

# Dartmoor Species Action Plan for High Brown and Pearl-bordered Fritillaries

These two species have been combined within this Action Plan because they share very similar habitat requirements on Dartmoor (ie. medium density bracken stands over violets, which produce the conditions necessary for larval development). There are UK Action Plans and Species Action Plans drawn up by Butterfly Conservation for both species, and the *Devon Biodiversity Action Plan* contains an account of the ecology of the pearl-bordered fritillary. The objectives, targets and actions in these documents are reflected in this Plan, which also includes more specific, local targets and actions.

Both butterflies are listed as priority species in the UK Biodiversity Action Plan and under Schedule 5 of the *Wildlife and Countryside Act*. Additionally, the high brown fritillary is listed as 'Vulnerable' in the Red Data Book.

## Current status on Dartmoor

Whilst both species are strongly colonial, they can disperse over distances of several kilometres, especially towards the end of the flight period. Therefore, in extensive areas of semi-natural vegetation, as on Dartmoor, it can be difficult to define precisely terms such as 'colony', 'site' and 'population'. These species may be better thought of in terms of metapopulations. The definitions for these terms are given below.

12 possible high brown, and 60 pearl-bordered fritillary sites within the National Park area. These figures represented 33% and 20%, respectively of the recorded UK sites in 2000. Recent surveys co-ordinated by Butterfly Conservation recorded 12 high brown (2006) and 47 pearl-bordered sites (2004). The high brown fritillary sites may be considered as encompassed within 4 metapopulations. The pearl-bordered fritillary sites, whilst more numerous and widespread, have a similar distribution (see map below).

Although both species are often found on the same sites, pearl-bordered fritillaries are slightly less demanding in their requirements, both in relation to site size and with respect to bracken and violet densities.

## Current factors affecting the species on Dartmoor

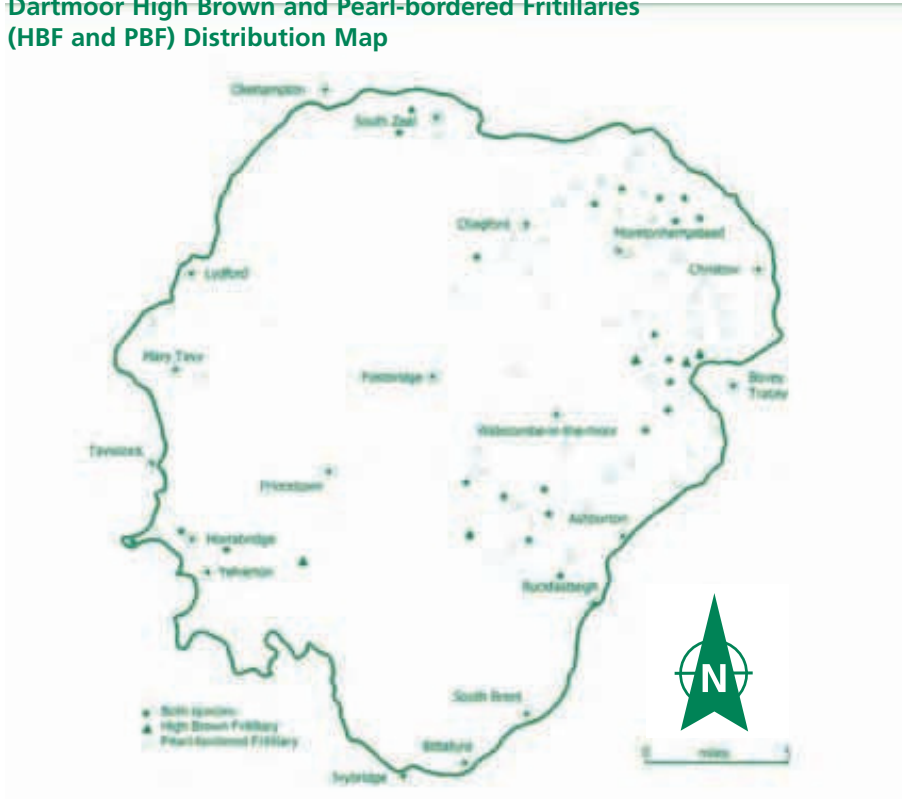
Since the late nineties, numbers of high brown fritillaries have been very low on most sites even where little or no changes in management have occurred. Ground conditions at many of these sites have deteriorated, with more grass present in the spring. Several pearl-bordered colonies have also been lost in the same period due to the rapid expansion of bluebell colonies. Both of these changes appear to be driven by an alteration in climate patterns which encourages early spring growth.

Succession to scrub, often following the reduction of grazing stock and scrub management, is also thought to be a particularly important factor affecting both species.

Within the 1990s there were records for 17 definite and



**Dartmoor High Brown and Pearl-bordered Fritillaries (HBF and PBF) Distribution Map**



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Overgrazing and poaching (especially in winter), leading to the development of a more grassy, less suitable sward is a declining factor.

Bracken control, either to improve grazing or for clearance prior to a change of land use, has been proposed on a few sites.

Burning of bracken litter has occurred periodically on a few sites. This destroys the over-wintering eggs and larvae, and should generally be avoided although it can also result in a subsequent increase in the density of violets.

Tree planting schemes have occasionally been proposed on fritillary sites.

**Current action on Dartmoor**

Recent monitoring of sites for both species has been co-ordinated by Butterfly Conservation Devon Branch. Many of the sites are within ESA management agreements where there is scope to tailor management to their needs. For high-browns, this is being pursued through the Two Moors Fritillary Project (2005-8), where the project officer is encouraging and overseeing management works in conjunction with the commoners and Natural England in the 4 metapopulation areas. Work in 2005 and 2006 has concentrated on Roborough Down and the Dart valley populations. Annual management at two pearl-bordered sites by the National Trust and Dartmoor National Park Authority over the past 10 years, has been successful in producing increasing numbers.

# Dartmoor Species Action Plan for High Brown and Pearl-bordered Fritillaries

Annual meetings of the south-west Threatened Fritillaries Action Group are organised by Butterfly Conservation to agree monitoring responsibilities for individual high brown and pearl-bordered fritillary sites and share best-practice management. The information derived from monitoring will be analysed by Butterfly Conservation and action sought where necessary.



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*Pair of pearl-bordered fritillaries*

## Definitions

### Site

A discrete area of suitable habitat surrounded by unsuitable areas.

### Colony

A group of individuals that occur in a site and are separated from other colonies by a strip of at least 0.5km of unsuitable land or 1km of semi-natural vegetation which is unsuitable for breeding. (With Dartmoor's complex mosaic of semi-natural vegetation, it can be difficult to use this definition. The term has therefore been largely avoided in this document.)

### Population

A number of butterflies occurring either at a site or within a general area.

### Metapopulation

A collection of local populations, connected by occasional emigration and subject to periodic extinctions and colonisations.

## Action Plan for High Brown and Pearl-bordered Fritillaries Key Conservation Objectives and Targets

### High Brown and Pearl-bordered Fritillaries Objectives

#### Objective 1

*Ensure that Dartmoor retains viable and healthy populations of high brown and pearl-bordered fritillaries.*

##### Dartmoor targets

- A** Maintain at least the 14 high brown and 47 pearl-bordered fritillary sites located between 2004 and 2006, by 2016.
- B** Bring a minimum of 12 (85%) of high brown and 40 (85%) of pearl-bordered fritillary sites under favourable management by 2011.
- C** Obtain a more accurate picture of high brown and pearl-bordered fritillary distribution on Dartmoor by 2001.\*

#### Objective 3

*Foster a greater understanding and awareness of the high brown and pearl-bordered fritillaries on Dartmoor.*

##### Dartmoor targets

- A** Ensure that a Dartmoor perspective is incorporated into county and national leaflets designed to raise awareness and prescribe suitable management.
- B** Periodically publish articles in appropriate press and general media.

#### Objective 2

*Contribute to research into the ecology and habitat requirements of both species.*

##### Dartmoor target

- A** Develop research initiatives, in particular on the dynamics of bracken stands and their litter, using Dartmoor sites where appropriate, by 2011.

\* Target from original (2001) version of the BAP that has already been achieved and therefore not taken forward in the revised Action Plan.

# Dartmoor Species Action Plan for High Brown and Pearl-bordered Fritillaries

## Actions for High Brown and Pearl-bordered Fritillaries on Dartmoor

Monitoring responsibility: Dartmoor National Park Authority

Action	Meets Objective/Target	Deliverer		Complete by					Date achieved	
		Lead	Partners	2007	2008	2011	2016	On-going		
<b>Policy and Legislation</b>										
Include protection policies for all sites in all relevant statutory plans when reviewed	1A	DNPA							●	
<b>Site Safeguard</b>										
Safeguard sites against direct threats through planning controls and other consultation procedures	1A	DNPA, FC, NE							●	
<b>Habitat Management</b>										
Provide on-site advice to land managers to achieve restoration and maintenance of suitable bracken stands through grazing	1A	NE, DNPA	BC						●	
Encourage positive management such as scrub control and path cutting on sites where grazing is not possible	1A	DNPA, NE	BC						●	
Establish favourable management on over 85% of HBF and PBF sites	1B	NE	DNPA, DWT, NT		●					
<b>Advisory</b>										
Contribute to county and national leaflets designed to raise awareness and prescribe suitable management	3A	DNPA, BC	NE						●	

## Actions for High Brown and Pearl-bordered Fritillaries on Dartmoor (cont.)

Action	Meets Objective/Target	Deliverer		Complete by					Date achieved
		Lead	Partners	2007	2008	2011	2016	On-going	
<b>Research &amp; Monitoring</b>									
Monitor core populations in all HBF metapopulations annually	1A	BC, DNPA	NE, DWT						●
Carry out integrity monitoring of all other HBF sites known from the 90s (21), at least every 5 years	1A	BC, DNPA	NE			●	●		
Monitor core populations in all PBF metapopulations at least every 3 years	1A	BC, DNPA	NE, DWT		●	●	●		
Carry out integrity monitoring of all other PBF sites known since 1997, at least every 5 years	1A	BC, DNPA	NE			●	●		
Support research into management of bracken stands by grazing, especially with ponies and cattle	2A	BC, DNPA	NE						●
<b>Communication and Publicity</b>									
Produce regular articles on these species in appropriate press and general media	3B	BC, DNPA, NE							●

### Abbreviations used in the table:

BC – Butterfly Conservation, DNPA – Dartmoor National Park Authority, HBF – High Brown Fritillary, PBF – Pearl-bordered Fritillary, NE – Natural England, NT – The National Trust, FC – Forestry Commission, DWT – Devon Wildlife