the proportion of each species present. For example, if from 45 butterflies seen, 5 HBF and 8 DGF were confirmed, the remaining 32 unconfirmed individuals can be divided up proportionately to give an estimated 12 HBF and 20 DGF, thus giving totals of 17 HBF and 28 DGF. **Under new UKBMS criteria you need to confirm the identity of at least 25% of the individuals seen in order for the estimated counts to be accepted**. **In situations where individuals are too numerous to achieve this, i.e. over 100, you should confirm the identity of at least 20 individuals**. Note that you will need a license to capture High Brown Fritillary and the use of nets may be prohibited in some areas - contact the Species Team at BC for details.

WHAT TO RECORD ON

Timed counts should be recorded on an **Nf1: Timed Count Recording Form** available from Butterfly Conservation. Use a separate form for more than two visits in a year, and as required for each sub-site (if the site is large).

Recording the weather: Sunshine should be estimated the nearest 10% of the time it was sunny while you were completing the count. If a distinct shadow is cast (bright cloud) then conditions may be classed as sunny. Record shade temperature, e.g. with a portable thermometer placed in a shaded situation at the beginning of the count before you start, and record the average windspeed code using the Beaufort scale (see right).

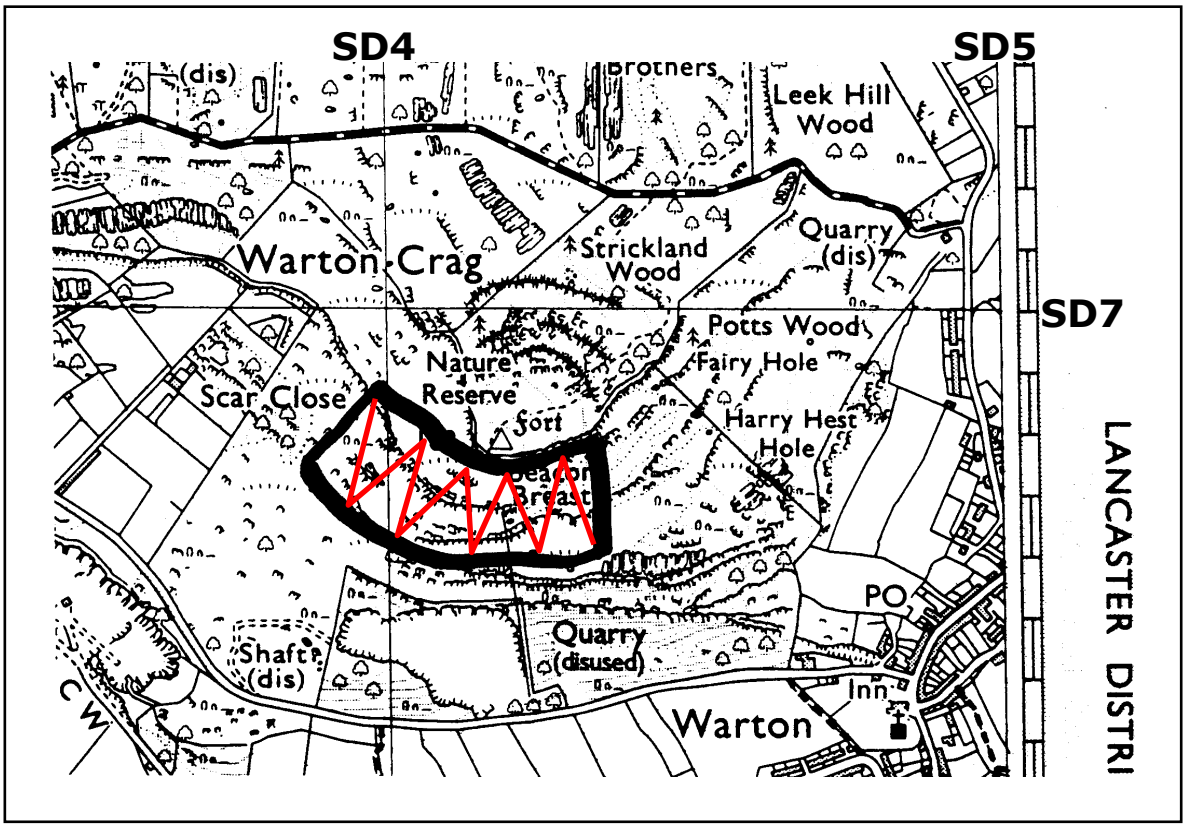
THE BEAUFORT SCALE:

Code	MPH	Description	Specifications on land
0	0-1	Calm	Smoke rises vertically
1	1-3	Light air	Slight smoke drift
2	4-7	Light Breeze	Wind felt on face & leaves rustle
3	8-12	Gentle Breeze	Leaves & twigs in constant motion
4	13-18	Moderate Breeze	Raises dust and small branches move
5	19-24	Fresh Breeze	Small trees in leaf begin to sway
6	25-31	Strong Breeze	Large branches move & trees sway

See below for an example colony map.

EXAMPLE MAP OF FLIGHT AREA

Note: Scale 1:10 000.
Boundary of colony shown in thick black ink.
Map has national grid annotation, and site name is clearly visible.



REMINDER OF THE MINIMUM INFORMATION TO BE RECORDED

1. Site name and 6-figure grid reference (site name should be consistent each year)
2. Date of count
3. Weather conditions
4. Number seen (confirmed and estimated)
5. Duration of count (minutes)
6. Extent of flight area (hectares)

ELECTRONIC STORAGE AND TRANSFER OF DATA

A specially formatted excel spreadsheet (**Nf2: Timed Count Data Sheet**) has been produced to allow you to computerise the data recorded on the paper forms. Data for any number of sites can be entered on one sheet.

WHEN AND WHERE TO SEND YOUR DATA

Send in all records of visits, importantly even if none are seen. Data should be sent in either as hard copies of the Nf1 Timed Count Recording Forms or you can email a copy of your Nf2 Timed Count Excel Data Sheet, to Butterfly Conservation Head Office. **If your data is to be included in the annual UKBMS analyses and reports, recording forms must be in by the end of October and Excel data by the end of November at the latest.**

CONTACT FOR FURTHER INFORMATION

Butterfly Conservation, Manor Yard, East Lulworth, Dorset, BH20 5QP
transect@butterfly-conservation.org 01929 400209

Appendix C: Timed Count Recording Form
HEATH FRITILLARY – LYDFORD/TAMAR TIMED COUNT RECORDING FORM

SITE NAME:		**ID used on sketch map:**	
DATE:		**approx dimensions of flight area (m):**	
RECORDERS:			

!! PLEASE MARK THE FLIGHT AREA <u>CAREFULLY</u> ON THE MAP PROVIDED!!

START TIME - END TIME:	
Temperature (in the shade)**:**	
Sunshine (mean % of time)**:**	
Max wind speed (beaufort scale)*:	
NUMBER SEEN:	
TOTAL SEARCH EFFORT (mins)**:	

** Actual minutes searched x no: recorders if covering separate ground within same colony.

COW-WHEAT ABUNDANCE* (tick):	**0**		**1**		**2**		**3**		**4**		**5**	
Ribwort Plantain abdn* (tick):	**0**		**1**		**2**		**3**		**4**		**5**	
Germander speedwell abdn * (tick):	**0**		**1**		**2**		**3**		**4**		**5**	

HABITAT DESCRIPTION (Circle or add):

Coppice with standards/ coppice no standards/ ride edge/ scalloped ride/ grassy bank/ other:

Regrowth type - oak/ holly/conifer/mixed broadleaves/ other:

Age of coupe/ clearance: (known/ estimated)

MANAGEMENT NOTES / RECOMMENDATIONS:

***** Beaufort scale:

0	Calm – smoke rises vertically
1	Light air - slight smoke drift
2	Light Breeze - wind felt on face, leaves rustle
3	Gentle Breeze - leaves & twigs in constant motion
4	Moderate Breeze - raises dust & small branches
5	Fresh Breeze - small trees in leaf begin in sway
6	*Strong Breeze – large branches move & sway*

***** Foodplant rank abundance scale:

0	Absent
1	Rare - a few plants only
2	Scarce - a few patches present
3	Frequent - patches always in view
4	Common - ground cover more than 10%
5	Abundant - ground cover more than 40%

OTHER RECORDS:	**DATA FLOW? (Circle):**	surveyor to pass to county recorder/s **OR** submit via BC

Species:	Grid ref:	No/ stage/ notes:

Appendix D: Monitoring protocols

Definition of a colony.

Over most of its distribution, the Heath Fritillary exists in a metapopulation structure with a number of sites supporting sub-populations which may in turn be composed of several colonies. Mixing of individuals between sub-populations (i.e. between colonies in a single 'site') is assumed to occur infrequently with movement of individuals between sites occurring only occasionally.

Individuals freely able to move between habitat patches are considered to form one colony. The determination of an individual colony is therefore based on the separation of observed flight areas by either a distance of 300m of the existence of a barrier of unsuitable habitat which probably restricts the free interchange of individuals. For the purpose of monitoring in the Tamar and Lydford Valleys, the extent of suitable habitat within the coppice coupes in which adults were seen or the limits of individuals recorded for sections of ride or grassland, have been used to define the colony boundaries.

This definition is based on original work by Warren *et al.* (1984) with the addition of a distance figure representing a modification given in the 1995 Butterfly Conservation Species Action Plan (Barnett and Warren 1995) which gives: “a group of individuals that occurs in a discreet area and is separated from other groups by at least 300m of apparently unsuitable habitat.”

Sightings of one or two butterflies in suitable habitat with a Cow-wheat abundance score of >2 are considered to indicate the presence of a colony.

Appendix E: Heath Fritillary Timed Count data for Greenscoombe Wood 2022

Note: Red text highlights the highest total HF recorded for a single survey visit for each colony

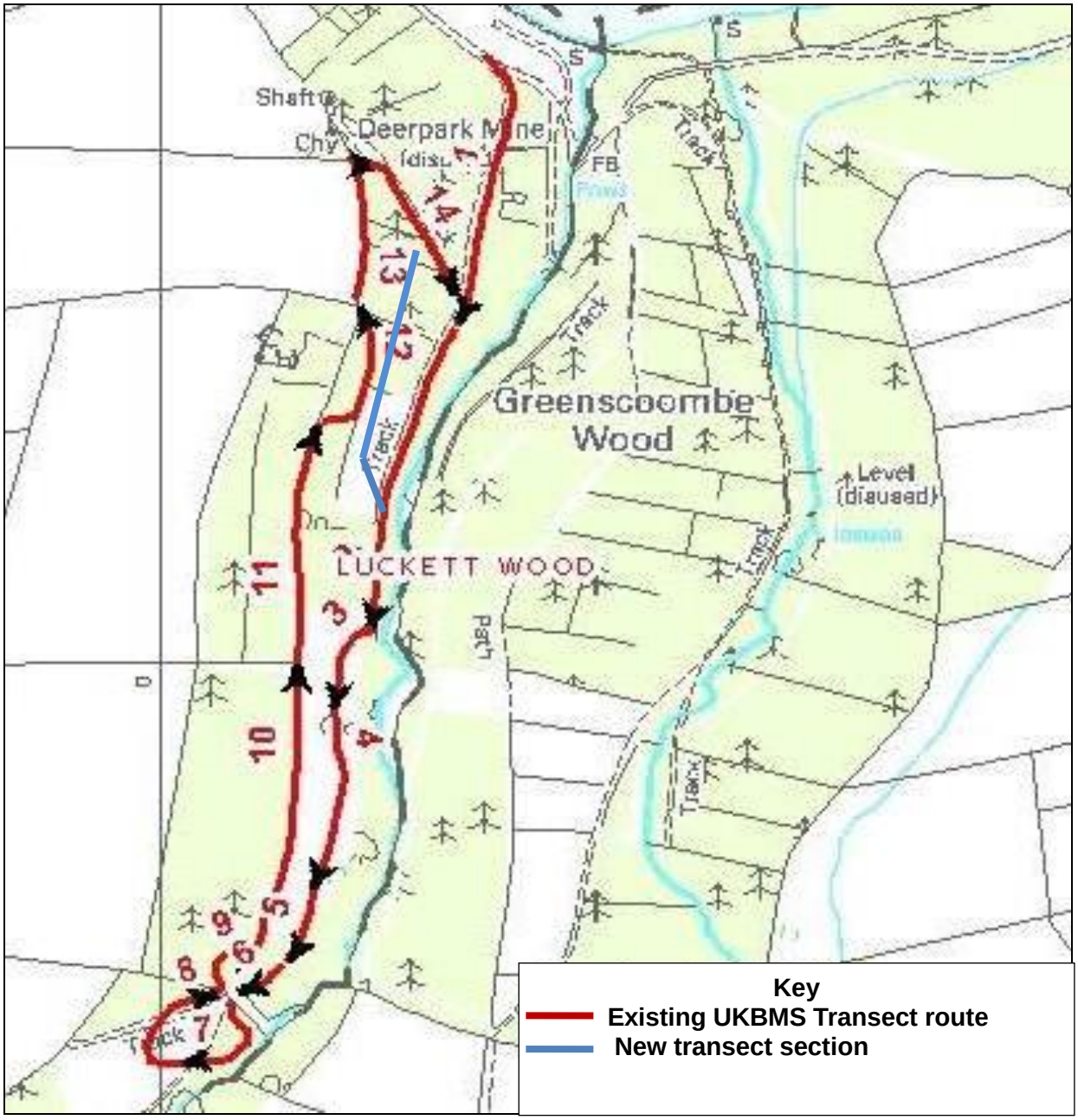
Site name	Colony name/ref	Sub-patch name/ref	Central Grid ref	Date	Recorder	mean temp 0C	% sunshine	max windspeed	No: seen	Time searched (mins)	Flight area (Ha)	Step 1: Encounter rate (No seen/ Hr)	Step 2: Encounter rate * area	Estimated population size	Size category
Greenscor	GW1 (West)	Bottom Ride	SX3915 7245		JP										
Greenscor	GW1 (West)	Cpt 1	SX3911 7256	24/05/2022	JP	17	80	0	**4**	5					
Greenscor	GW1 (West)	Cpt 2	SX3910 7248	24/05/2022	JP	17	80	0	**0**	5					
Greenscor	GW1 (West)	Cpt 3	SX3910 7240	24/05/2022	JP	17	80	0	**0**	5					
Greenscor	GW1 (West)	Penneys piece	SX3898 7227												
Greenscor	GW1 (West)	Top Ride	SX3909 7257												
	Total GW1								**4**	**15**					
Greenscor	GW2 (West)	Cpt 5	SX3913 7267	24/05/2022	JP	17	40	0	**0**	5					
Greenscor	GW2 (West)	Cpt 6	SX3912 7273	24/05/2022	JP	17	20	0	**0**	5					
Greenscor	GW2 (West)	Cpt 7	SX3915 7280	24/05/2022	JP	17	90	0	**0**	5					
Greenscor	GW1/2 (West)	Oak standards	SX3912 7262	24/05/2022	JP	17	80	0	**0**	5					
	Total GW2								**0**	**20**					
Greenscor	GW3 (East)	S1	SX3927 7259	24/05/2022	JP	17	90	2	**54**	5					
Greenscor	GW3 (East)	S2	SX3926 7263	24/05/2022	JP	17	100	2	**31**	5					
Greenscor	GW3 (East)	S3	SX3929 7266	24/05/2022	JP	17	100	2	**0**	5					
Greenscor	GW3 (East)	Cpt 1	SX3932 7258	24/05/2022	JP	17	100	0	**22**	5					
Greenscor	GW3 (East)	Cpt 1a	SX3932 7255	24/05/2022	JP	17	80	1	**8**	5					
Greenscor	GW3 (East)	Cpt 2a	SX3931 7251												
Greenscor	GW3 (East)	Cpt 2b	SX3930 7247												
Greenscor	GW3 (East)	Cpt 3a	SX3932 7262	24/05/2022	JP	17	100	2	**6**	5					
Greenscor	GW3 (East)	Cpt 3b	SX3937 7261												
Greenscor	GW3 (East)	Cpt 4	SX3934 7265	24/05/2022	JP	17	100	1	**4**	5					
Greenscor	GW3 (East)	M1	SX3926 7256	24/05/2022	JP	17	80	2	**1**	5					
Greenscor	GW3 (East)	M2	SX3927 7252	24/05/2022	JP	17	80	1	**0**	5					
Greenscor	GW3 (East)	M3	SX3927 7248	24/05/2022	JP	17	80	1	**0**	5					
Greenscor	GW3 (East)	M4	SX3926 7242	24/05/2022	JP	17	80	1	**0**	5					
Greenscor	GW3 (East)	Fire Break	SX3920 7260	24/05/2022	JP	17	50	2	**3**	5					
Greenscor	GW3 (East)	Top Ride	SX3924 7251	24/05/2022	JP	17	80	3	**8**	5					
Greenscor	GW3 (East)	Bottom Ride	SX3933 7252	24/05/2022	JP	17	50	1	**0**	5					
	Total GW3								**137**	**70**					

Site name	Colony name/ref	Sub-patch name/ref	Central Grid ref	Date	Recorder	mean temp 0C	% sunshine	max windspeed	No: seen	Time searched (mins)	Flight area (Ha)	Step 1: Encounter rate (No seen/ Hr)	Step 2: Encounter rate * area	Estimated population size	Size category
Greenscor	GW1 (West)	Bottom Ride	SX3915 7245	27/05/2022	JP	17	100	1	**0**	10					
Greenscor	GW1 (West)	Cpt 1	SX3911 7256	27/05/2022	JP	17	100	1	**5**	5					
Greenscor	GW1 (West)	Cpt 2	SX3910 7248	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW1 (West)	Cpt 3	SX3910 7240	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW1 (West)	Penneys piece	SX3898 7227	27/05/2022		17	100	2	**0**	5					
Greenscor	GW1 (West)	Top Ride	SX3909 7257	27/05/2022	JP	17	100	1	**0**	10					
	Total GW1								**5**	**34**					
Greenscor	GW2 (West)	Cpt 5	SX3913 7267	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW2 (West)	Cpt 6	SX3912 7273	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW2 (West)	Cpt 7	SX3915 7280	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW1/2 (West)	Oak standards	SX3912 7262	27/05/2022	JP	17	100	0	**0**	2					
	Total GW2								**0**	**8**					
Greenscor	GW3 (East)	S1	SX3927 7259	27/05/2022	JP	17	100	1	**68**	5					
Greenscor	GW3 (East)	S2	SX3926 7263	27/05/2022	JP	17	100	2	**13**	5					
Greenscor	GW3 (East)	S3	SX3929 7266	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW3 (East)	Cpt 4	SX3934 7265	27/05/2022	JP	17	100	0	**12**	5					
Greenscor	GW3 (East)	Cpt 1	SX3932 7258	27/05/2022	JP	17	100	1	**23**	5					
Greenscor	GW3 (East)	Cpt 1a	SX3932 7255	27/05/2022	JP	17	100	1	**12**	5					
Greenscor	GW3 (East)	Cpt 2a	SX3931 7251												
Greenscor	GW3 (East)	Cpt 2b	SX3930 7247												
Greenscor	GW3 (East)	Cpt 3a	SX3932 7262	27/05/2022	JP	17	100	0	**10**	5					
Greenscor	GW3 (East)	Cpt 3b	SX3937 7261												
Greenscor	GW3 (East)	M1	SX3926 7256	27/05/2022	JP	17	100	1	**5**	5					
Greenscor	GW3 (East)	M2	SX3927 7252	27/05/2022	JP	17	100	0	**2**	5	0.054288	24.00			
Greenscor	GW3 (East)	M3	SX3927 7248	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW3 (East)	M4	SX3926 7242	27/05/2022	JP	17	100	0	**0**	2					
Greenscor	GW3 (East)	Fire Break	SX3920 7260	27/05/2022	JP	17	100	1	**4**	5	0.134861	48.00	6.47	18	
Greenscor	GW3 (East)	Top Ride	SX3924 7251	27/05/2022	JP	17	100	1	**5**	2					
Greenscor	GW3 (East)	Bottom Ride	SX3933 7252	27/05/2022		17	100							5	
	Total GW3								**154**	53			6.47	**18**	

Site name	Colony name/ref	Sub-patch name/ref	Central Grid ref	Date	Recorder	mean temp 0C	% sunshine	max windspeed	No: seen	Time searched (mins)	Flight area (Ha)	Step 1: Encounter rate (No seen/ Hr)	Step 2: Encounter rate * area	Estimated population size	Size category
Greenscor	GW1 (West)	Bottom Ride	SX3915 7245												
Greenscor	GW1 (West)	Cpt 1	SX3911 7256	11/06/2022	JP	18	100	0	**17**	5	0.270371	204.00	55.16	115	
Greenscor	GW1 (West)	Cpt 2	SX3910 7248	11/06/2022	JP	18	100	0	**0**	2					
Greenscor	GW1 (West)	Cpt 3	SX3910 7240	11/06/2022	JP	18	100	0	**3**	2	0.144991	90.00	13.05	31	**Medium**
Greenscor	GW1 (West)	Penneys piece	SX3898 7227												
Greenscor	GW1 (West)	Top Ride	SX3909 7257												
	Total GW1								**20**	**9**			**68.20**	**141**	
Greenscor	GW2 (West)	Cpt 5	SX3913 7267	11/06/2022	JP	18	60	0	**0**	2					
Greenscor	GW2 (West)	Cpt 6	SX3912 7273	11/06/2022	JP	18	100	0	**8**	5	0.096103	96.00	9.23	23	
Greenscor	GW2 (West)	Cpt 7	SX3915 7280	11/06/2022	JP	18	60	0	**0**	5					**Small**
Greenscor	GW1/2 (West)	Oak standards	SX3912 7262	11/06/2022	JP	18	60	0	**0**	2					
	Total GW2								**8**	**14**			**9.23**	**23**	
Greenscor	GW3 (East)	S1	SX3927 7259	11/06/2022	JP	18	80	2	**57**	5	0.207535	684.00	141.95	289	
Greenscor	GW3 (East)	S2	SX3926 7263	11/06/2022	JP	18	100	2	**52**	5	0.1873	624.00	116.88	239	
Greenscor	GW3 (East)	S3	SX3929 7266	11/06/2022	JP	18	100	1	**8**	5	0.132816	96.00	12.75	30	
Greenscor	GW3 (East)	Cpt 4	SX3934 7265	11/06/2022	JP	18	100	0	**17**	5	0.101499	204.00	20.71	46	
Greenscor	GW3 (East)	Cpt 1	SX3932 7258	11/06/2022	JP	18	100	0	**18**	5	0.103574	216.00	22.37	50	
Greenscor	GW3 (East)	Cpt 1a	SX3932 7255	11/06/2022	JP	18	80	2	**15**	5	0.060514	180.00	10.89	27	
Greenscor	GW3 (East)	Cpt 2a	SX3931 7251												
Greenscor	GW3 (East)	Cpt 2b	SX3930 7247												
Greenscor	GW3 (East)	Cpt 3a	SX3932 7262	11/06/2022	JP	18	100	0	**30**	5	0.132935	360.00	47.86	101	
Greenscor	GW3 (East)	Cpt 3b	SX3937 7261												**Large**
Greenscor	GW3 (East)	M1	SX3926 7256	11/06/2022	JP	18	100	2	**6**	5	0.167677	72.00	12.07	29	
Greenscor	GW3 (East)	M2	SX3927 7252	11/06/2022	JP	18	80	1	**0**	5					
Greenscor	GW3 (East)	M3	SX3927 7248	11/06/2022	JP	18	80	0	**2**	5	0.042869	24.00	1.03	7	
Greenscor	GW3 (East)	M4	SX3926 7242	11/06/2022	JP	18	100	0	**0**	5					
Greenscor	GW3 (East)	Fire Break	SX3920 7260	11/06/2022	JP	18	50	2	**0**	5					
Greenscor	GW3 (East)	Top Ride	SX3924 7251	11/06/2022	JP	18	80	2	**19**	5	0.113857	228.00	25.96	57	
Greenscor	GW3 (East)	Bottom Ride	SX3933 7252	11/06/2022	JP	18	50	2	**2**	2	0.21058	60.00	12.63	30	
	Total GW3								**226**	**67**			**425.10**	**857**	
				Max no. HF seen during a single survey visit					**254**	**90**					
										Total flight area	**2.16**				
										Overall Estimated Peak Population size			**1021.49**		

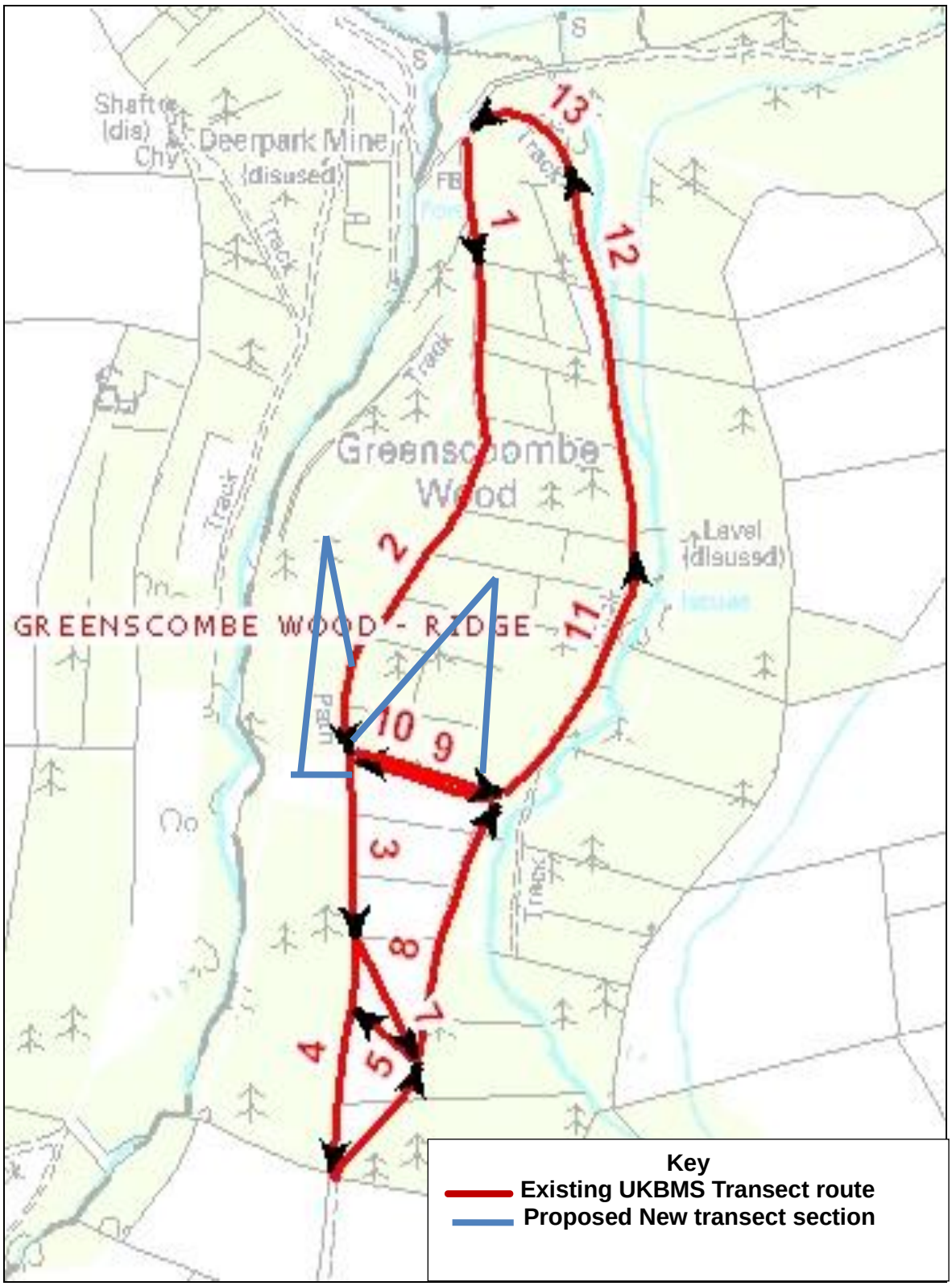
Appendix F: UKBMS Transect route and proposed additions

Luckett Wood

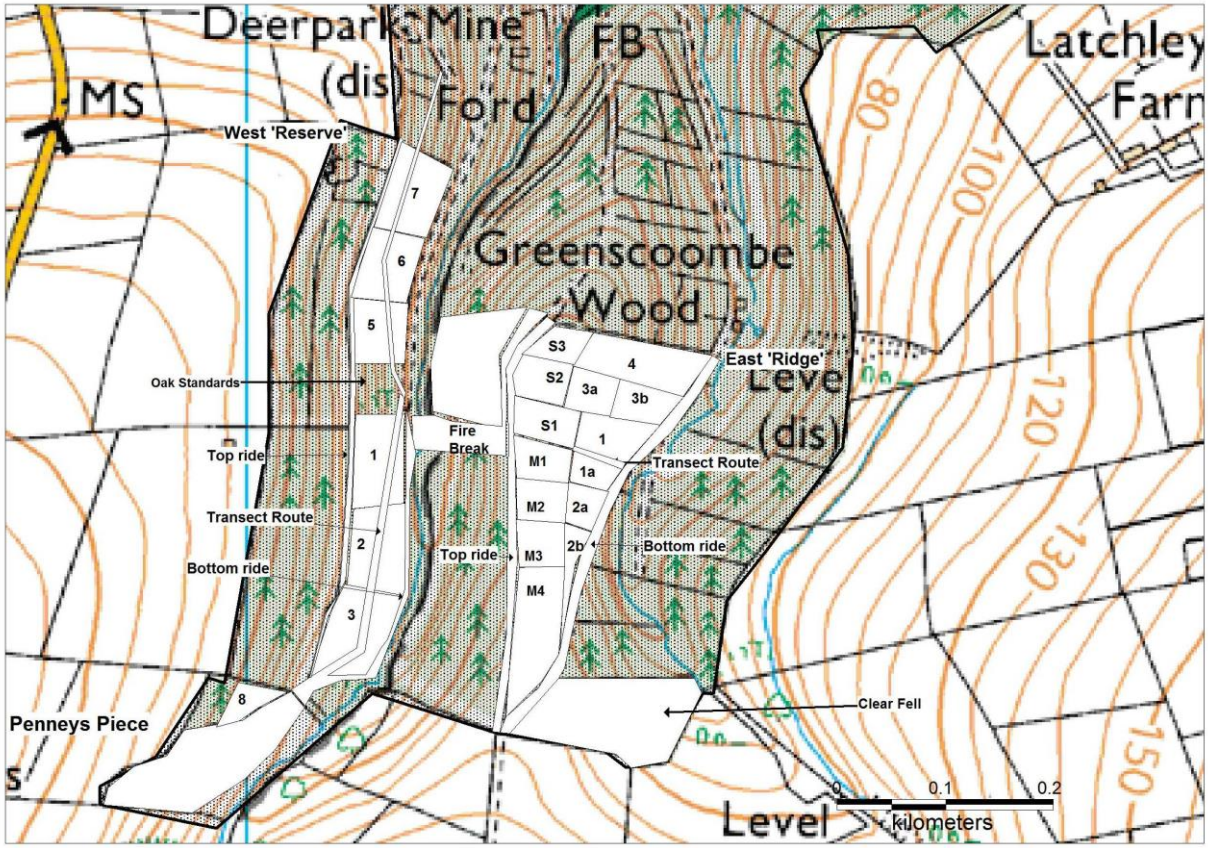


Appendix G: UKBMS Transect route and proposed additions

Greenscoombe Wood-Ridge



Appendix H. Greenscoombe Wood, Compartment Names



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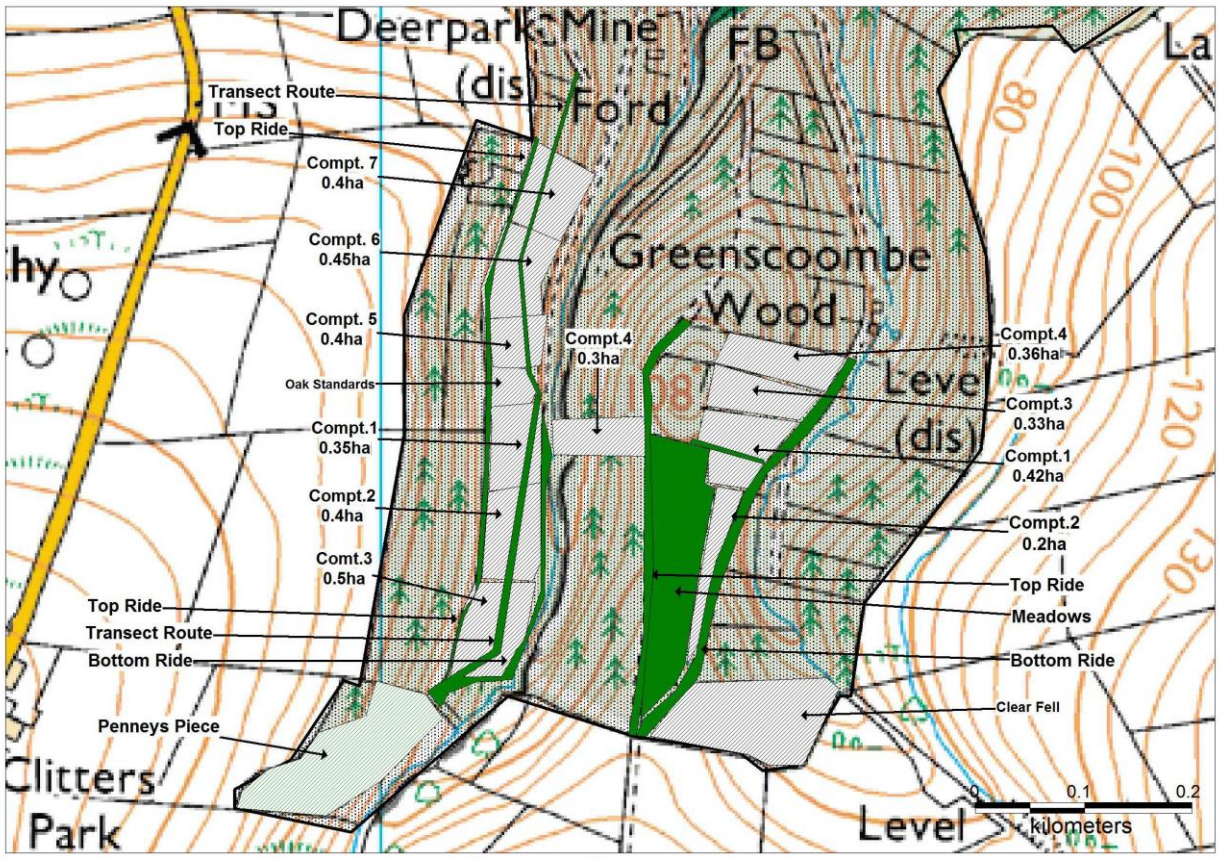

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Appendix I: Greenscoombe Wood management carried out winter 2021/22

Above: West Reserve GW1 coppicing

Above: West Reserve GW7 coppicing

Left: East Ridge coppicing in S1, S2, S3 – showing extensive Common cow-wheat habitat

ABOUT US

Butterfly Conservation is the UK charity dedicated to saving butterflies, moths and our natural environment. Founded in 1968, we are a leading authority on the conservation of these beautiful creatures – key indicators of a healthy ecosystem – and we have achieved numerous successes for them locally and nationally.

Our work is based on deep insight drawn from over 40 million monitoring records gathered over the past 50 years. We employ world-class conservation scientists, making us the world's largest research institute for butterflies and moths. Our data is used by government and policymakers to make a long-term difference for the environment.

We are actively involved in hands-on conservation throughout the UK, at every level from individual households to landscape-scale habitats. We operate over 30 nature reserves in England, Scotland and Wales, as well as 32 volunteer-run local branches making a huge difference in their communities.

We run projects to protect more than 50 threatened species, and we are involved in conserving hundreds of other sites and reserves across the UK.

We are proud to be supported by more than 40,000 members who share our passion for butterflies and moths. Every year we run one of the biggest citizen science projects in the world, the Big Butterfly Count, to engage more and more people with the natural world.

We work tirelessly to make a difference for butterflies, moths and our environment – and to benefit all wildlife and the ecosystems upon which life depends.

Read our 2021-26 Strategy