

Dartmoor Species Action Plan for Marsh Fritillary and Narrow-bordered Bee Hawk-moth

These two species have been combined within this action plan because all the known Dartmoor sites for the hawk-moth are located within marsh fritillary sites, and with little available knowledge of the ecological requirements of the hawkmoth, actions for the two species will be very similar, at least in the initial years of this Plan. Virtually all records for these species within the Dartmoor National Park are on Rhôs pastures (see *The Nature of Dartmoor: A Biodiversity Profile* and the Dartmoor Action Plan for Rhôs Pasture) and both species use devil's-bit scabious as their main larval food plant. The *Devon Biodiversity Action Plan* contains an account of the general ecology of the marsh fritillary and the UK Action Plan for the narrow-bordered bee hawkmoth gives some information on this species. The objectives and targets set in national, regional and county action plans for the marsh fritillary are incorporated in this action plan, which also includes more specific, local targets and actions for Dartmoor.



The marsh fritillary is listed as a priority species in the UK Biodiversity Action Plan, included on Annex II of both the Habitats Directive and the Bern Convention, and is also protected under Schedule 5 of the *Wildlife and Countryside Act*.

The narrow-bordered bee hawk-moth is also listed as a priority species in the UK Biodiversity Action Plan due to a widespread and continuing decline.

Current status on Dartmoor

There were 34 marsh fritillary sites on Dartmoor recorded between 2003 and 2006. These represent approximately 20% of the known sites of this internationally threatened species remaining in England and 10% of those left in the UK.

Over the last 8 years, there has been a reduction in the number of sites being used by marsh fritillaries on Dartmoor, possibly by as much as one third. However, it is impossible to be very accurate with this figure due to the difficulties in comparing colony/site boundaries, the number of years for which records have been collected and the amount of search effort used in different surveys.

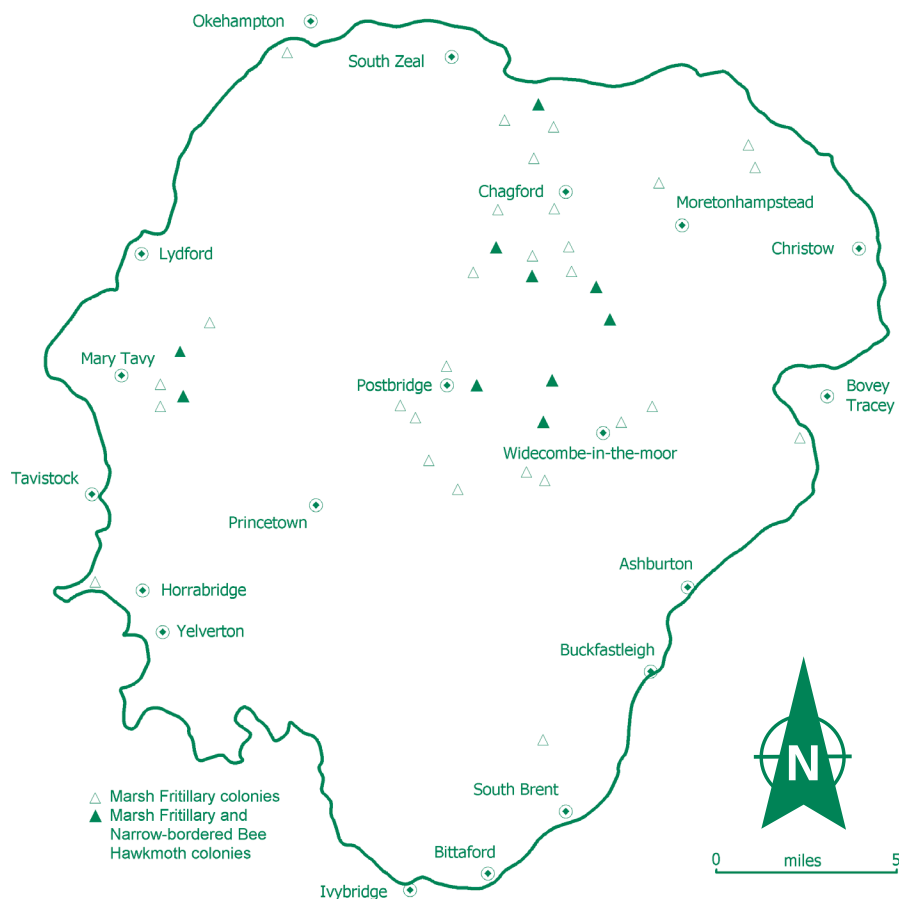
As an insect existing within a metapopulation structure, single year surveys of recently recorded sites do not represent the most accurate assessment of distribution and abundance in areas where there is an extensive spread of small, potential sites.

There is less information available on the distribution of the narrow-bordered bee hawk-moth, which has been recorded from 13 sites within 8 valley systems on Dartmoor since 1995.

Current factors affecting the species on Dartmoor

Undergrazing and lack of scrub control are major factors leading to the abandonment of many sites and subsequent loss of marsh fritillaries. A lack of suitable grazing animals (either cattle or ponies) in the vicinity of the sites is the major cause, coupled with insufficient incentives to carry out regular scrub management. Overgrazing can also make sites

Dartmoor Marsh Fritillary and Narrow-bordered Bee Hawk-moth Distribution Map



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unsuitable for marsh fritillaries at least in some years, but rarely results in the complete loss of potential sites unless it is combined with winter feeding.

Drainage, fertilising, tree planting and the formation of ponds are comparatively minor factors, but can be important locally.

Current action on Dartmoor

The vast majority of marsh fritillary sites are now under ESA or DNPA management agreements, but this has not always enabled the maintenance of suitable conditions, due at least in part to a lack of officer time to carry out regular site visits and sufficient liaison with owners.

In 2005 the Two Moors Fritillary Project was launched, providing a full-time Project Officer to target improved

site management for rare fritillaries in Dartmoor and Exmoor National Parks. This is a three year initiative overseen and funded by a steering group comprising Butterfly Conservation (BC), DNPA, ENPA, NE, EA and the Sustainability Funds for Dartmoor and Exmoor National Parks. The work to date has provided major improvements in marsh fritillary site management on Dartmoor, targeting key valley systems, developing regular advice and support for site owners, and enabling several to enter the new Higher Level Scheme with detailed plans to maintain the fritillaries.

The last full-scale survey for marsh fritillaries on Dartmoor was carried out in 2001, and BC Devon Branch coordinated a further study in 2005 which incorporated data from two DNPA valley system surveys in 2003 and 2004.

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Recording of narrow-bordered bee hawk-moth has tended to occur as part of marsh fritillary monitoring, although the surveys of 2003/4 did look specifically for both adults and larvae of this species.

An MSc thesis produced in 1998 looked at various ecological factors and a BC report in 2006 by the Two Moors Fritillary Project Officer drew together data on vegetation conditions supporting larvae.

Marsh Fritillary and Narrow-bordered Bee Hawk-moth Key Conservation Objectives and Targets

Marsh Fritillary and Narrow-bordered Bee Hawk-moth Objectives

Objective 1

Ensure that Dartmoor remains a stronghold for the marsh fritillary.

Dartmoor targets

- A** Maintain at least the same number of sites known in 2006 (34).
- B** Coordinate management within each of the four valley systems containing extensive colonies, to ensure these systems remain viable.
- C** Obtain a more accurate distribution of marsh fritillary on Dartmoor by 2001.*
- D** By 2001, bring a minimum of 75% of sites into agri-environment schemes or management agreements with DNP, and 90% by 2011.

Objective 2

Foster a greater understanding and awareness of the marsh fritillary and narrow bordered bee hawk-moth on Dartmoor.

Dartmoor targets

- A** Assess the potential for access to sites and ensure that at least one site has access and interpretation facilities developed by 2002.*
- B** Support research on the parasitoids of marsh fritillary larvae and the species metapopulation dynamics.
- C** Ensure that a Dartmoor perspective is incorporated in county and national leaflets designed to raise awareness and prescribe appropriate management.
- D** Publish articles in appropriate press and general media, at least bi-annually.

Objective 3

Maintain a healthy population of narrow-bordered bee hawk-moths on Dartmoor.

Dartmoor targets

- A** Maintain at least the same number of sites known in 1998 (7).
- B** Bring a minimum of 90% of sites into agri-environment schemes or management agreements with DNP, by 2005.*

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

Actions for Marsh Fritillary and Narrow-bordered Bee Hawk-moth 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	
Policy and Legislation									
Include protection policies for all sites in all relevant statutory plans when reviewed	1A, 3A	DNPA	EA						●
Site Safeguard									
Safeguard sites against threats through planning controls and other consultation procedures	1A, 3A	DNPA, EA, FC	NE						●
Assess the potential for purchase of key sites by conservation bodies to ensure maintenance of core populations and implement a strategic approach if appropriate	1, 3	BC, DNPA, NT		●					
Habitat Management									
Target co-ordinated management for marsh fritillaries in the four valley systems containing extensive colonies	1B	DNPA, NE	BC						●
Ensure all management agreements on Rhôs pasture sites maintain appropriate levels of grazing and scrub control	1, 2	NE, DNPA	BC						●
Advisory									
Contribute to county and national leaflets on raising awareness and management for both species and produce a Dartmoor version by 2007	2C	BC	DNPA, NE	●					

(cont.)

Actions for Marsh Fritillary and Narrow-bordered Bee Hawk-moth on Dartmoor (cont.)

Action	Meets Objective/Target	Deliverer		Complete by					Date achieved
		Lead	Partners	2007	2008	2011	2016	On-going	
Research & Monitoring									
Monitor core marsh fritillary sites at least every 3 years and all sites every 5 years	1A	BC, DNPA			●	●	●		
Monitor core narrow-bordered bee hawkmoth sites at least every 3 years and all sites every 5 years	3A	BC, DNPA			●	●	●		
Provide facilities for researchers to carry out autecological studies on both species	2B, 3A	DNPA, BC	NE					●	
Communication and Publicity									
Provide access and interpretation on at least one marsh fritillary/narrow-bordered bee hawk-moth site	2	DNPA						●	
Produce regular articles on these species in appropriate press and general media	2D	DNPA, NE, BC						●	

Abbreviations used in the plan:

BC – Butterfly Conservation, DNPA – Dartmoor National Park Authority, EA – Environment Agency, ENPA - Exmoor National Park Authority, FC – Forestry Commission, NE – Natural England

