

Dartmoor and Exmoor

Fritillary monitoring results 2022



Butterfly Conservation Report Number S23-06

Butterfly Conservation
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Clockwise from top left: Small Pearl-bordered Fritillary, Marsh Fritillary, Heath Fritillary, High Brown Fritillary, Pearl-bordered Fritillary

Summary

Monitoring of the fritillary butterflies on Dartmoor and Exmoor has been carried out annually by volunteers and collated by Butterfly Conservation since 2005. This report presents the results from the 2022 surveys for High Brown Fritillary, Marsh Fritillary and Heath Fritillary, and includes abundance graphs showing the long term trends of these species since regular recording began. Results from Pearl-bordered and Small Pearl-bordered Fritillary surveys are also included, although long term trends have not been assessed for these species on Dartmoor.

The warm and sunny spring and summer weather offered good opportunities for surveying in optimal conditions in 2022, and fritillary butterfly numbers were good across both Dartmoor and Exmoor. The very hot and dry spell in summer 2022 occurred after the flight periods for these butterflies, so adult numbers were not affected by the extreme weather conditions. The progeny of these adults (all in their larval stages during the hot and dry period, except for the High Brown Fritillary which remains in its egg stage until the following spring) may have suffered, for example due to wilting and desiccation of larval foodplants, so there may be an impact from the extreme summer weather on the abundance in 2023.

High Brown Fritillary had a particularly good year on Dartmoor, with higher than average counts on most sites, and several sightings of 'wanderers' reported on sites remote from known breeding sites. The Exmoor colonies fared better than in 2021 and the long term trend remains positive.

Marsh Fritillary also fared well on Dartmoor overall, with many sites showing an increase on numbers recorded in recent years. Abundance in three of the four metapopulations has been increasing in recent years, suggesting that 2022 may prove to be a 'boom' year.

Heath Fritillary had a mixed year on Exmoor in 2022, with some sites doing reasonably well, whilst others fared poorly PBF/SPBF. The long term status of the butterfly on Exmoor remains stable.

Pearl-bordered Fritillary fared better in 2022 compared with the previous year, but it does appear that numbers have been falling over the past ten years or so. No analysis has been carried out to assess the longer term trend on Dartmoor as compared with the national trend for this species, because there isn't sufficient data collected from a consistent set of sites to enable the analysis to be made.

Small Pearl-bordered Fritillary appears to be stable on Dartmoor, but annual surveys for this species have only been undertaken in recent years, and more survey effort is required.

The results of all surveys are presented below. Maps show the location of occupied habitat and graphs display the species' population indices across Dartmoor and Exmoor set against the national trend for comparison. Results for Pearl-bordered Fritillary and Small Pearl-bordered Fritillary are also presented, although there was insufficient data to enable a regional trend to be calculated. Graphs for species abundance in individual landscape areas are displayed in the appendices, along with the raw data.

High Brown Fritillary in Dartmoor

In **Dartmoor**, the High Brown Fritillary had another good year, with five sites achieving the highest results from timed counts in the twenty years since annual monitoring began (2002).

Fourteen sites were visited as part of the annual monitoring programme, and 13 were occupied. Additional sightings were made of individuals in three sites quite distant from the known breeding areas, as wanderers headed to find nectar and potentially seek new breeding habitat.

In the Dart Valley, Hembury Fort and Aish Tor had a particularly good year. These sites offer highly suitable breeding habitat with abundant Common dog-violet growing amongst bracken. Management is carried out to create an extensive network of tracks throughout the bracken, which provide excellent opportunities for the adult female butterflies to find violets growing in open, sunny locations for egg laying. Good numbers were also recorded at Blackadon Common, whilst Newbridge Hill remained stable. Management to control scrub at Newbridge Hill is planned for this year.

In the Walkham Valley, good numbers were recorded at West Down and parts of Roborough Down (Buck Tor), although North Roborough Down (Uppaton Combe) saw a sharp drop in numbers in 2022 compared with the previous year. Management has recently been carried out at Bucktor to remove invading scrub from key breeding areas, and work is due to take place on West Down this year too.

Butterfly Conservation works with local partners, including Devon Wildlife Trust, Dartmoor National Park, The National Trust and the Dartmoor Commoners, and volunteers from the Dartmoor Preservation Association to manage the bracken habitats to create suitable conditions for breeding.

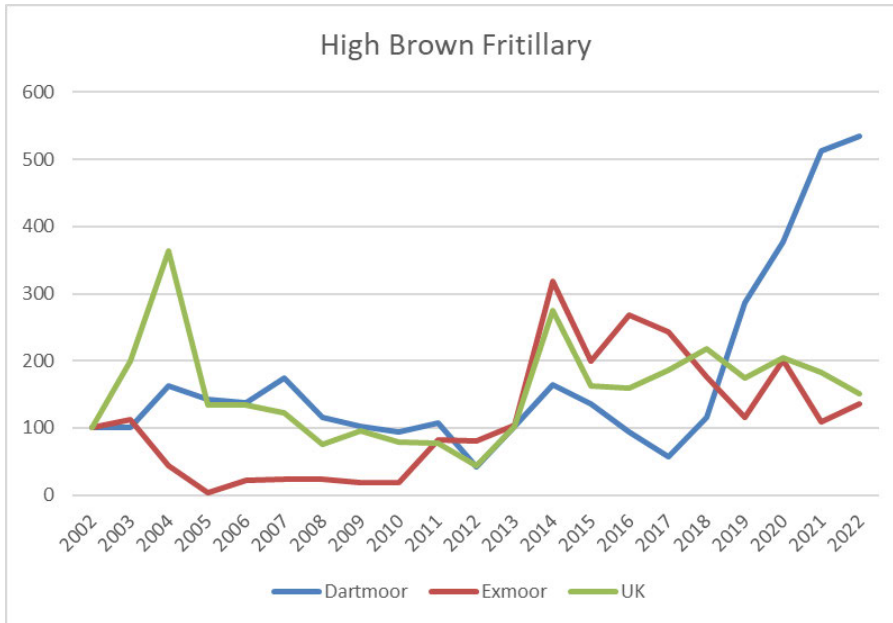
In 2022, advice has been provided and practical management has been undertaken across an area of approximately 10ha, in partnership with and part funded by the 'Our Upland Commons' project, and grants from Dartmoor National Park Authority and the Devon Environment Fund, with additional works carried out by several volunteer work parties.

Overall abundance of the butterfly on Dartmoor shows a Moderate increase ($p < 0.01$) ** of 165% since 2002, whilst the national UK trend showed a 39% increase.

Nationally, the threatened status of the High Brown Fritillary has been reduced from 'Critically Endangered' to 'Endangered' in the new 2022 Red List, which was published in May 2022 and assesses the extinction risk for all our British butterfly species.

The Dark Green Fritillary, which has historically been recorded in good numbers across all the High Brown sites on Dartmoor, had another poor year overall. It appears that the Dark Green may be declining on Dartmoor, although this does not appear to be the case across other parts of its range.

See population graph (Figure 1) and distribution map (Figure 2) below, and raw data and metapopulation graphs (Appendix 1).



Population trend over the period 2002-2022

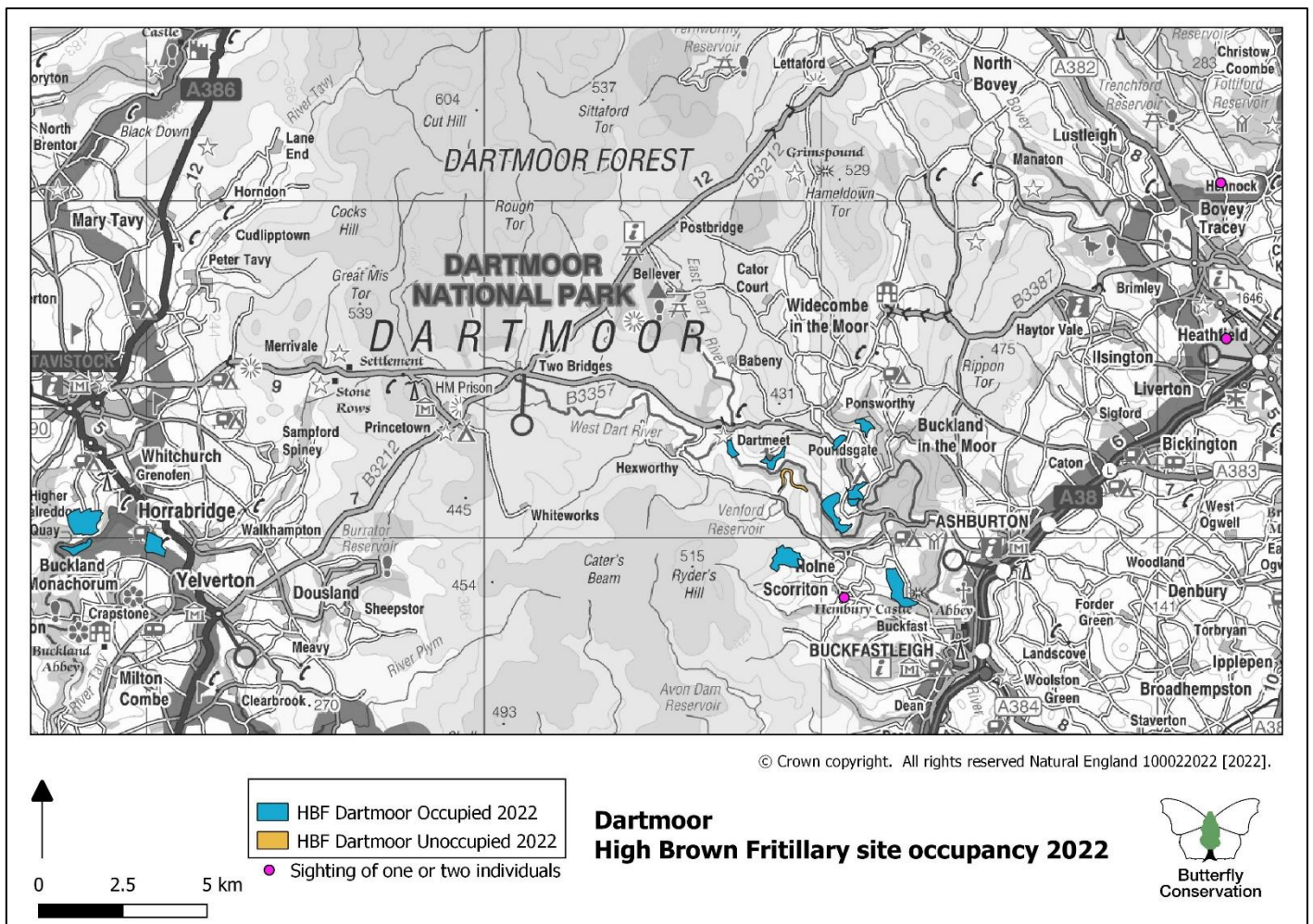
DARTMOOR:
MODERATE INCREASE
 165% increase since 2002

EXMOOR:
STRONG INCREASE
 875% increase since 2002

UK TREND:
 39% increase since 2002

Figure 1. Population trend of High Brown Fritillary on Dartmoor, Exmoor and the UK 2002-2022

Figure 2. High Brown Fritillary distribution across Dartmoor 2022



High Brown Fritillary in Exmoor

In **Exmoor**, High Brown Fritillary numbers increased compared with last year, although still fell below the high counts seen in 2014-18. Trentishoe Combe, Mill Farm/Kittitoe and Hardy Park all fared better than recent years, but Ladies Mile continues to decline. The bracken here is very dense and violet cover appears to be diminishing; plans to cut tracks through the bracken were thwarted by issues with the robotic flail.

Numbers fell at Kings Lane Slope, which is becoming quite grassy. New fencing will enable cattle grazing to return, which will hopefully address this. Alongside the cattle grazing and runnel/track cutting at Mill Farm, Mangalitsa pigs were introduced for a short period to create some ground disturbance. The impact of the pigs' rooting about will be closely monitored – it's not clear yet whether this is suitable management in short bursts, or not.

Four privately owned sites were surveyed, two of which were occupied, although numbers are modest compared with the Trust-owned sites.

Although High Brown Fritillary numbers have been less strong in the past four years, the long term trend in abundance on Exmoor shows a Strong increase ($p < 0.01$) ** of 875% since 2002, whilst the national UK trend showed a 39% increase.

Dark Green Fritillary numbers are similar to 2021, but still quite modest with the ratio of Dark Green to High Brown Fritillary averaging around 1:2.

See population graph (Figure 1, above) and distribution map (Figure 3, below), and raw data and metapopulation graphs (Appendix 2).

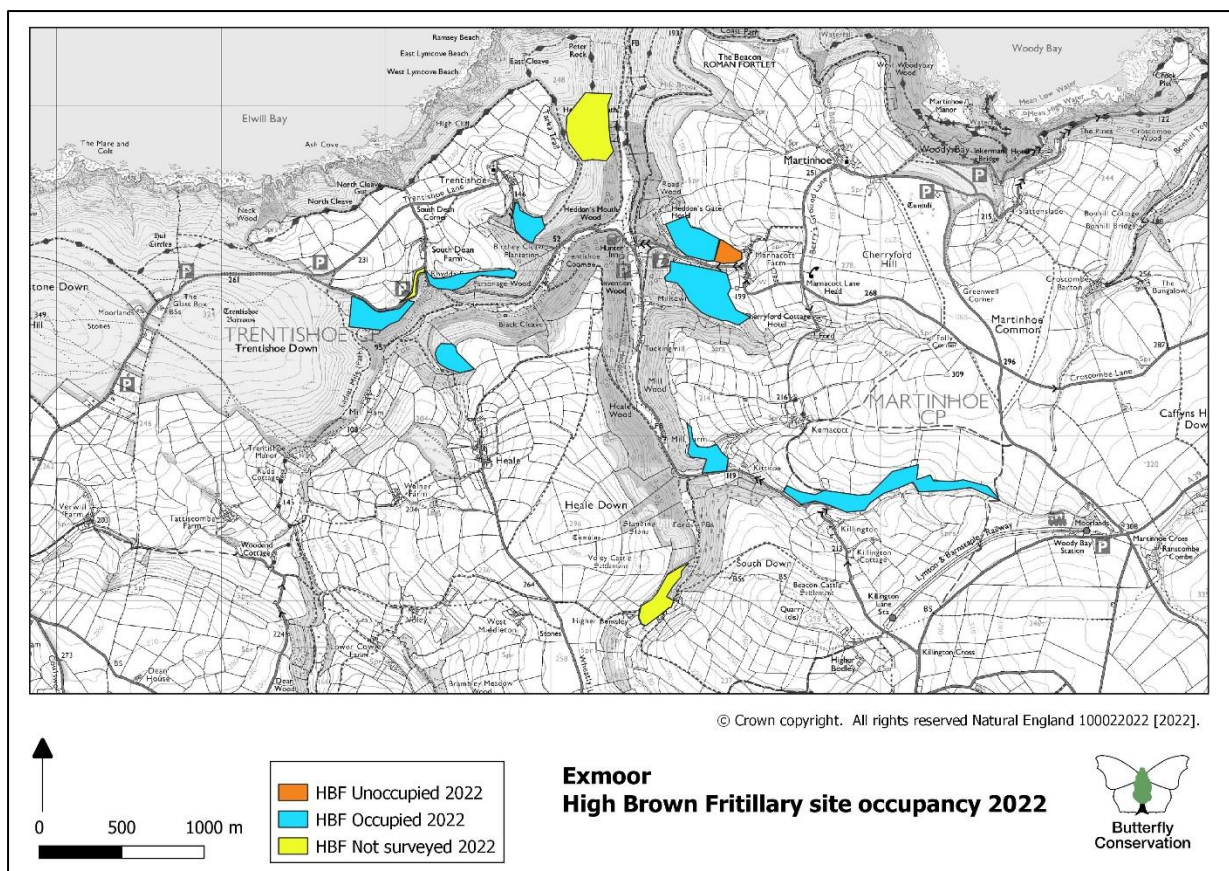


Figure 3. High Brown Fritillary distribution across Exmoor 2022

Marsh Fritillary

Marsh Fritillary had a very good year on Dartmoor, with overall numbers higher than in any year since 2005, apart from the very good year in 2014.

40 sites were visited in total during the adult and/or larval web survey period, and 33 of these were occupied.

The Fernworthy-Long Lane metapopulation achieved exceptionally high counts, with several sites recording their highest counts from the 18 year series. Marsh Fritillary is known to have a 'boom-bust' population cycle, and it appeared that many sites in this network were rising towards a peak year. Langaford Farm stands out, with an adult butterfly count of 133 and larval web count of 250.

The Postbridge-West Webburn system also achieved higher counts than have been recorded in recent years, as did the Tor Valley sites, where one site was recolonised following no records since 2015.

The Tavy Valley is a cause for concern, with larval webs recorded at only one site. Management and grazing advice has been provided to all sites, and sites will continue to be monitored.

The long term trend in Marsh Fritillary abundance on Dartmoor shows a Moderate increase ($p < 0.01$) ** of 472% since 2005, against a nationally decreasing trend (16% decline).

See population graph (Figure 4) and distribution map (Figure 5) below, and raw data and metapopulation graphs (Appendix 3).

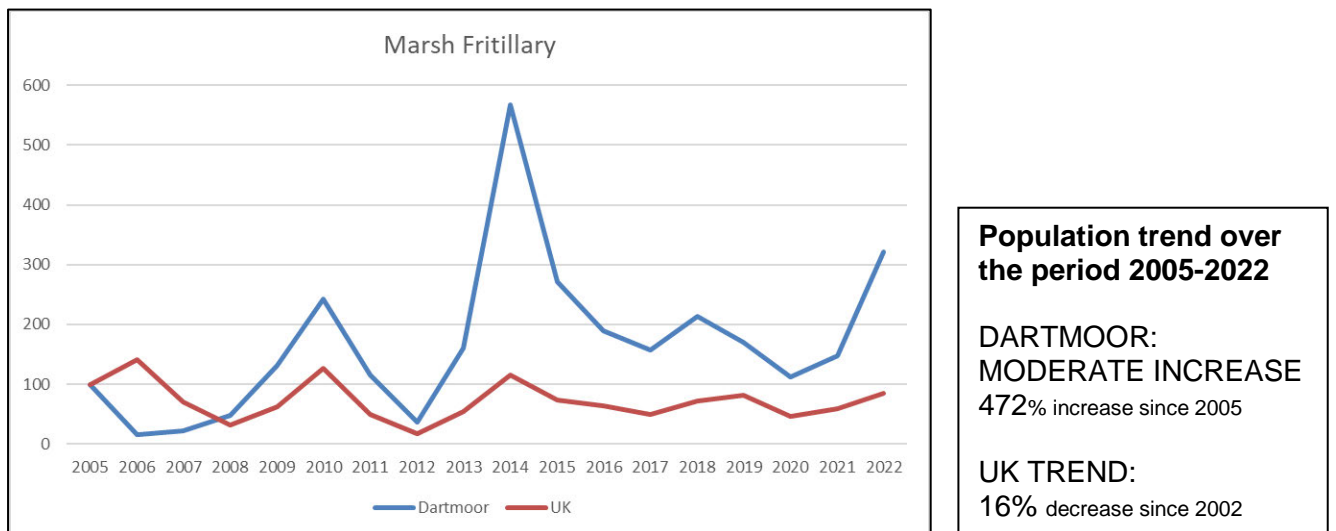


Figure 4. Population trend of Marsh Fritillary on Dartmoor and the UK 2005-2022

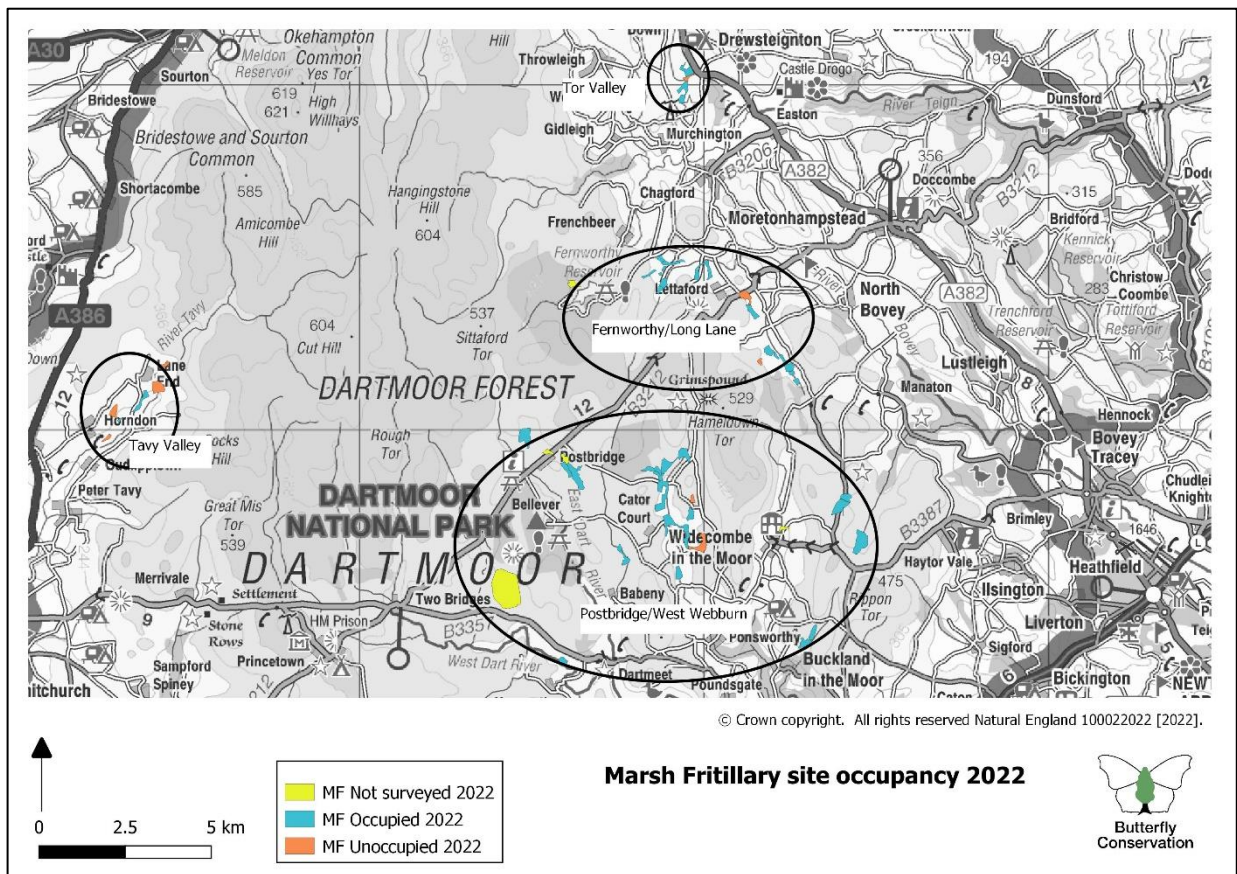


Figure 5. Marsh Fritillary distribution across Dartmoor 2022

Heath Fritillary

Heath Fritillary had a mixed year on Exmoor in 2022, with some sites doing reasonably well, whilst others fared poorly. Surveys were carried out at 18 sites, and 16 sites were occupied.

On the Holnicote Estate, especially good numbers were recorded at Aller Combe, Hollow Combe and Sweetworthy Combe. Two of the 'good' sites showed notable declines, at Bin Combe and Halse Combe, which is a cause for concern.

On the Grabbist Ridge, good numbers were recorded in the area around Hole's Corner, but elsewhere very few were recorded. Efforts to manage bracken and scrub invasion continue here, and there are good patches of breeding habitat in recently managed areas.

Haddon Hill fared less well, and numbers dropped to the levels recorded during the low point in 2012-15, despite considerable volunteer effort to keep invading scrub at bay.

The introduction site at Hawkcombe Wood also saw declines in both larval numbers and adult butterflies (only 10 butterflies seen). New clearings have been made in woodland adjacent to the introduction site, and food plant presence and other vegetation factors suggest the site should be suitable, so it is unclear why the butterfly is not thriving here. It may be that surveys were mis-timed and missed the peak flight period; further survey effort this year is required.

No sightings were made at Bagley Combe or Hopcott Common/Perriton Combe (both only occupied in occasional years), and no survey was undertaken at Nutscale in 2022.

Despite considerable ups and downs over the years, the long term population trend for Heath Fritillary on Exmoor is stable, against a backdrop of long term decline (-16%) in the UK.

See population graph (Figure 6) and distribution map (Figure 7) below, and raw data and metapopulation graphs (Appendix 4).

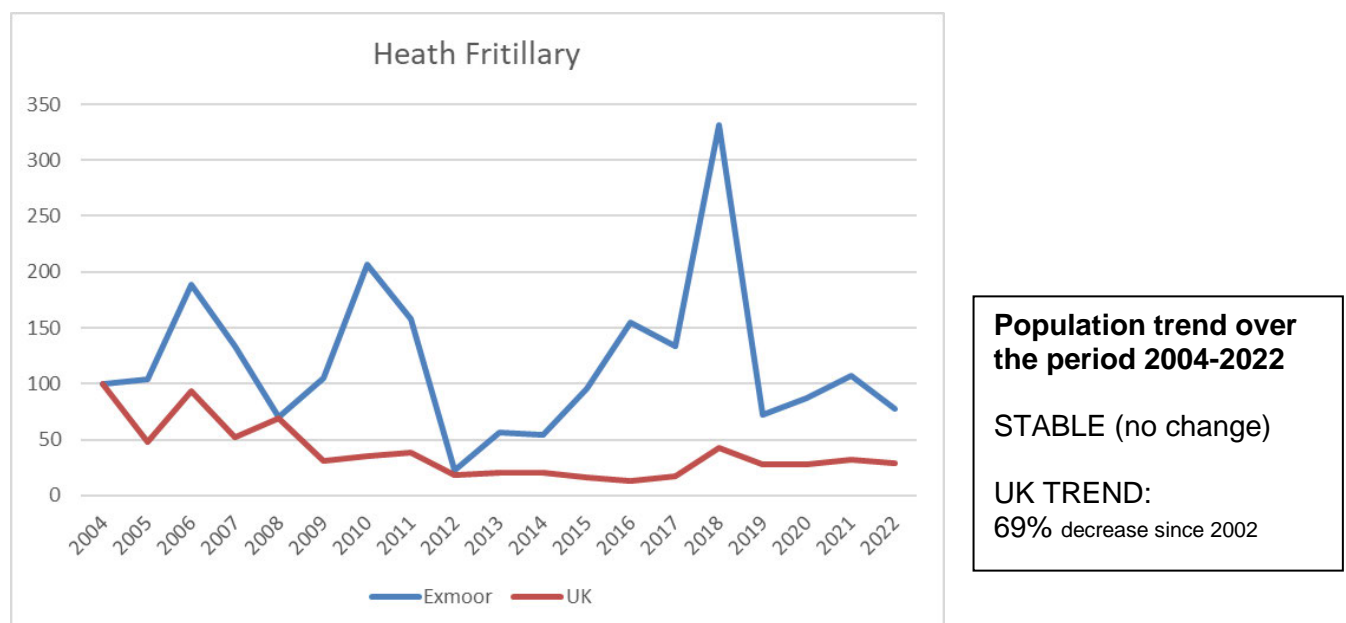


Figure 6. Population trend of Heath Fritillary on Exmoor and the UK 2004-2022

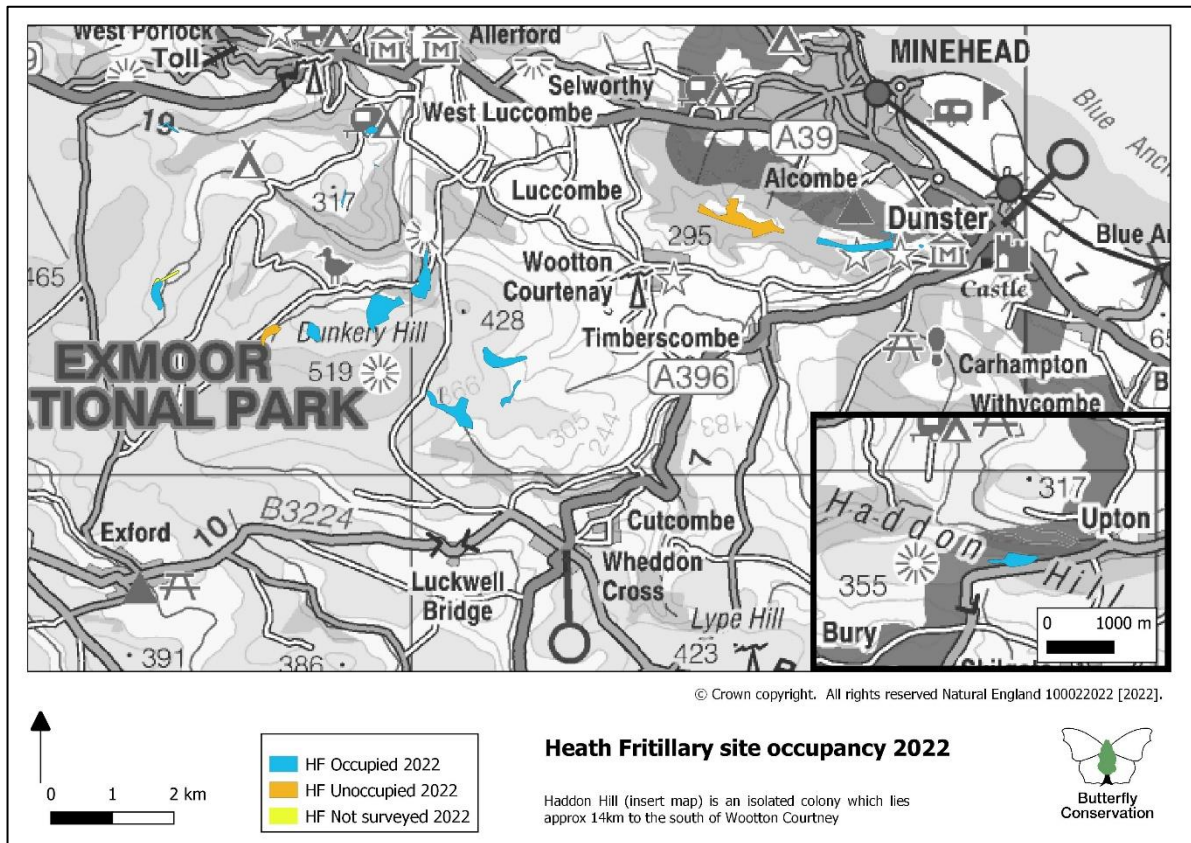


Figure 7. Heath Fritillary distribution across Exmoor 2022

Pearl-bordered Fritillary

26 Pearl-bordered Fritillary sites were surveyed, and all but 3 were occupied. It was a mixed picture with some sites showing increases and some decreases on numbers in recent years, although the longer term trend appears to show a moderate decline for this species.

Worryingly, no Pearl-bordered Fritillary were seen at all for the second year at the Roborough Common and West Down sites. Further survey effort is required, but the species may have been lost from this part of Dartmoor.

See raw data and metapopulation graphs below (Appendix 5).

Small Pearl-bordered Fritillary

Small Pearl-bordered Fritillary was recorded at 27 sites across the moor, 16 dry bracken sites (where Common dog-violet is the main food plant) and 11 rhes pasture/wet grassland sites (where Marsh violet is the main foodplant). Numbers appear stable but more targeted survey effort is required for this species in order to assess the long term trend. The butterfly is frequently recorded by surveyors whose primary focus is Pearl-bordered Fritillary (on the dry bracken sites) or Marsh Fritillary (on the wet grassland sites). Therefore timing of the survey visits have not necessarily been focused on timing of the peak in the flight period of the Small Pearl-bordered, so numbers recorded may be lower. More targeted survey effort is required to assess the status of the butterfly on Dartmoor.

See raw data below (Appendix 6).

Acknowledgements

With grateful thanks to all those who have helped with the 2022 monitoring programme, including staff and volunteers from Butterfly Conservation, Natural England, Dartmoor National Park, Exmoor National Park, Devon Wildlife Trust, The National Trust, and Westcountry Rivers Trust – thank you so much for all your efforts, and please do help again in 2023!

Thanks too to the many land managers, commoners and landowners who are working hard to keep their fritillary habitat in good condition to enable the butterflies to thrive on their land.

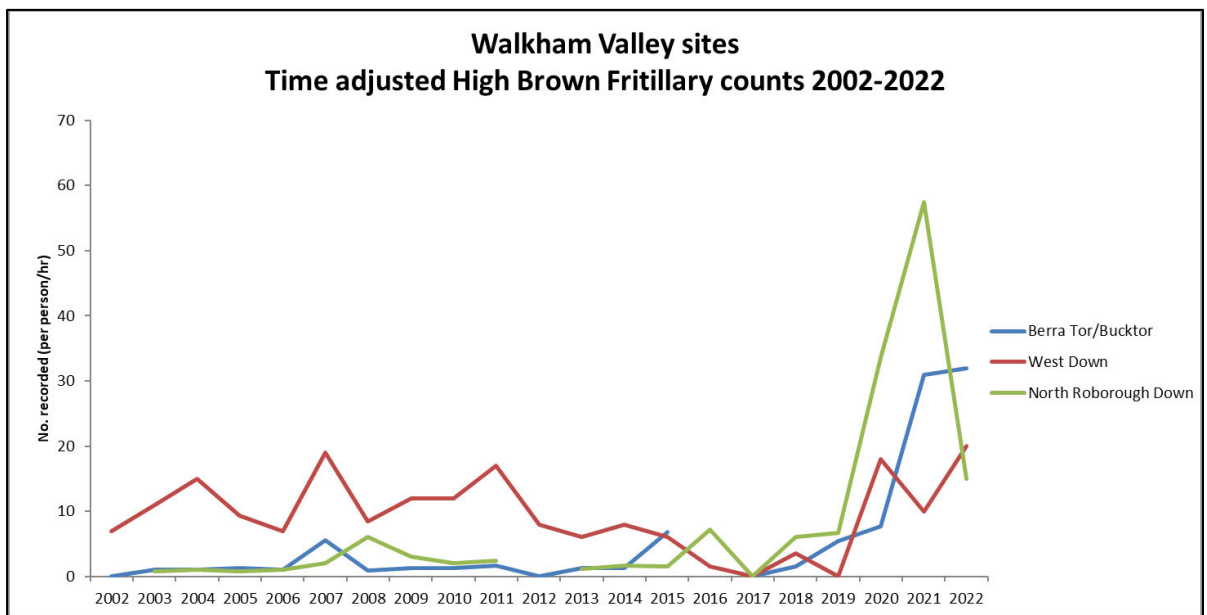
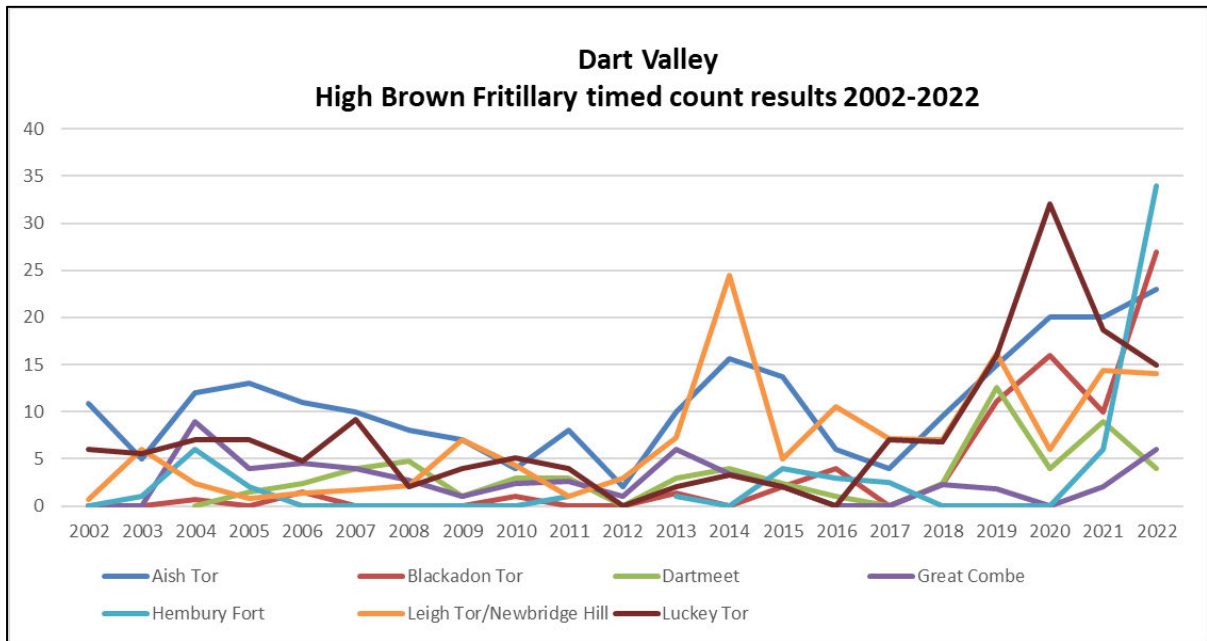
██████████
Regional Conservation Manager
██████████@butterfly-conservation.org ██████████

Appendix 1: Dartmoor High Brown Fritillary

Species	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search	DGF	HB/DGF	HB Time adjusted
HBF	Aish Tor	SX705705	15/06/2022	Jenny Plackett	22	100	0	12	45	2	15	16.0
HBF	Aish Tor	SX707710	08/06/2022	Michael Park	15	81	4	4	85			2.8
HBF	Aish Tor	SX707710	12/06/2022	Michael Park	19	98	3	6	75	1		4.8
HBF	Aish Tor	SX707710	17/06/2022	Michael Park	27	100	3	35	100	2		21.0
HBF	Aish Tor	SX707710	26/06/2022	Michael Park	17	95	4	29	75	0		23.2
HBF	Aish Tor	SX707710	06/07/2022	Michael Park	22	91	2	11	70	0		9.4
HBF	Aish Tor	SX707710	14/06/2022	Michael Park	21	100	2	5	85	0		3.5
HBF	Aish Tor	SX707710	18/06/2022	Michael Park	29	100	1	1	90	0		0.7
HBF	Aish Tor	SX707710	26/06/2022	Michael Park	21	31	2	0	85	0		0.0
HBF	Aish Tor	SX707710	29/06/2022	Michael Park	24	90	2	1	85	1		0.7
HBF	Blackadon	SX713732	15/06/2022	Jenny Plackett	22	80	0	9	20	0	11	27.0
HBF	Brook Manor	SX 713 677	15/06/2022	David Turrell				2	15			8.0
HBF	Dartmeet South	SX673725	16/06/2022	Jenny Plackett	20	100	0	0	20	0	0	0.0
HBF	Dartmeet South	SX673725	17/0/2022	Julia Simons				2	30			4.0
HBF	Great Combe, Holne Moor	SX688692	10/06/2022	Jenny Plackett	17	70	1	2	30	0	0	4.0
HBF	Great Combe, Holne Moor	SX688692	16/06/2022	Jenny Plackett	20	100	0	2	20	0	4	6.0
HBF	Great Combe - Michelcombe Farm	SX693694	16/06/2022	Jenny Plackett	20	100	0	2	15	0	8	8.0
HBF	Great Plantation	SX825755	27/06/2022	David Turrell				1	60			1.0
HBF	Hembury Woods (fort)	SX727685	15/06/2022	David Turrell	22	70	0	17	30	2	15	34.0
HBF	Hembury Woods	SX725684	15/06/2022	David Turrell	22	70	0	10		2	15	<i>Not timed</i>
HBF	Luckey Tor	SX685723	15/06/2022	Jenny Plackett	22	100	0	10	40	2	9	15.0
HBF	Leusdon	SX707723	15/06/2022	Jenny Plackett	22	100	0	1	12	0	4	5.0
HBF	Lower Bowden	SX819803		via John Rickett				1				<i>Not timed</i>
HBF	Newbridge Hill	SX709712	15/06/2022	Jenny Plackett	22	80	0	7	30	0	9	14.0
HBF	Venford Reservoir	SX689717	10/06/2022	Jenny Plackett	17	70	1	0	20	0	0	0.0
HBF	Berra Tor B	SX474697	20/06/2022	Kevin & Jacki Solman	17	100	2	8	15	2	0	32.0
HBF	Walkham Valley - Bucktor	SX476697	21/06/2022	Jenny Plackett	20	80	0	9	40	2	14	13.5
HBF	Walkham Valley - Bucktor	SX476697	03/07/2022	Norman Baldock	16	0	1	4	33	3	2	7.3
HBF	Walkham Valley - Bucktor	SX476697	20/06/2022	Kevin & Jacki Solman	15	90	2	5	20			15.0
HBF	Walkham Valley - North Roborough Down - lower area by viaduct	SX503698	21/06/2022	Jenny Plackett	22	100	0	7	30	3	5	14.0
HBF	Walkham Valley - North Roborough Down - lower area by viaduct	SX503698	03/07/2022	Norman Baldock	17	20	0	8	33	8	19	14.5
HBF	Walkham Valley - North Roborough Down - lower area by viaduct	SX503698	20/06/2022	Kevin & Jacki Solman	18	100	2	0	20	2	2	0.0
HBF	Walkham Valley - West Down	SX484703	11/06/2022	Jenny Plackett	20	80	1	15	45	3	20	20.0
HBF	Walkham Valley - West Down	SX484703	18/06/2022	Jenny Plackett	20	40	0	8	25			19.2

Dartmoor High Brown Fritillary timed count data 2022

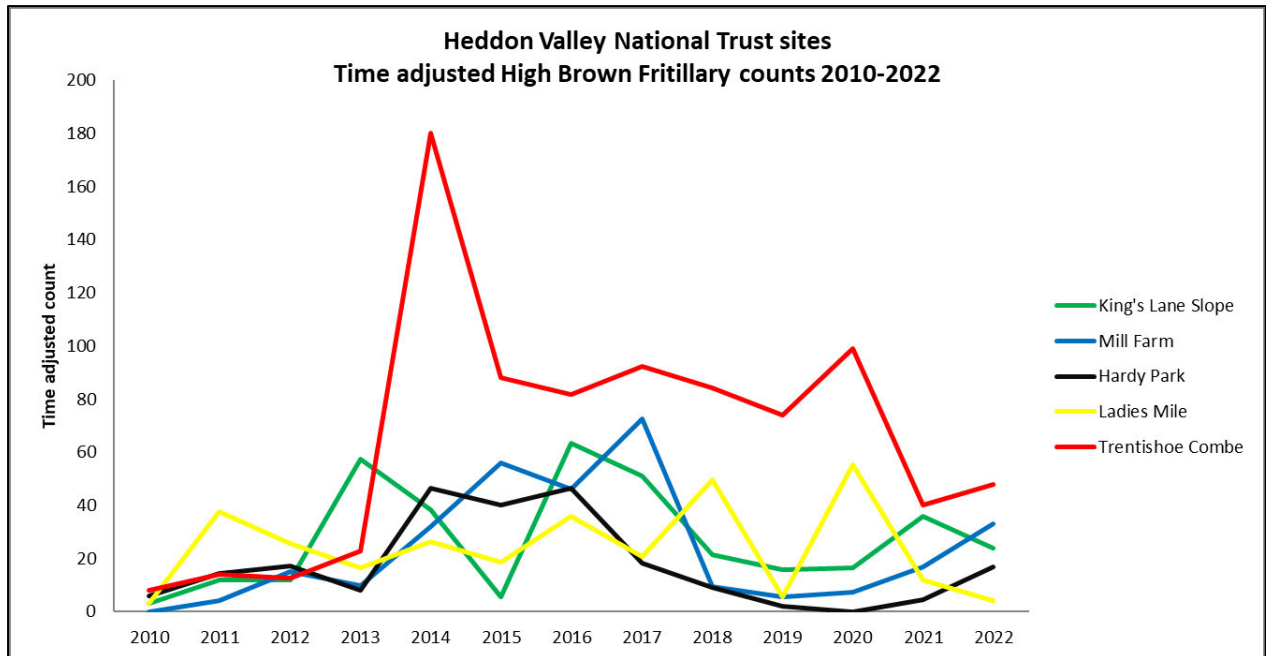
Appendix 1: Dartmoor High Brown Fritillary (cont).



Appendix 2: Exmoor High Brown Fritillary

Species	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search	DGF	Hb/DGF	HBF Time adjusted
HBF	Trentishoe Combe	SS649483	14/06/2022	Matthew Oates	23	100	0	52	65	29	5	48
HBF	Mill Farm/Kittitoe	SS660469	14/06/2022	Matthew Oates	23	100	0	36	65	18	10	33.2307692
HBF	King's Lane Slope	SS659482	14/06/2022	Matthew Oates	23	100	0	14	35	4	3	24
HBF	Hardy Park	SS660477	17/06/2022	Jenny Plackett	25	100	2	7	25	7	15	16.8
HBF	Ladies Mile main slope	SS641477	20/06/2022	Jenny Plackett	22	100	0	2	30	7	15	4
HBF	Rhydda Bank	SS644479	14/06/2022	Matthew Oates	23	100	0	1		2		Not timed
HBF	Heale Brake	SS644475	17/06/2022	Jenny Plackett	22	100	2	5	20	1	15	15
HBF	Killington Farm	SS674467	17/06/2022	Jenny Plackett	22	100	2	0	15	0	0	0
HBF	Kemacott Farm	SS671467	17/06/2022	Jenny Plackett	22	100	2	2	30	0	3	4
HBF	Manacott Farm	SS661481	17/06/2022	Jenny Plackett	22	100	2	0	20	0	1	0

Exmoor High Brown Fritillary timed count data 2022



Appendix 3: Dartmoor Marsh Fritillary

Nf2: TIMED COUNT DATA SHEET				This sheet is designed for data recorded on the Nf1: Timed Count Recording View the comments attached to the column headings for guidance on data e						
Species	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search	
Marsh Fritillary	Blackaton Farm	SX690774	02/06/2022	Eleanor Baker	19			0	20	
Marsh Fritillary	Bowden farm	SX729737	02/06/2022	Eleanor Baker	19			5	60	
Marsh Fritillary	Broadaford Farm	SX695770	12/06/2022	Eleanor Baker	20		4	2	45	
Marsh Fritillary	Broadaford Farm	SX692771	28/05/2022	Rebecca Gethin	16	90	2	1	60	
Marsh Fritillary	Cator Blackaton	SX697783	17/08/2022	Wendy Couch	23	100	2	0	6	
Marsh Fritillary	Challacombe Farm	SX694793	07/06/2022	Claire Hyne + vols	14	5	4	29	134	
Marsh Fritillary	East Shallowford Farm	SX692758	09/06/2022	Eleanor Baker, Nigel Bowie	17	70	2	11	102	
Marsh Fritillary	DWT Emsworthy Mire alongside holwell b	SX741779	22/05/2022	Amanda Hunter		100	1	6	10	
Marsh Fritillary	DWT Emsworthy Mire alongside holwell b	SX740779	06/06/2022	David Turrell				13	15	
Marsh Fritillary	DWT Emsworthy Mire alongside holwell b	SX741778	11/06/2022	Andrew Taylor	17	70	4	18	30	
Marsh Fritillary	Great Cator	SX670774	10/06/2022	Wendy Couch	16	75	2	8	33	
Marsh Fritillary	Grendon Farm (North)	SX687778	07/06/2022	Eleanor Baker +2	16	90	3	12	20	
Marsh Fritillary	Grendon Farm (south)	SX687784	12/06/2022	Eleanor Baker +2	20		4	2	90	
Marsh Fritillary	Heckwood Farm	SX544733	17/06/2022	Rachel Kaleta, DWT	22	100	1	5	45	
Marsh Fritillary	Hilltown Farm	SX534805	16/06/2022	Rachel Kaleta & David Thomas, D	21	90	1	46	85	
Marsh Fritillary	Huccaby Farm	SX658733	09/06/2022	Eleanor Baker, Nigel Bowie	18	80	1	23	40	
Marsh Fritillary	Langafor	SX698845	19/05/2022	Hazel Jones	15	90	1	133	65	
Marsh Fritillary	Lizwell Mead	SX697776	28/05/2022	Rebecca Gethin	17	100	1	19	60	
Marsh Fritillary	Lower Hurston (South)	SX688843	28/05/2022	Amanda Hunter		100	1	96	25	
Marsh Fritillary	Lower Hurston (North)	SX688846	28/05/2022	Amanda Hunter		100	1	5	10	
Marsh Fritillary	Riddon Farm	SX677763	28/05/2022	Rebecca Gethin	15	80	1	9	45	
Marsh Fritillary	Rowden Marsh, Widcombe	SX699765	13/06/2022	Rebecca Gethin	15	50	1	0	60	
Marsh Fritillary	Ruddycleave /Buckland Common	SX731742	22/05/2022	Amanda Hunter		100	2	6	20	
Marsh Fritillary	Runnage Farm	SX662787	03/06/2022	Eleanor Baker, Jonathon Kinna	17	80	3	14	77	
Marsh Fritillary	Sherwell	SX673754	17/06/2022	Wendy Couch	20	100	3	0	7	
Marsh Fritillary	Western Corndon	SX689848	28/05/2022	Amanda Hunter		100	1	76	20	
Marsh Fritillary	Soussons Farm (South)	SX686788	14/06/2022	Eleanor Baker +1 vol	15	55	3	2	60	
Marsh Fritillary	Soussons Farm (South)	SX686788	10/06/2022	Helen Lines +2 vols	18	80	4	4	40	
Marsh Fritillary	Vogwell Cottage meadow	SX720822	06/06/2022	David Turrell		50		26	22	
Marsh Fritillary	Vogwell Farm (North)	SX718823	27/05/2022	Hazel Jones	16	100	2	27	55	
Marsh Fritillary	West Sherril	SX673755	17/06/2022	Wendy Couch	20	100	3	1	10	

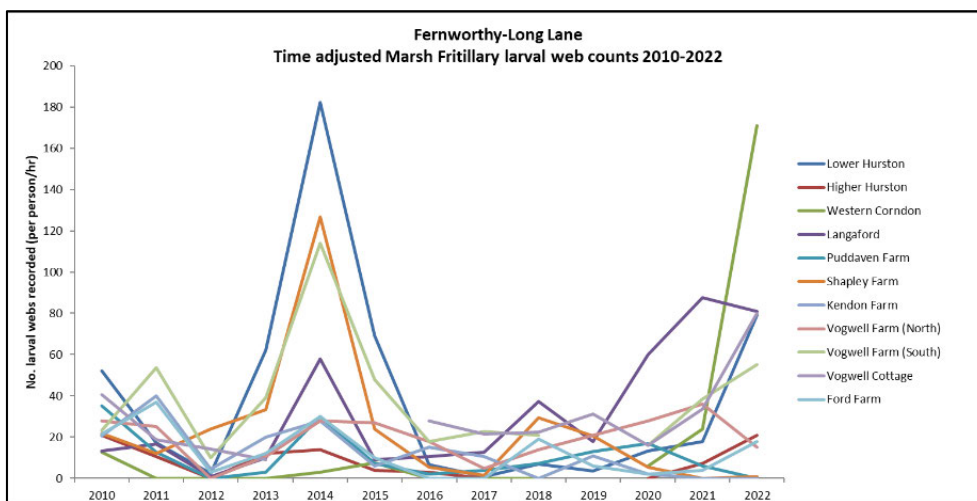
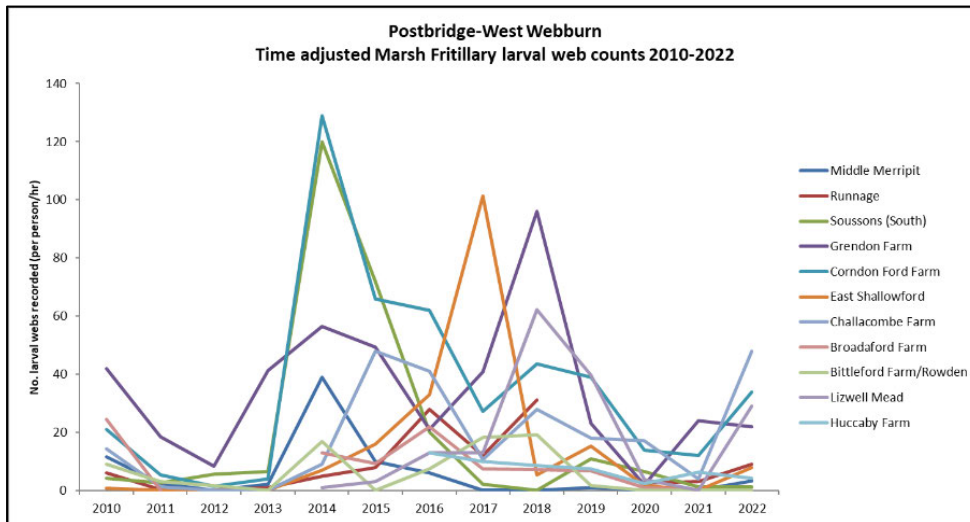
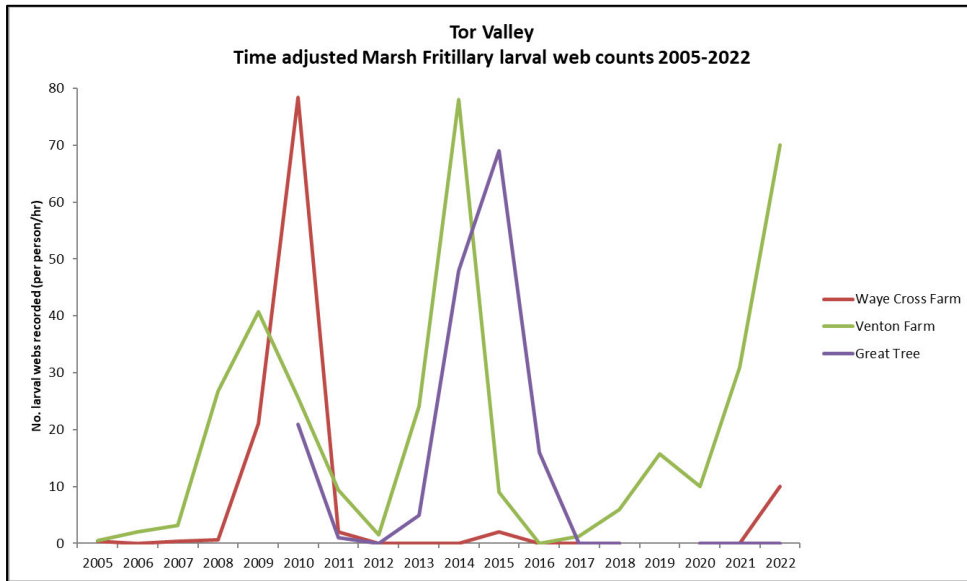
Dartmoor Marsh Fritillary adult butterfly timed count data 2022

Appendix 3: Dartmoor Marsh Fritillary (cont.)

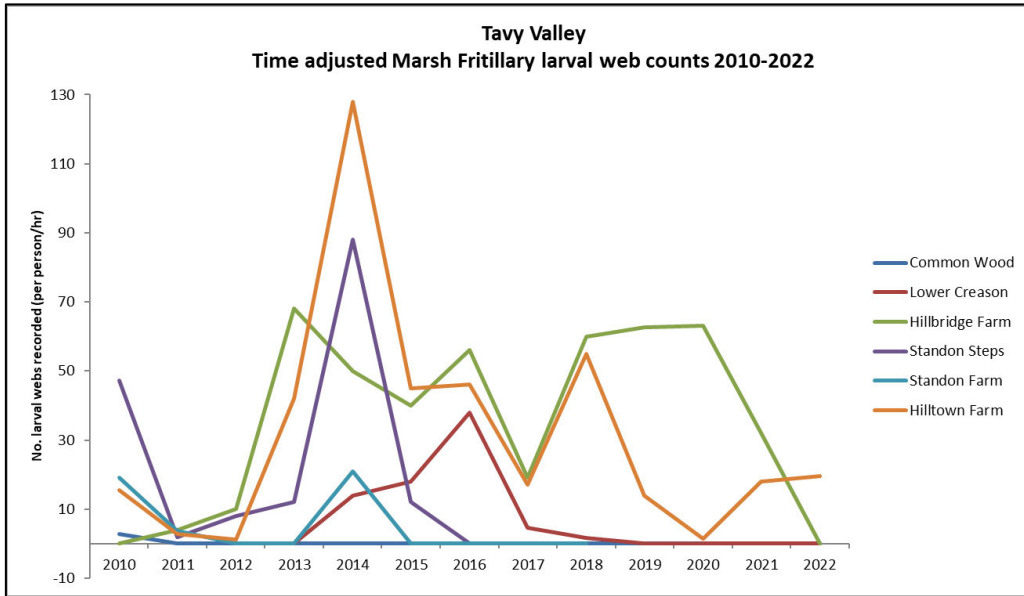
Nf2: TIMED COUNT DATA SHEET					This sheet is designed for data recorded on the Nf1: Timed Count Recorder View the comments attached to the column headings for guidance on data collection					
Species	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search	MF Time adjusted
Marsh Fritillary (webs)	Bittleford Farm	SX699763	28/08/2022	Rebecca Gethin				0	60	0.0
Marsh Fritillary (webs)	Bowden Farm	SX729737	18/08/2022	Ellie Baker				0	60	0.0
Marsh Fritillary (webs)	Broadaford Farm	SX692772	21/08/2022	Rebecca Gethin				0	30	0.0
Marsh Fritillary (webs)	Cator Blackaton	SX697783	18/08/2022	Ellie Baker				0	20	0.0
Marsh Fritillary (webs)	Challacombe Farm	SX694793	23/08/2022	Ellie Baker				50	85	35.3
Marsh Fritillary (webs)	Challacombe Farm	SX696792	19/08/2022	Nigel Bowie				8	10	48.0
Marsh Fritillary (webs)	Common Wood marsh	SX527798	25/08/2022	Jenny Plackett				0	15	0.0
Marsh Fritillary (webs)	Corndon Ford Farm	SX692747	26/08/2022	Jenny Plackett				31	55	33.8
Marsh Fritillary (webs)	East Shallowford Farm	SX692758	11/08/2022	Ellie Baker				10	75	8.0
Marsh Fritillary (webs)	DWT Emsworthy Mire alongside holwell brook	SX741779	19/08/2022	Amanda Hunter				4	10	24.0
Marsh Fritillary (webs)	Emsworthy	SX743771	26/08/2022	Jenny Plackett				1	15	4.0
Marsh Fritillary (webs)	Ford Farm	SX724818	10/08/2022	Jenny Plackett				15	50	18.0
Marsh Fritillary (webs)	Great Cator	SX670786	25/08/2022	Wendy Couch				0	34	0.0
Marsh Fritillary (webs)	Great Tree	SX695902	10/08/2022	Jenny Plackett				0	10	0.0
Marsh Fritillary (webs)	Grendon Farm (South)	SX688781	22/08/2022	Jenny Plackett/Ellie Baker				4	20	12.0
Marsh Fritillary (webs)	Grendon Farm (North)	SX686786	22/08/2022	Jenny Plackett/Ellie Baker				15	40	22.5
Marsh Fritillary (webs)	Heckwood Farm	SX544734	22/09/2022	R Kaleta & D Thomas				1	60	1.0
Marsh Fritillary (webs)	Higher Hurston	SX685839	08/08/2022	Jenny Plackett				7	20	21.0
Marsh Fritillary (webs)	Hillbridge Farm field	SX531802	25/08/2022	Jenny Plackett				0	20	0.0
Marsh Fritillary (webs)	Hillbridge Farm field	SX531802	30/08/2022	Kev & Jacqui Solman				0	30	0.0
Marsh Fritillary (webs)	Hilltown Farm	SX536807	25/08/2022	Jenny Plackett				13	40	19.5
Marsh Fritillary (webs)	Huccaby Farm	SX658733	26/08/2022	Jenny Plackett				4	60	4.0
Marsh Fritillary (webs)	Huccaby Farm	SX658733	11/08/2022	Ellie Baker				3	42	4.3
Marsh Fritillary (webs)	Kendon Farm	SX716818	12/08/2022	Hazel Jones				0	50	0.0
Marsh Fritillary (webs)	Langaford	SX698845	08/08/2022	Jenny Plackett +2 vols				250	184	81.5
Marsh Fritillary (webs)	Lizwell Mead	SX697776	26/08/2022	Jenny Plackett				34	70	29.1
Marsh Fritillary (webs)	Lower Creason	SX529805	25/08/2022	Jenny Plackett				0	30	0.0
Marsh Fritillary (webs)	Lower Hurston (South)	SX688843	25/08/2022	Amanda Hunter				27	60	27.0
Marsh Fritillary (webs)	Lower Hurston (South)	SX688843	08/08/2022	Jenny Plackett				53	40	79.5
Marsh Fritillary (webs)	Lower Hurston (North)	SX688846	25/08/2022	Amanda Hunter				5	10	30.0
Marsh Fritillary (webs)	Lower Hurston (North)	SX688846	08/08/2022	Jenny Plackett				6	10	36.0
Marsh Fritillary (webs)	Middle Merripit	SX647798	22/08/2022	Jenny Plackett/Ellie Baker				5	90	3.3
Marsh Fritillary (webs)	Puddaven	SX712838	12/08/2022	Hazel Jones				0	65	0.0
Marsh Fritillary (webs)	Riddon Farm	SX677763	21/08/2022	Rebecca Gethin				10	45	
Marsh Fritillary (webs)	Runnage	SX662787	22/08/2022	Jenny Plackett/Ellie Baker				18	120	9.0
Marsh Fritillary (webs)	Shapley	SX714733	26/08/2022	Jenny Plackett				1	60	1.0
Marsh Fritillary (webs)	Sherwell Farm	SX673754	19/08/2022	Wendy Couch				0	7	0.0
Marsh Fritillary (webs)	Soussons Farm (South)	SX686788	20/08/2022	Ellie Baker				3	135	1.3
Marsh Fritillary (webs)	Soussons Farm (North)	SX661788	22/08/2022	Jenny Plackett				3	30	6.0
Marsh Fritillary (webs)	Venton Farm	SX696904	10/08/2022	Jenny Plackett				47	40	70.5
Marsh Fritillary (webs)	Vogwell Cottage	SX721821	10/08/2022	Jenny Plackett				40	30	80.0
Marsh Fritillary (webs)	Vogwell Farm (North)	SX718823	12/08/2022	Hazel Jones				16	65	14.8
Marsh Fritillary (webs)	Vogwell Farm (North)	SX718823	10/08/2022	Jenny Plackett				38	35	65.1
Marsh Fritillary (webs)	Vogwell Farm (South)	SX726816	10/08/2022	Jenny Plackett				23	25	55.2
Marsh Fritillary (webs)	Waye Cross Farm	SX695897	10/08/2022	Jenny Plackett				5	30	10.0
Marsh Fritillary (webs)	West Corndon Farm	SX688847	25/08/2022	Amanda Hunter				57	20	171.0
Marsh Fritillary (webs)	West Corndon Farm	SX688847	08/08/2022	Jenny Plackett				91	45	121.3
Marsh Fritillary (webs)	West Sherril	SX673755	19/08/2022	Wendy Couch				5	45	6.7
Marsh Fritillary (webs)	Will Farm	SX530811	25/08/2022	Jenny Plackett				2	40	3.0
Marsh Fritillary (webs)	Yardworthy Farm	SX688849	08/08/2022	Jenny Plackett				5	20	15.0

Dartmoor Marsh Fritillary larval web timed count data 2022

Appendix 3: Dartmoor Marsh Fritillary (cont.)



Appendix 3: Dartmoor Marsh Fritillary (cont.)

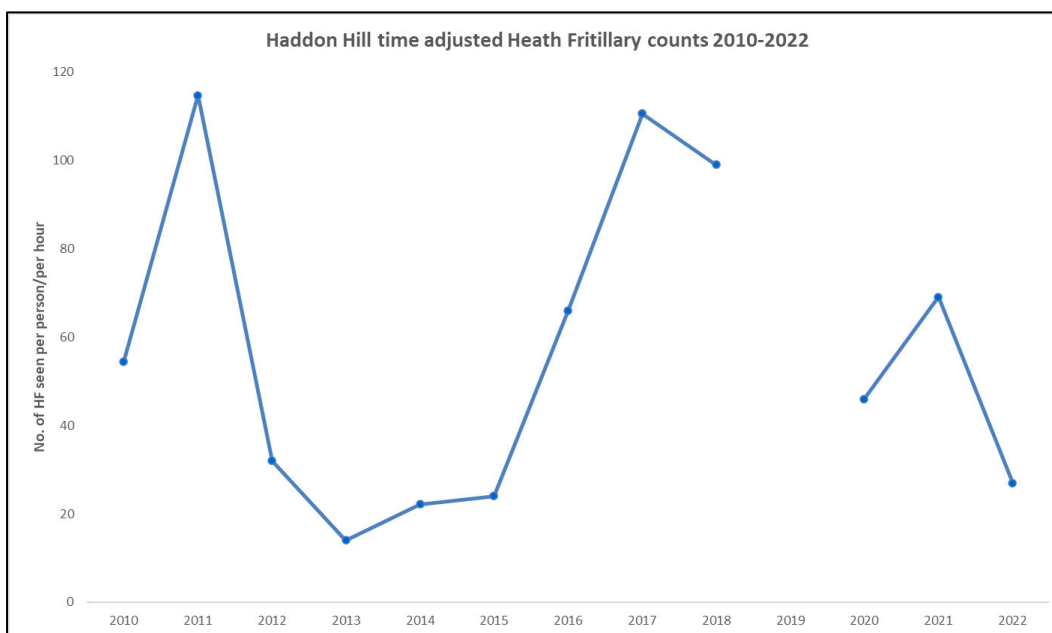
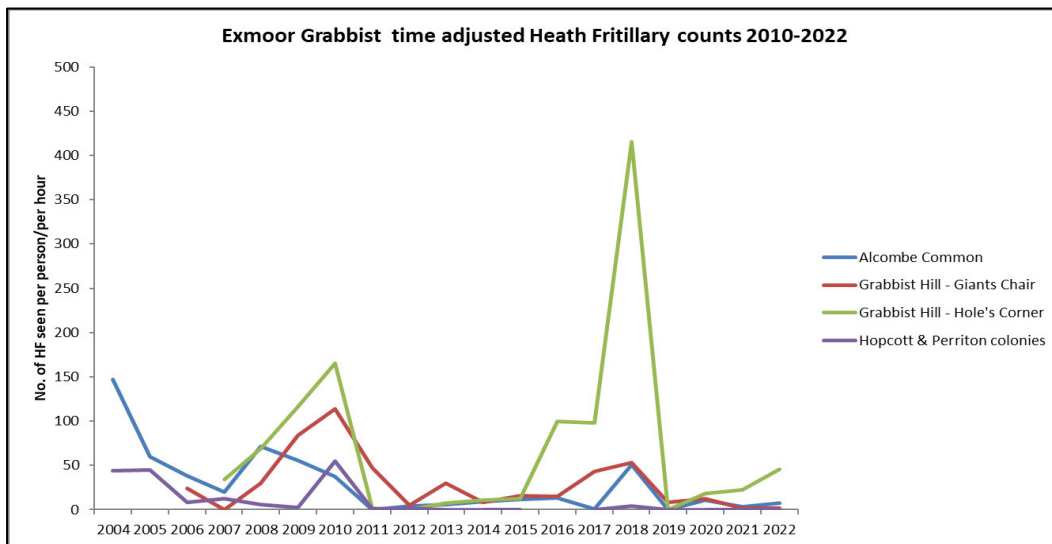
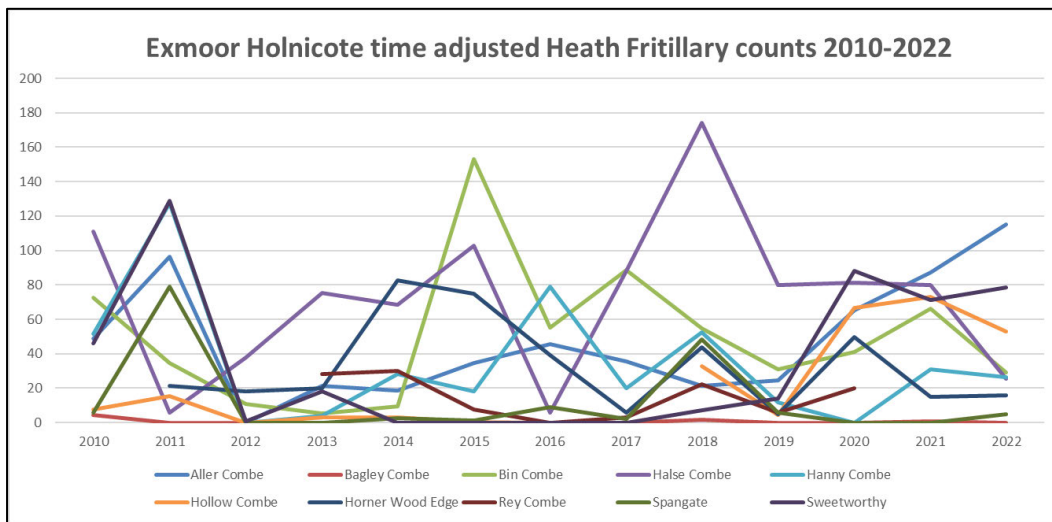


Appendix 4: Exmoor Heath Fritillary

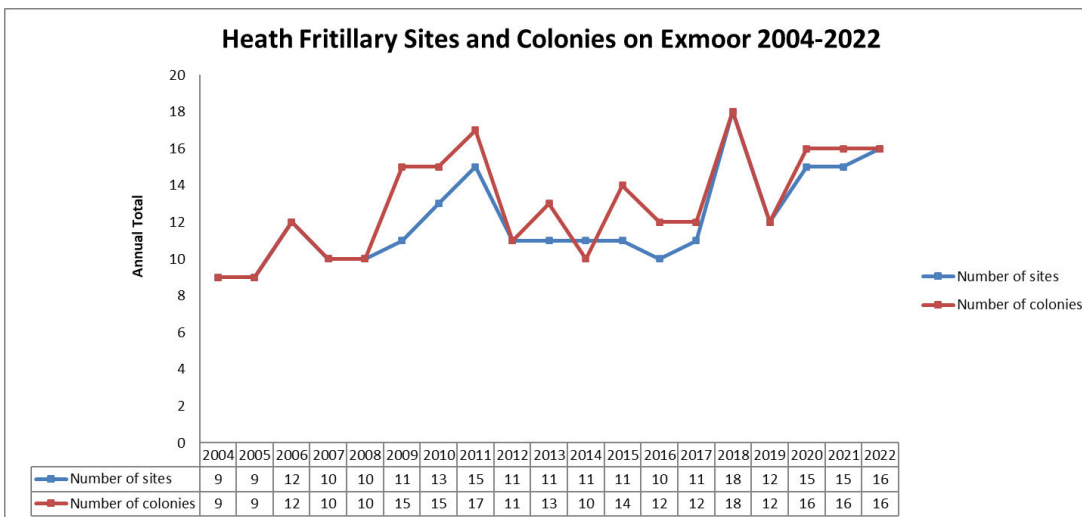
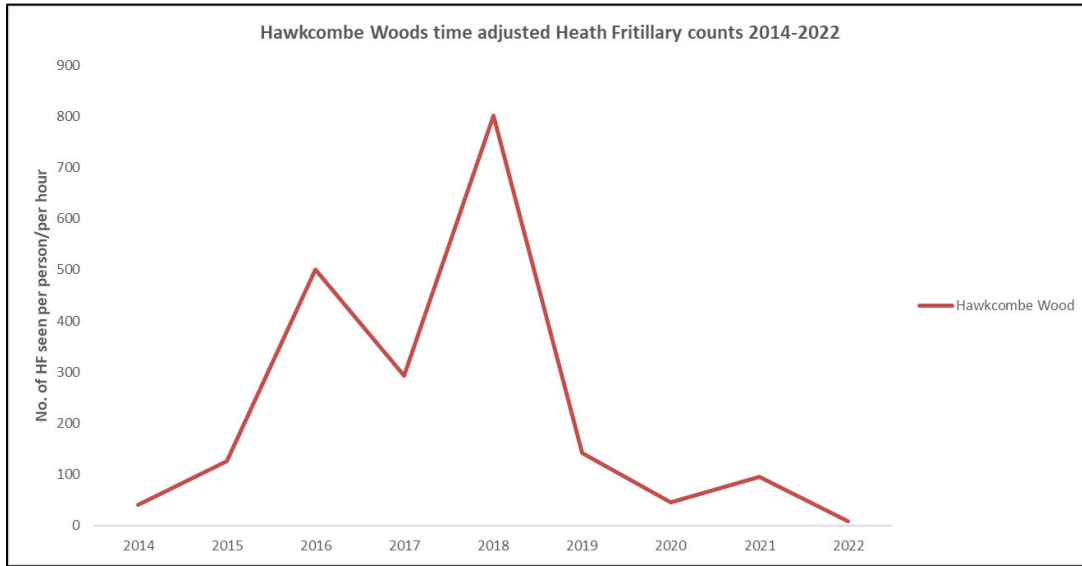
Site name	Grid ref	Date	Recorder	Start time	mean temp °C	% sunshine	max windspeed	No: seen	Total time searched (mins)	Time adjusted	
Alcombe Common	SS974439	07/06/2022		11.15	14	0%	2	10	80	7.5	
Alcombe Common	SS974439	12/06/2022		14.50	15.1	90%	2	2	40	3	
Aller Combe - lower combe	SS893425	06/06/2022		11.32		0%	4	34	228	8.9473684	
Aller Combe - upper combe	SS895424	06/06/2022		1.46		40%	3	82	60	82	
Aller Combe (all areas combined)	see above							116	288	24.166667	
Aller Combe (all areas combined)	SS893425	17/06/2022		12.17	25	90%	4	307	160	115.125	
Bagley Combe	SS876422	17/06/2022		11.22	24	90%	4	0	32	0	
Bagley Combe	SS876422	06/06/2022		11.30		50%	2	0	45	0	
Bin Combe	SS905410	06/06/2022		14.05	15	0%	1	4	90	2.6666667	
Bin Combe	SS905410	10/06/2022		13.50	17	60%	5	34	120	17	
Bin Combe	SS905410	16/06/2022		12.30	20	100%	0	29	60	29	
Giant's Chair	SS982437	07/06/2022		12.10	17	20%	0	2	80	1.5	
Giant's Chair	SS982437	15/06/2022		10.35	19	95%	1	0	45	0	
Grabbist Hill (Hole's Corner)	SS969437	07/06/2022		11.15	14	0%	2	12	60	12	
Grabbist Hill (Hole's Corner)	SS969437	12/06/2022		13.40	20	95%	2	53	70	45.428571	
Grabbist Hill (Hole's Corner)	SS969437	15/06/2022		11.20	19	90%	1	28	60	28	
Haddon Hill	SS985287	14/06/2022		11.45	18	80%	0	36	140	15.428571	
Haddon Hill	SS985287	23/06/2022		11.15	21	0%	0	9	20	27	
Halse Combe - North of stream	SS893455	10/06/2022		10.40	18	70%	4	33			
Halse Combe - South of stream	SS893455	10/06/2022		10.40	18	70%	4	18			
Halse Combe (combined)	see above							51	180	17	
Halse Combe (combined)	SS893455	06/06/2022		11.30	14	0%	2	2	32	3.75	
Halse Combe (combined)	SS893455	22/06/2022		10.02	24	100%	0	32	75	25.6	
Hanny Combe	SS915418	06/06/2022		15.28		30%	2	88	200	26.4	
Hanny Combe	SS915418	21/06/2022		10.40	22	70%	0	35	140	15	
Hawkcombe Woods	SS861457	14/06/2022		14.55	18	100%	0	10	105	5.7142857	
Hawkcombe Woods	SS861457	16/06/2022		10.15	19	95%	0	10	70	8.5714286	
Hollow Combe	SS898428	06/06/2022		13.30	16	20%		15	40	22.5	
Hollow Combe	SS898428	17/06/2022		13.40	25	90%	4	88	100	52.8	
Hollow Combe	SS898428	22/06/2022		12.20	23	100%	0	21	50	25.2	
Hopcott Common & Perriton Combe	SS953442 & SS952443	07/06/2022		14.00	15	20%	2	0	60	0	
Horner Wood Edge/Horner Gate	SS888445	10/06/2022		12.20	17		70	4	12	45	16
Horner Wood Edge/Horner Gate	SS888445	15/06/2022		2.20	17		80	1	6	30	12
Rey Combe	SS892451	06/06/2022		11.00	13	0%	1	0	40	0	
Rey Combe	SS892451	10/06/2022		12.00	17	90%	3	16	30	32	
Rey Combe	SS892451	22/06/2022		11.35	21	100%	1	0	13	0	
Spangate	SS917414	06/06/2022		14.00	14	20%	2	1	25	2.4	
Spangate	SS917414	16/06/2022		13.55	20	95%	0	5	60	5	
Sweetworthy Combe	SS884423	17.6.2022		11.40	25	90%	4	105	80	78.75	
Sweetworthy Combe	SS884423	06/06/2022		11.36		20%	5	16	69	13.913043	
Webber's Post/Dunkery Beacon	SS904428	10/06/2022		15.00	17	90%	4	9	30	18	

Exmoor Heath Fritillary timed count 022

Appendix 4: Exmoor Heath Fritillary (cont.)



Appendix 4: Exmoor Heath Fritillary (cont.)

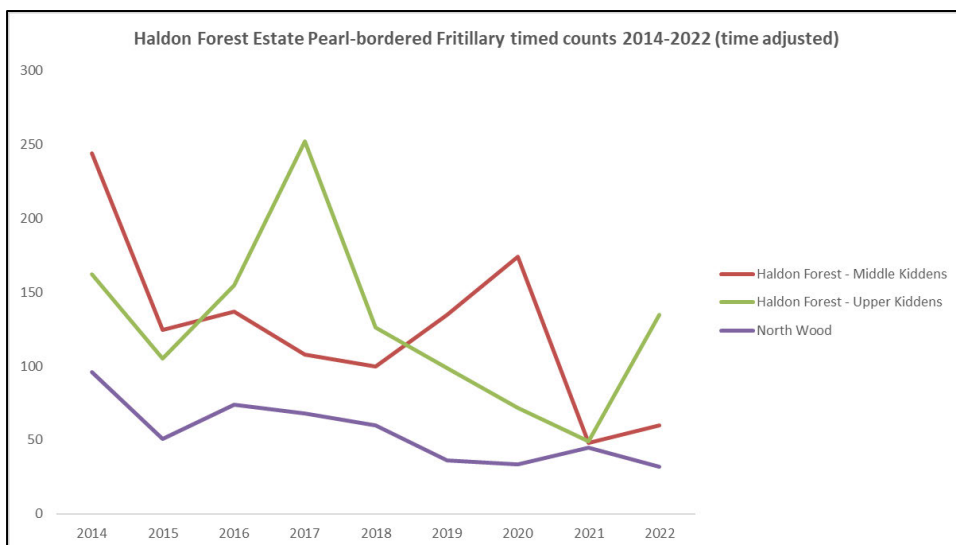
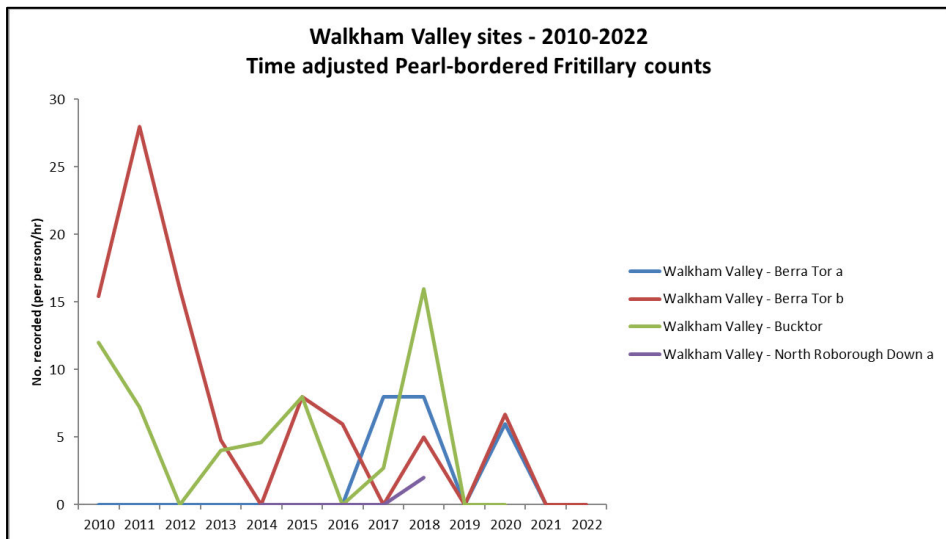
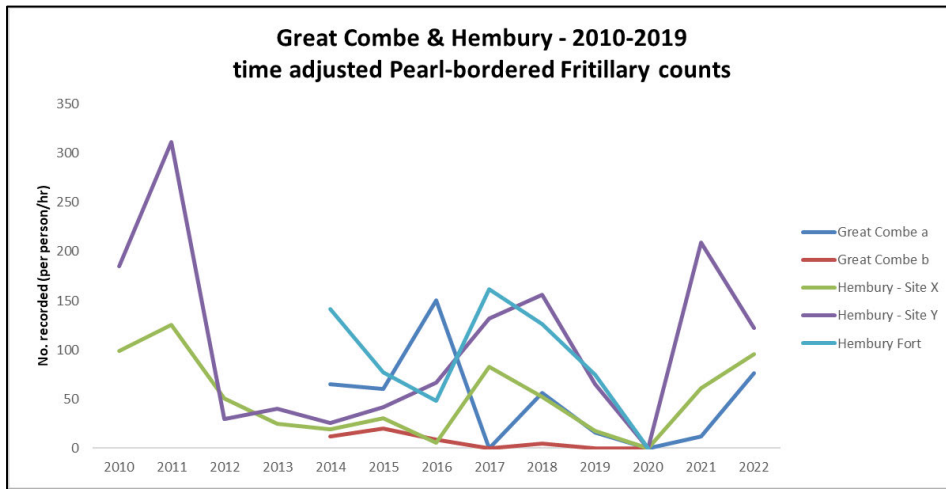


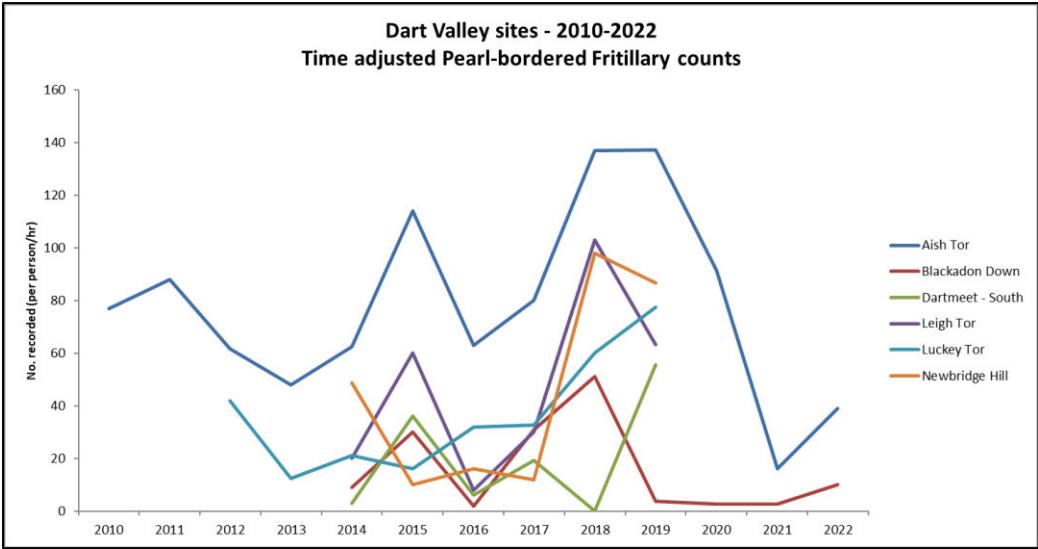
Appendix 5: Dartmoor Pearl-bordered Fritillary

	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search	PBF Time adjusted
Pearl-bordered Fritillary	Aish Tor	SX705705	16/04/2022				5			
Pearl-bordered Fritillary	Aish Tor	SX705705	25/04/2022		15	100	2	28	45	37.3
Pearl Bordered Fritillary	Aish Tor	SX707710	16/04/2022		20	100	3	2	70	1.7
Pearl Bordered Fritillary	Aish Tor	SX707710	25/04/2022		17	100	3	35	75	28.0
Pearl Bordered Fritillary	Aish Tor	SX707710	05/05/2022		21	76	2	42	105	24.0
Pearl Bordered Fritillary	Aish Tor	SX707710	08/05/2022		20	100	3	52	80	39.0
Pearl Bordered Fritillary	Aish Tor	SX707710	13/05/2022		19	90	4	64	100	38.4
Pearl Bordered Fritillary	Aish Tor	SX707710	24/05/2022		16	81	4	4	80	3.0
Pearl Bordered Fritillary	Aish Tor	SX707710	28/05/2022		19	100	1	10	75	8.0
Pearl Bordered Fritillary	Aish Tor	SX707710	03/06/2022		18	10	2	1	70	0.9
Pearl-bordered Fritillary	Blackadon	SX714733			14	80	3	10		
Pearl-bordered Fritillary	Castle Drogo	SX721901	13/05/2022				8		25	19.2
Pearl-bordered Fritillary	Chudleigh Knighton Heath, old railway area	SX838768	30/04/2022		13	100	3	2		
Pearl-bordered Fritillary	Chudleigh Knighton Heath, old railway area	SX838768	07/05/2022		20	100	2	4	8	30.0
Pearl-bordered Fritillary	Chudleigh Knighton Heath, field corner near Dunley Lane	SX836778	08/05/2022		18	100	3	1	11	5.5
Pearl-bordered Fritillary	Chudleigh Knighton Heath, old railway area	SX838768	08/05/2022		18	100	3	3	2	90.0
Pearl-bordered Fritillary	Cranbrook	SX742890	07/05/2022		18	90	3	0	7	0.0
Pearl-bordered Fritillary	Dunsford	SX786892	Apr-22		15	100	2	18	65	16.6
Pearl-bordered Fritillary	Dunsford	SX786892	18/05/2022		18	100	2	46	150	18.4
Pearl-bordered Fritillary	Great Combe (Holne Common)	SX688693	03/05/2022		13	10	2	1	40	1.5
Pearl-bordered Fritillary	Great Combe (Michelcombe)	SX693693	03/05/2022		15	0	2	19	15	76.0
Pearl-bordered Fritillary	Great Combe (Holne Common)	SX688693	07/05/2022		17	100	2	5	45	6.7
Pearl-bordered Fritillary	Haldon Forest - Upper Kiddens	SX871850	09/05/2022		17	50	1	20	20	60.0
Pearl-bordered Fritillary	Haldon Forest - Middle Kiddens	SX871847	09/05/2022		17	40	1	27	12	135.0
Pearl-bordered Fritillary	Haldon Forest - Lower Kiddens	SX871845	09/05/2022		17	50	1	30	25	72.0
Pearl-bordered Fritillary	Haldon Forest - Upper Kiddens	SX872850	25/04/2022					9		
Pearl-bordered Fritillary	Haldon Forest - Middle Kiddens	SX871845	25/04/2022					5		
Pearl-bordered Fritillary	Haldon Forest - Upper Kiddens	SX872850	29/04/2022					9		
Pearl-bordered Fritillary	Haldon Forest - Middle Kiddens	SX871845	29/04/2022					9		
Pearl-bordered Fritillary	Haldon Forest - Upper Kiddens	SX872850	05/05/2022					13		
Pearl-bordered Fritillary	Haldon Forest - Middle Kiddens	SX872850	05/05/2022					4		
Pearl-bordered Fritillary	Hembury Fort	SX726684	10/05/2022		17	80	1	46	25	110.4
Pearl-bordered Fritillary	Hembury Y	SX723683	26/04/2022		12	100	4	53	26	122.3
Pearl-bordered Fritillary	Hembury X	SX723682	26/04/2022		12	100	4	35	22	95.5
Pearl-bordered Fritillary	Hembury Y	SX723683	06/05/2022		14	100	3	21	23	54.8
Pearl-bordered Fritillary	Hembury X	SX723682	06/05/2022		14	100	3	21	31	40.6
Pearl-bordered Fritillary	Hembury - Great Winslow	SX726690	19/05/2022		12	50	2	8	16	30.0
Pearl-bordered Fritillary	Luckey Tor	SX688724	25/04/2022		14	100	4	5	40	7.5
Pearl-bordered Fritillary	Luckey Tor	SX688724	05/05/2022		15	75	3	6	50	7.2
Pearl-bordered Fritillary	North Wood	SX867886	29/04/2022					5	95	3.2
Pearl-bordered Fritillary	North Wood	SX868886	05/05/2022					12		
Pearl-bordered Fritillary	North Wood	SX868886	09/05/2022		17	50	1	16	30	32.0
Pearl-bordered Fritillary	Piddledown Common	SX728900	07/05/2022		17	70	3	15	45	20.0
Pearl-bordered Fritillary	Trendlebere Down Combe	SX775794	09/05/2022		15	100	4	14	60	14.0
Pearl-bordered Fritillary	Venford Brook/Bench Tor	SX689716	07/05/2022		17	100	0	10	15	40.0
Pearl-bordered Fritillary	Roborough Common - Berra Tor B	SX476697	15/06/2022		19	100	4	0	15	0.0
Pearl-bordered Fritillary	Roborough Down - Uppaton Combe	SX478695	15/06/2022		19	100	2	0	25	0.0
Pearl-bordered Fritillary	West Down	SX482702	10/05/2022		18	60	2	0	30	0.0
Pearl-bordered Fritillary	West Down	SX482702	20/04/2022		17	100	1	0	30	0.0
Pearl-bordered Fritillary	Whiddon Deer Park	SX723893	14/05/2022		17	80	1	17		
Pearl-bordered Fritillary	Yarner Drive	SX787789	21/04/2022					3		
Pearl-bordered Fritillary	Yarner Drive	SX787789	29/04/2022		16	8	3	20	32	37.5
Pearl-bordered Fritillary	Yarner Drive	SX787789	09/05/2022		21	90	2	10	10	60.0

Dartmoor Pearl-bordered Fritillary timed count data 2022

Appendix 5: Dartmoor Pearl-bordered Fritillary





Appendix 6: Dartmoor Small Pearl-bordered Fritillary

	Site Name	Grid Ref.	Date	Recorder	Mean temperature	Mean % sunshine	Wind speed (code)	Confirmed	Duration of search
Small Pearl Bordered Fritillary	Aish Tor	SX707710	05/05/2022		21	76	2	5	105
Small Pearl Bordered Fritillary	Aish Tor	SX707710	08/05/2022		20	100	3	4	80
Small Pearl Bordered Fritillary	Aish Tor	SX707710	13/05/2022		19	90	4	17	100
Small Pearl Bordered Fritillary	Aish Tor	SX707710	24/05/2022		16	81	4	27	80
Small Pearl Bordered Fritillary	Aish Tor	SX707710	28/05/2022		19	100	1	18	75
Small Pearl Bordered Fritillary	Aish Tor	SX707710	08/06/2022		15	81	4	4	85
Small Pearl Bordered Fritillary	Aish Tor	SX707710	12/06/2022		19	98	3	1	75
Small Pearl Bordered Fritillary	Aish Tor	SX707710	17/06/2022		27	100	3	2	90
Small Pearl-bordered Fritillary	Blackadon	SX714733	15/06/2022		22	80	0	2	20
Small Pearl-bordered Fritill	Ruddycleave Farm/Buckland Co	SX733743	22/05/2022					3	
Small Pearl-bordered Fritillary	Challacombe Farm	SX694793	15/06/2022					4	
Small Pearl-bordered Fritillary	Common Wood	SX526798	21/05/2022					25	30
Small Pearl-bordered Fritillary	Combestone Tor	SX663712	13/06/2022		16	70	4	5	50
Small Pearl-bordered Fritillary	Creason Wood	SX527798	08/06/2022					4	
Small Pearl-bordered Fritillary	Emsworthy Mire - Snodderbottom	SX741778	16/06/2022			100	1	16	30
Small Pearl-bordered Fritillary	Ford Farm	SX724818	11/06/2023		17	70	1	11	30
Small Pearl-bordered Fritillary	Great Cator	SX669774	10/06/2022		16	75	3	10	33
Small Pearl-bordered Fritillary	Great Combe (Holne Common)	SX689694	07/05/2022		17	0	2	12	45
Small Pearl-bordered Fritillary	Great Combe (Michelcombe Farm)	SX689694	03/05/2022		15	0	2	3	15
Small Pearl-bordered Fritillary	Hembury Fort	SX726684	10/05/2022		17	80	1	3	25
Small Pearl-bordered Fritillary	Hembury - Great Winslow	SX726690	19/05/2022		12	90	2	5	16
Small Pearl-bordered Fritillary	Kendon Farm	SX698845	27/05/2022		16	100	2	2	45
Small Pearl-bordered Fritill	Lower Hurston along road	SX688846	28/05/2022			100%	1	1	10
Small Pearl-bordered Fritillary	Luckey Tor	SX688724	15/06/2022		22	100%	0	5	40
Small Pearl-bordered Fritillary	Roborough Common - Berra Tor A	SX477690	07/05/2022		18	90	1	1	30
Small Pearl-bordered Fritillary	Roborough Common - Berra Tor B	SX474697	07/05/2022		18	100	1	12	30
Small Pearl-bordered Fritill	Roborough Common - Bucktor/E	SX474697	15/5/2022		19	60	2	1	10
Small Pearl-bordered Fritill	Roborough Common - Bucktor/E	SX476697	15/5/2022		19	100	4	2	15
Small Pearl-bordered Fritill	Roborough Common - Bucktor/E	SX477691	15/5/2022		19	100	4	2	25
Small Pearl-bordered Fritill	Roborough Common - Uppaton	SX503698	27/5/2022		18	100	3	1	50
Small Pearl-bordered Fritillary	Sherwell	SX673754	17/06/2022		20	100	3	10	7
Small Pearl-bordered Fritillary	Trendlebere Combe	SX775795	15/06/2022		17	100	3	8	50
Small Pearl-bordered Fritillary	Venford Reservoir	SX686714	07/05/2022		17	100	0	1	30
Small Pearl-bordered Fritillary	Vogwell North	SX718824	27/05/2022		16	100	2	2	55
Small Pearl-bordered Fritillary	West Down	SX482702	04/05/2022		15	0	0	19	35
Small Pearl-bordered Fritillary	West Down	SX482702	10/05/2022		18	60	2	49	30
Small Pearl-bordered Fritillary	West Sherrill	SX673755	17/06/2022		20	100	3	17	10

Dartmoor Small Pearl-bordered Fritillary timed count data 2022

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](#)