

LOWLAND CALCAREOUS GRASSLAND

Hampshire Biodiversity Partnership

1 INTRODUCTION

Lowland calcareous grasslands occur on shallow lime-rich soils, generally overlying limestone rocks. In Hampshire, due to the exclusive occurrence of calcareous grassland on chalk, these grasslands are often referred to as chalk grasslands or downlands.

Lowland calcareous grassland has been selected as a key habitat under the UK Biodiversity Programme¹. This action plan will ensure that national objectives are translated into effective action in Hampshire, taking into account local issues.

Nationally 95% of chalk downland has been lost in the last 50 years, and in Hampshire 98% has been lost over the last 150 years². These trends highlight an urgent need to conserve those areas which remain, and to enhance or restore other areas of suitable habitat.

The enormous loss of habitat in the county has been accompanied by severe fragmentation; nearly half the remaining sites are less than 2 hectares (ha). Also, much of the remaining resource is not in favourable nature conservation condition³ due to a range of management issues.

Hampshire calcareous grasslands are one of the most important semi-natural habitats in the county being of key importance for 50 Hampshire priority species (see Appendix 1). Actions to conserve most of these species are covered by this Plan.

2 CURRENT STATUS

2.1 Description of Habitat

Hampshire's chalk grassland has a distinctive character due to subtle changes in base rock and a combination of western oceanic and eastern continental climatic influences⁴.

Surveys of Hampshire's chalk grassland took place in 1980-82 and 1987. The latter classified the grassland types in accordance with the National Vegetation Classification (NVC) and a summary is provided in Appendix 2. The majority of Hampshire's chalk grassland consists of a botanically

species-rich community characterised by the dominance of sheep's fescue grass (*Festuca ovina*). Chalk grassland types dominated by upright brome (*Bromopsis erecta*) or meadow oat grass (*Avenula pratense*) also cover significant areas.

A number of mosaic habitats occur with chalk scrub, chalk heath and more mesotrophic grassland types occurring with the chalk grassland. These can be of vital importance to many chalk grassland plant and animal species, including nationally rare and scarce downland plants and invertebrates associated with Hampshire's chalk grassland. Appropriate grazing and other management is essential to maintain the rich biodiversity of chalk grassland and its associated habitat mosaics.

2.2 Distribution and Extent

The Hampshire chalk outcrop consists almost entirely of Upper Cretaceous Chalk, with exposures of Middle Chalk on scarp slopes and areas of Lower Chalk at the Wealden Edge⁴. The Hampshire chalk outcrop, which forms the Hampshire Downs, the western part of the South Downs and smaller areas at Cranborne Chase and Portsdown, occupies a total of 97,000 ha or 7.4% of the total chalk outcrop in Britain. Much of this, however, is overlain by superficial deposits of clay-with-flints and aeolian silty drift materials.

Relic calcareous grassland in Hampshire is largely confined to steep slopes where conversion to arable or agricultural improvement has proved too difficult. Despite this, some of these inaccessible sites were sprayed and fertilised from the air during the 1970s and early 1980s. Two notable exceptions are at Porton and Martin Downs where large tracts have survived on flatter common land.

A number of important chalk grasslands have also developed over archaeological sites such as Old Winchester Hill. Other sites include old quarries and chalk spoil heaps, with steep roadside banks and verges, tracks and railway lines forming some important linear fragments which often link the larger sites.

HABITAT
ACTION
PLAN

The area of chalk grassland has historically fluctuated in response to the demand for arable land. In 1966, 2,115 ha of unimproved calcareous grassland was present in 119 remaining fragments⁵; this represents at least an 80% loss from the 18th century peak in extent. A repeat survey by the Nature Conservancy Council in 1980 showed that in the intervening 14 years the area had declined further to 1,822 ha. These surveys, however, did not include areas of less than 2 ha in size^{4,6}. A 1980-82 Hampshire County Council (HCC) survey included these smaller fragments and found 2,052 ha (5% of the UK calcareous resource at that time) in 155 fragments.

Most recently, the 1997 HCC Phase 1 survey (from aerial photographs) indicates that there are some 2,186 ha of chalk grassland of varying degrees of quality and management. All fragments over 0.1 hectares have been included.

2.3 Legislation and Site Designation

No legislation exists to specifically protect the lowland calcareous grassland habitat, although legislation at the European Union (Birds Directive 1979, Habitats Directive 1992) and UK (Wildlife and Countryside Act 1981) levels makes provision for the designation of sites to protect chalk grassland habitats and the species that occur there.

Within Hampshire lies 550 ha of the Porton Down Special Protection Area (SPA) and 12 ha of the Salisbury Plain SPA. Both have been selected for the presence of nationally important breeding numbers of stone curlew. Both Porton Down and Salisbury Plain also form part of the Salisbury Plain Candidate Special Area of Conservation (cSAC). Reasons for this designation include the presence of nationally important examples of 'Juniper on heaths or calcareous grasslands' and 'dry grasslands and scrublands on limestone'.

There are 25 Sites of Special Scientific Interest (SSSIs) in Hampshire which contain areas of calcareous grassland in association with other habitats (see Appendix 3). In total, these sites cover 1,800 ha and the area of calcareous grassland within them represents a large proportion of the county resource. The majority of these are in public ownership.

Ashford Hangers, Martin and Tidpit Downs, Old Winchester Hill, Beacon Hill, Butser Hill and Oxenbourne Down SSSIs are also designated as National Nature Reserves (NNRs). Catherington Down is designated a Local Nature Reserve (LNR).

In addition, approximately 140 Sites of Importance for Nature Conservation (SINCs) also contain areas of chalk grassland.

Much of east central Hampshire is within the East Hampshire Area of Outstanding Natural Beauty (AONB) whilst the North Wessex AONB covers much of the chalk within the north-west of the county. The South Downs Environmentally Sensitive Area (ESA) designation extends into the south-east of the county within the East Hampshire AONB and includes 640 ha (29%) of the county's lowland calcareous grassland.

3 CURRENT FACTORS AFFECTING THE HABITAT

- Direct loss of remaining chalk downland as a result of conversion to arable and agriculturally improved grassland: through fertiliser, herbicide and pesticide application and spray drift and run-off from adjacent intensively managed agricultural land.
- Inappropriate grazing management due to more intensive methods of cattle and sheep farming with higher stocking rates and less variety of grazing regime.
- Lack or absence of appropriate management (including grazing and cutting) to prevent loss of grassland to coarse species, scrub and secondary woodland. The BSE crisis and the ensuing reduction in cattle numbers have exacerbated the grazing problems.
- Vulnerability of a large number of sites due to their small size – most are less than 5 ha – and fragmentation. Intensification of agriculture and forestry and a reduction in ecological corridors exacerbates the effects of fragmentation resulting in an overall loss of biodiversity. Changes in arable farming practice, including increased use of herbicides and pesticides and the move away from spring sown cereal crops, have also resulted in significant changes in food and nesting habitat for birds associated with the downland, such as skylark, corn bunting and stone curlew.
- Conservation management of much of the remaining downland within Hampshire relies on continued financial support either from MAFF through ESA and Countryside Stewardship Scheme (CSS) payments, or from English Nature under management agreements. Funding constraints and uncertainties over the long-term continuity of these schemes mean that positive

conservation management of chalk grassland remains insecure over the long term.

- The North Hampshire Downs and South Wessex Downs are not covered by ESA schemes (large parts of the latter are ineligible for ESA due to extensive MOD land holdings). CSS is available, but uptake has been poor.
- Direct and indirect losses from development, particularly of housing and road construction.
- The impact of public recreation on sensitive ecological areas is a significant concern on many sites such as Catherington Down and Portsdown Hill. 'Right to roam' legislation may result in further threats to remaining chalk grassland areas from increased disturbance, or the possibility of landowners giving up grazing or even converting downland to cultivated land to remove access rights.
- Some downland site managers also experience problems in addressing the requirements of the Pests and Injurious Weeds Act in ways which avoid damage to chalk grassland yet meet the needs of adjacent landowners.

4 CURRENT ACTION

4.1 Site and Species Protection

- The coverage of calcareous grassland SSSI is under review by English Nature (EN) as part of their 'Equilibrium Project'.
- SINC identification is ongoing in Hampshire. Further chalk grassland SINC's are likely to be identified by HCC in consultation with EN and Hampshire Wildlife Trust (HWT) and the relevant district council.

4.2 Habitat Management and Programmes of Action

- 'Integrated Management Guidelines' are being developed for the East Hampshire AONB⁷. These include measures to promote the conservation of chalk grasslands.
- Part of the chalk plateau in the south-east of the county is within the South Downs ESA. Within the ESA as a whole, agreements are currently in place to maintain 5,210 ha of existing unimproved calcareous grassland in favourable condition, to restore 606 ha of arable land to chalk downland, and to restore a further 5,189 ha to rye-grass ley

grassland (with a longer-term objective to return this to chalk grassland). In addition, the ESA scheme also makes provision for grants towards the cost of capital works on existing chalk grasslands, such as fencing to enable the re-introduction of grazing or scrub management⁸. The current ESA scheme will end in 2002. The future of the scheme beyond this date is still to be decided.

- Lowland calcareous grassland is a target habitat for the CSS. The Scheme provides payments for maintaining and enhancing calcareous grassland habitat and arable reversion to calcareous grassland. Nevertheless there is a limited pool of funding which has to be prioritised.
- Much of the land within SSSIs is either under sympathetic management by public bodies, under ESA or CSS agreements, or under Section 15 Management Agreements with EN. Despite this, additional funding is required to achieve favourable conservation condition on a number of chalk grassland sites in public ownership¹². EN are currently producing 'Site Management Statements' for each SSSI outlining the conservation objectives and appropriate management.

▪ The Habitat Management Advisory Project (HMAP) provides free advice to owners and managers of SINC's in Hampshire, including lowland calcareous grassland sites. In addition to advice, assistance is given with applications for grant-aid and a grant budget is available to assist small-scale capital works such as fencing.

▪ HCC and EN are currently funding a 3 year pilot Hampshire Grazing Project (HGP) to investigate constraints to grazing and assist with the promotion of grazing as a management tool. The Project includes chalk grassland sites in the north and west of the county.

▪ The RSPB Lowland Calcareous Grassland Project is currently involved in the management of a number of sites in the west of the county.

4.3 Action for Species

Table 1 (Appendix 1) gives details of priority species in Hampshire found primarily in lowland calcareous grassland. Action proposed in this Plan will be the principal means of conserving most of these species, although four species – marsh fritillary, Duke of Burgundy, silver-spotted skipper and hornet robberfly – will have their own Species Action Plans (SAPs). In some cases



additional action plans and programmes will also contribute to conserving priority species: for example, UK Species Action Plans (UK SAP) and Butterfly Conservation Regional Action Plans (BC RAP).

Table 3 (Appendix 1) lists those Hampshire priority species that occur in lowland calcareous grassland but whose main habitat is **not** lowland calcareous grassland. Although action in this HAP may contribute to the conservation of these species, other HAPs have key responsibility for their conservation. Ten of the species on Table 3 have been identified as requiring a SAP.

Several priority species identified in Appendix 1 are already the subject of specific conservation efforts:

Lowland Calcareous Grassland

- Butterfly Conservation are involved in several species management projects in Hampshire. These include ecological studies and management programmes for the silver-spotted skipper at Beacon Hill, Oxenbourne Down and Martin Down.
- The RSPB Wessex Stone Curlew Project has two target areas in Hampshire.

4.4 Survey, Research and Monitoring

- EN are currently carrying out regular condition assessment of SSSIs through standardised Site Unit Recording Forms (SURF) monitoring.
- HCC will re-survey most of the rest of the areas of chalk downland when resources permit as part of the SINC monitoring programme.
- Butterfly Conservation Society and other organisations monitor butterfly populations on a number of key chalk grassland sites using butterfly transects.

5 OBJECTIVES

The overall aim of this Plan is to protect and enhance the biodiversity of lowland calcareous grassland in Hampshire. This broad aim translates into the specific objectives set out below. Where feasible, objectives have been allocated targets against which achievement can be measured: for example total areas to be restored or dates for completion. The 'Proposed Action' table in section 6 identifies the action to be taken to meet these objectives.

	OBJECTIVE	PROPOSED ACTIONS
A	Ensure no further loss or degradation of lowland calcareous grassland: <ul style="list-style-type: none"> ▪ Maintain the extent and quality of the existing resource and ensure no further fragmentation 	1-13, 16, 17, 19
B	Increase the extent of lowland calcareous grassland: <ul style="list-style-type: none"> ▪ Expand the area of lowland calcareous grassland of wildlife value by at least 85ha by 2010 ▪ Develop and/or create links between fragmented sites 	11, 12, 14, 17, 33
C	Improve the quality of lowland calcareous grassland – achieve favourable management on existing sites: <ul style="list-style-type: none"> ▪ Seek to restore to favourable condition 100% of all lowland calcareous grassland in Hampshire by 2010 	4, 5-13, 16, 17, 19-23, 33, 40, 47
D	Ensure that the needs of the Hampshire priority species are met	5, 15, 22-26, 40
E	Improve knowledge of distribution, extent and status of lowland calcareous grassland in Hampshire through survey, research and monitoring	27-39, 41, 45
F	Communication, Awareness and Promotion: <ul style="list-style-type: none"> ▪ Promote the importance of lowland calcareous grassland, its associated species and threats to them. Communicate with and provide information to key sectors including statutory agencies, NGOs, landowners and managers, schools, community groups and members of the public 	20-23, 26, 32, 40-48

**HABITAT
ACTION
PLAN**

6 PROPOSED ACTION

The following table lists the actions required to achieve the objectives set out in this Plan. Each action has been assigned to one or more 'Key Partners'. Key Partners are those organisations that are expected to take responsibility for the delivery of the actions assigned to them, according to the targets set in this Plan. Other organisations may also be involved in the delivery of action, and they have been indicated in the 'Others' column.

Key to symbols in Action Table:

- ◆ To be completed by the indicated year. Work can commence at any time before the due date, at the discretion of the Key Partner.
- ◆⇨ Design or production of a plan/strategy to be completed by this year and then followed by its implementation.
- ➡ To start by the indicated year and usually followed by ongoing work. A start arrow in year 2000 can indicate a new action or a new impetus to existing work.
- ⇨ Work that as already begun and is ongoing.

	ACTION	DELIVERY BY		YEAR						MEETS OBJ.
		Key Partner	Others	2000	2001	2002	2003	2004	2010	
				◆ = Complete by ◆⇨ = Design by and implement ➡ = Start by ⇨ =Ongoing						
Habitat Protection										
1	Review the selection of SSSIs to ensure all relevant sites are designated.	EN	HCC, HWT	⇨	⇨	⇨	⇨	⇨	⇨	A
2	Review SINC criteria for lowland calcareous grassland.	HCC	HWT, EN, DCs			◆				A
3	Ensure that all suitable sites containing lowland calcareous grassland that meet SINC criteria are identified.	HCC	HWT, EN, DCs	⇨	⇨	⇨	⇨	⇨	⇨	A
4	Review and/or develop site acquisition policies and purchase sites where appropriate.	ALL			➡					A, C
5	Ensure that lowland calcareous grassland and associated priority species are safeguarded from development through forward planning and development control.	LAs	EN, HWT	⇨	⇨	⇨	⇨	⇨	⇨	A, D
6	Provide advice to mineral operators regarding the ecologically sensitive working of chalk pits and quarries.	HCC		⇨	⇨	⇨	⇨	⇨	⇨	A, C
Habitat Management, Incentive Schemes and Other Resources										

**HABITAT
ACTION
PLAN**

Lowland Calcareous Grassland

7	Review all SSSIs supporting lowland calcareous grassland and ensure all are under favourable and appropriate management.	EN						◆⇄ [2005]		A, C
8	Ensure that management objectives for Salisbury Plain cSAC are met.	EN							◆	A, C
9	Ensure nature conservation objectives for Salisbury Plain cSAC are incorporated within MoD's Integrated Land Management Plan for Porton Down.	MoD	EN		◆					A, C
10	Ensure favourable and appropriate management on lowland calcareous grassland sites managed by 'conservation' bodies.	HCC, HWT	BC, NT	⇄	⇄	⇄	⇄	⇄	⇄	A, C
11	Implement Integrated Management Guidelines for East Hampshire AONB.	EHA		➔						A, B, C
12	Extend the principle of Integrated Management Guidelines to other AONBs which support calcareous grassland in Hampshire.	CA	HCC	➔						A, B, C
13	Ensure favourable and appropriate management on all non-SSSI (e.g. SINCs) sites which support lowland calcareous grassland.	HMAP	MAFF/ FRCA, FWAG, EHA	⇄	⇄	⇄	⇄	⇄	⇄	A, C
14	Increase the area of calcareous grassland by 85 ha in accordance with English Nature's Natural Area targets ⁹⁻¹² , as follows: <ul style="list-style-type: none"> • South Downs: 30ha • South Coast Plain & Hampshire Lowlands: 5 ha • Hampshire Downs: 40ha • South Wessex Downs: 10ha. 	EN	HCC,HWT, MAFF/ FRCA, EHA						◆	B
15	Endeavour to incorporate the needs of lowland calcareous grassland and/or priority species when developing, revising and/or updating incentive schemes and strategies.	MAFF/ FRCA		➔						D
16	Encourage further uptake of ESA and CS schemes to ensure favourable condition on SSSI and non-SSSI lowland calcareous grassland sites.	EN, MAFF/ FRCA	HMAP, EHA	⇄	⇄	⇄	⇄	⇄	⇄	A, C
17	Seek to ensure that the relevant South Downs ESA targets are met in Hampshire	MAFF/FRCA				◆				A, B, C
18	Ensure that ESA and CSS arable reversion payments are attractive and encourage further uptake of arable reversion schemes to achieve Natural Area downland re-establishment targets.	MAFF/FRCA	HMAP	➔						B
19	Facilitate the beneficial grazing of lowland calcareous grassland sites.	HGP	FWAG, HMAP	⇄	⇄	⇄	⇄	⇄	⇄	A, C

**HABITAT
ACTION
PLAN**

Lowland Calcareous Grassland

20	Provide information and advice to landowners and managers on land management, incentive schemes and advisory projects.	MAFF/ FRCA, FWAG, HMAP, HGP	EHA	↔	↔	↔	↔	↔	↔	C, F
ACTION		DELIVERY BY		YEAR						MEETS OBJ.
		Key Partner	Others	2000	2001	2002	2003	2004	2010	
Habitat Management, Incentive Schemes and Other Resources (continued)										
21	Promote and ensure the appropriate and beneficial management of land adjoining lowland calcareous grassland sites.	MAFF/FRCA	FWAG, HMAP	➔						C, F
Species Action										
22	Encourage landowners/managers and their advisors to ascertain which Hampshire priority species (listed in Appendix 3) occur on their lowland calcareous grassland sites and ensure that appropriate management is implemented.	HWT	NFU, CLA, HMAP, HGP, BC	➔						C, D, F
23	Identify and promote knowledge of key species that can be used to highlight specific adjustments to standard management regimes (e.g. the Duke of Burgundy, which needs the retention of scrub on calcareous grassland sites) and produce appropriate guidelines.	BC, HWT, EN			➔					C, D, F
24	Develop a monitoring strategy for Hampshire priority species which occur on lowland calcareous grassland.	HWT, EN, BC	LAs		◆↔					D
25	Prepare Species Action Plans (SAPs) for species associated with lowland calcareous grassland which are not adequately covered by this Plan or others, as identified in Appendix 1.	HWT, BC	HCC		◆↔					D
26	Identify 'flagship' species that can be used as indicators to assess progress of this HAP.	HWT	HCC, BC			◆				D, F
Survey, Research and Monitoring										
27	Produce a survey strategy for lowland calcareous grassland to complement actions within this HAP.	HCC	HWT	◆↔						E
28	Implement a rolling re-survey programme for lowland calcareous grassland SINCS at a 10-yearly interval.	HCC		◆↔						E
29	Undertake a comprehensive NVC survey of calcareous grasslands to establish the current extent, distribution and condition of the habitat in Hampshire.	HCC	EN	◆↔						E

**HABITAT
ACTION
PLAN**

Lowland Calcareous Grassland

30	Collate all existing lowland calcareous grassland surveys.	HCC	HWT, BC			◆				E
31	Ensure that all relevant data on lowland calcareous grassland is incorporated into the Hampshire Biological Record and is fed into the National Biodiversity Network (NBN).	HCC		↔	↔	↔	↔	↔	↔	E
32	Produce an inventory of all Hampshire lowland calcareous grassland sites	HCC	EN, HWT			◆				E, F
33	Identify target areas within each Natural Area for lowland calcareous grassland re-establishment, restoration and acquisition.	EN						◆↔		B, C, E
34	Design and implement a monitoring scheme to assess favourable condition of non-SSSI lowland calcareous grassland.	HCC, HWT	EN			◆↔				E
35	Design and implement a monitoring scheme to assess impacts of incentive schemes on lowland calcareous grassland and levels of compliance and take-up by participants.	MAFF/FRCA FWAG				◆↔				E
36	Review the impacts of public access on lowland calcareous grassland sites and effects on nature conservation objectives.	EN	HWT, HCC					◆		E
37	Identify and collate existing research on lowland calcareous grassland in Hampshire.	HCC, HWT	EN, BC			➔				E
38	Review the need for further research on lowland calcareous grassland in Hampshire and promote or facilitate this research as appropriate.	HCC, HWT	EN, BC					➔		E
39	Undertake research to assess the ecological sustainability and viable management of small and/or isolated lowland calcareous grassland sites.	HGP				➔				E
Communication and Publicity										
40	Compile an index of information sources and guidance on good management practices for lowland calcareous grassland and associated priority species.	HCC, HWT, EN	BC			◆↔				C, D, F
41	Convene a Hampshire chalk grassland forum as a means of disseminating best management practice, raising awareness of the habitat and to co-ordinate research and monitoring projects throughout the county.	HCC, EN				◆↔				E, F
42	Promote the ecology and conservation requirements of this habitat and associated priority species, particularly amongst farmers and their advisors.	MAFF/FRCA FWAG	NFU, CLA, HMAP, HGP	↔	↔	↔	↔	↔	↔	F
43	Raise awareness of incentive schemes and projects relevant to the management of lowland calcareous	MAFF/FRCA FWAG	NFU, CLA, HMAP,	↔	↔	↔	↔	↔	↔	F

**HABITAT
ACTION
PLAN**

Lowland Calcareous Grassland

	grassland.		HGP, EHA							
44	Promote the marketing of downland produce e.g. organic Hampshire lamb, as an economic incentive to farmers and land owners/managers to conserve calcareous grassland sites.	HGP			➔					F
45	Identify sites which demonstrate good management practice and establish those sites as centres to raise awareness of lowland calcareous grassland.	EN	HWT, HCC, BC					◆⇄		E, F

	ACTION	DELIVERY BY		YEAR						MEETS OBJ.
		Key Partner	Others	2000	2001	2002	2003	2004	2010	
				◆ = Complete by ◆⇄ = Design by and implement ➔ = Start by ⇄ = Ongoing						
Communication and Publicity (continued)										
46	Increase public awareness of lowland calcareous grassland, including production of promotional material and encouragement of public access to appropriate sites.	HWT, BTCV, HCC, BC		⇄	⇄	⇄	⇄	⇄	⇄	F
47	Involve local communities in the conservation of lowland calcareous grassland sites where appropriate.	HWT, BTCV	BC	⇄	⇄	⇄	⇄	⇄	⇄	C, F
48	Support the actions of the Education & Awareness Action Plan relevant to this habitat and priority species.	ALL		➔						F

**HABITAT
ACTION
PLAN**

KEY TO ORGANISATIONS

BC Butterfly Conservation
 BTCV British Trust for Conservation Volunteers
 CA Countryside Agency
 CLA Countryside Landowners Association
 DCs District Councils
 EHA East Hampshire AONB
 EN English Nature
 FRCA Farming and Rural Conservation Agency
 FWAG Farming and Wildlife Advisory Group

HCC Hampshire County Council
 HGP Hampshire Grazing Project
 HMAP Habitat Management Advisory Project
 HWT Hampshire Wildlife Trust
 LAs Local Authorities (HCC & DCs)
 MAFF Ministry of Agriculture, Fisheries and Food
 MoD Ministry of Defence
 NFU National Farmers Union
 NT National Trust

APPENDIX 1

Key to abbreviations in Tables 1 and 2 – see ‘Action in addition to HAP’ and ‘Status/Protection’

Abbreviation	Definition
ACTION IN ADDITION TO HAP (Other Plans Relevant to Priority Species)	
UK SAP	Species Action Plan prepared under UK Biodiversity programme
UK Grouped SAP	Species catered for by a grouped Species Action Plan prepared under UK Biodiversity programme
UK Species Statement	Conservation of species generally achieved through HAPs. Statement prepared under UK Biodiversity programme to link the relevant Plans.
No Plan	Species removed from revised UK priority list. No Action Plan / Species Statement produced
BC RAP	Butterfly Conservation Regional Action Plan
BC NAP	Butterfly Conservation National Action Plan
PROTECTION: European (EC Habitats Directive)	
Annex II	Designation of protected areas for animals and plants listed
Annex IV	Special protection for animals and plants listed
Annex V	Control of exploitation of animals and plants listed
PROTECTION: British (Wildlife and Countryside Act 1981)	
Sch. 1	Special protection for birds listed
Sch. 5	Special protection for animals listed
Sch. 5 (sale)	Protection against sale for animals listed (Schedule 5 section 9 (5))
Sch. 8	Special protection for plants listed
STATUS: International (International Union for the Conservation of Nature)	
IUCN VU	Vulnerable – Species facing high risk of extinction
IUCN LR/cd	Lower Risk / conservation dependent species – Species that do not satisfy the criteria for ‘Critically Endangered’, ‘Endangered’ or ‘Vulnerable’. They are ‘conservation dependent’ if they are the focus of specific conservation programmes, which if stopped, would result in the taxon qualifying for one of the threatened categories within a period of five years.
IUCN LR/nt	Lower Risk / near threatened species – Species that do not qualify for ‘conservation dependent’ but are close to ‘Vulnerable’ status
IUCN DD	Data Deficient – Insufficient data to make a direct or indirect assessment of a species status, based on its distribution and/or population status.
STATUS: British – Mammals (Red Data Book)	
RDB	Mammal species listed in the British Red Data Book
STATUS: British – Plant and Fungi (Red Data Book and associated)	
RDB Cr	Critically Endangered – Extremely high risk of extinction in the near future
RDB En	Endangered – Very high risk of extinction in the near future
RDB V	Vulnerable – High risk of extinction in the medium-term future
RDB K	Insufficient data to assess status
NS	Nationally Scarce – Plants not on red list but occurring in 16 to 100 10x10 km squares
NT	Near Threatened – Plants not on red list but occurring in 15 or fewer 10x10 km squares
STATUS: British – Invertebrates (Red Data Book and associated)	
RDB En	Endangered – In danger of extinction
RDB V	Vulnerable – Declining or occurring in a vulnerable habitat. Usually occurs in less than 16 10x10 km squares
RDB R	Rare – Not declining but occurring in less than 16 10x10 km squares
RDB K	Insufficiently known – Suspected, but not definitely, Endangered, Vulnerable or Rare
NS (a)	Nationally Scarce – Occurring in 16 to 30 10x10 km squares (for well recorded species)
NS (b)	Nationally Scarce – Occurring in 31 to 100 10x10 km squares (for well recorded species)
STATUS: Royal Society for the Protection of Birds (Birds of Conservation Concern)	
Red List	Various criteria, including a 50% decline in breeding population or range over last 25 years
Amber List	Various criteria, including a 25-49% decline in breeding population or range over last 25 years

Lowland Calcareous Grassland

Table 1 - Hampshire priority species found primarily in lowland calcareous grassland

Scientific name	Common name	Group	Status/Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP	Hants SAP?
<i>Cryptocephalus sexpunctatus</i>	a leaf beetle	Beetles	RDB V	Hazel or birch scrub on chalk downland; Oak or willow in woodland; adults feed on foliage, larvae on leaf litter.	Stockbridge Down only	Care must be taken when controlling scrub on downland as this removes the beetle's habitat	UK SAP	no
<i>Harpalus cordatus</i>	a ground beetle	Beetles	RDB R	Dry calcareous grassland; sand dunes	Portsdown Hill only	-	UK Grouped Statement	no
<i>Seligeria calycina (paucifolia)</i>	a moss	Bryophytes	-	Lumps of chalk in escarpment woodlands, chalk stones in grassland	National stronghold	-	UK Species Statement	no
<i>Weissia sterilis</i>	a moss	Bryophytes	NT	Chalk grassland	Three sites Butser Hill, Broughton Down, Stockbridge Down	-	UK Species Statement	no
<i>Weissia tortilis</i>	a moss	Bryophytes	RDB V	Open chalk-turf and scree	Three sites Butser Hill, Broughton Down, Oxenbourne Down	-	BC RAP	no
<i>Cupido minimus</i>	small blue	Butterflies	Sch. 5 (sale)	Warm, sheltered chalk grassland containing Kidney Vetch, especially on embankments or abandoned chalk or lime pits	Widespread in Hampshire (25 colonies) but extremely local and small colonies	Colonies occur in discrete patches and are vulnerable to overgrazing and disturbance	BC RAP, BC NAP	no
<i>Eurodryas aurinia</i>	marsh fritillary	Butterflies	Annex I, Sch. 5, NS (b)	Open areas of unimproved grassland with abundant Devil's Bit Scabious; also lightly grazed chalk grassland.	Martin Down, Stockbridge Down	Network of habitat patches essential for recolonisation	UK SAP, BC RAP, BC NAP	yes
<i>Hamearis lucina</i>	Duke of Burgundy	Butterflies	Sch. 5 (sale), NS (b)	Lightly grazed chalk grassland with scrub and Primulas	c. 15-18 colonies including Noar Hill, Coulters Dean, Oxenbourne Down, Martin Down	Retain scrub elements and areas of longer grass	BC RAP, BC NAP	yes
<i>Hesperia comma</i>	silver-spotted skipper	Butterflies	Sch. 5 (sale), RDB R	Closely grazed chalk grassland with Sheeps Fescue	Extremely local, only c. 8 colonies, sites include Broughton Down, Oxenbourne Down	Bare ground patches and short turf	UK SAP, BC RAP, BC NAP	yes
<i>Lysandra bellargus</i>	adonis blue	Butterflies	Sch. 5, N b	Closely grazed chalk grassland with Horseshoe Vetch	Only one site, Martin Down	Short cropped turf (associated with ants Lasius/Myonica)	BC RAP	no

Lowland Calcareous Grassland

Scientific name	Common name	Group	Status/ Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP	Hants SAP?
<i>Lysandra coridon</i>	chalkhill blue	Butterflies	Sch. 5 (sale)	Chalk grassland with Horseshoe Vetch	Widespread, 30 - 40 colonies, sites include Broughton Down, Coulters Dean, Oxenbourne Down	Short cropped turf (associated with ants <i>Lasius/Myonica</i>)	BC RAP	no
<i>Gomphocerippus rufus</i>	a grasshopper	Crickets	NS (b)	South facing dry chalk grassland; warm, sheltered conditions	Scattered on chalk in central Hants, Noar Hill	Short turf, south facing	UK SAP	no
<i>Asilus crabroniformis</i>	hornet robberfly	Flies	NS	Chalk downland, dry heathland, rough unimproved pasture; predatory on larvae of dung beetles	National stronghold, few sites including Portsdown Hill, Broughton Down and Cholderton	Maintain supply of dung and low intensity grazing; use of veterinary wormers may be detrimental	UK SAP	yes
<i>Bombylius canescens</i>	a beefly	Flies	NS	Calcareous hillsides, heathy banks	Southern Hampshire only (on eastern edge of range)	-	no	no
<i>Doros profuges (conopseus)</i>	a hoverfly	Flies	RDB V	Chalk grassland, scrub, woodland edge; adults found near Bramble, may use Ash for oviposition, may be associated with <i>Lasius</i> ants	Martin and Oxenbourne Downs only	Maintain scrub edge on grazed chalk grassland	UK SAP	no
<i>Machimus rusticus</i>	a robber fly	Flies	RDB V	Chalk grassland with scrub and rank areas; larvae predatory in soil	Strong colony at Portsdown Hill	Maintain scrub edge on grazed chalk grassland	no	no
<i>Microdon devius</i>	a hoverfly	Flies	RDB V	Chalk grassland, short turf, with scrub and ant hills; associated with <i>Lasius flavus</i> ants	Stronghold on North Downs, including Noar Hill and other East Hants sites	Scrub control, not mowing but grazing	no	no
<i>Tabanus glaucopsis</i>	a horse fly	Flies	RDB R	Chalk grassland, dry hay fields; larvae predatory in soil	National stronghold; Oxenbourne Down and Farley Mount	-	no	no
<i>Zodion notatum</i>	a conopid fly	Flies	RDB R	Dry chalk grassland and heathland; larvae parasitoid of <i>Halictus</i> bees	National stronghold. Very scarce only one site at Oxenbourne Down	Threatened by overgrazing, loss of nectar sources for host, also bees need bare ground for nesting	no	no
<i>Aceras anthropophorum</i>	man orchid	Flw Plants	NS	Calcareous pastures with scrub and some coarse grasses, can tolerate some shade	Exton, Beacon Hill, Martin Down	Can not tolerate heavy grazing, grows best at edge of scrub	no	no
<i>Carex humilis</i>	dwarf sedge	Flw Plants	NS	Chalk downland, closed turf, closely grazed	Stronghold on the edge of Salisbury Plain only	Sheep grazing, short turf	UK SAP	no

Lowland Calcareous Grassland

Scientific name	Common name	Group	Status/Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP	Hants SAP?
<i>Cerastium pumilum</i>	dwarf mouse-ear	Flw Plants	NS	Dry grassy banks with thin overlying soils and open vegetation.	Very rare only at Micheldever spoil heaps	-	no	no
<i>Euphrasia pseudokernerii</i>	chalk eyebright	Flw Plants	NS	Grazed, well drained, herb-rich turf on chalk and other limestones	Locally frequent on Portsdown, local on other downs including Butser, Micheldever, Catherington, Beacon Hill, Martin Down.	-	UK SAP	no
<i>Galium parisiense</i>	wall bedstraw	Flw Plants	NS	Bare chalky ground; chalky field margins	Only 3 sites including Micheldever	Requires bare ground; cannot survive with competitive species	no	no
<i>Galium pumilum</i>	slender bedstraw	Flw Plants	NS	Chalk grassland, short turf, open texture	Very rare, Burghclere only	Short turf, grazed, mown or kept thin by exposure, open texture	UK SAP	no
<i>Gentianella anglica</i>	early gentian	Flw Plants	Annex II, IV, Sch. 8, NS	Chalk downland and chalk pits, where the soil has been disturbed	Very rare and scattered, Martin Down, Noar Hill, Ashley Hole	Rabbit activity and reduced height in vegetation	UK SAP	no
<i>Gentianella germanica</i>	chiltern gentian	Flw Plants	NS	Chalk grassland, cuttings, old chalk-pits, open scrub.	Great Litchfield Down, other sites lost.	-	no	no
<i>Herminium monorchis</i>	musk orchid	Flw Plants	NS	Chalk grassland, short Fescue turf, favours steep slopes and old quarries	National stronghold; handful of sites including Noar Hill	Requires bare ground, infertile soils and disturbance; cannot tolerate competition	no	no
<i>Iberis amara</i>	wild candytuft	Flw Plants	NS	Chalk grassland, disturbed soil, mainly steep south-facing slopes	Isle of Wight Hill, Porton Ranges	Needs bare ground and disturbance	no	no
<i>Juniperus communis</i>	juniper	Flw Plants	-	Forming scrub on chalk grasslands, usually on slopes	Mostly on the downs, e.g. Noar Hill, Stockbridge. Very rare in the New Forest	-	UK SAP	no
<i>Minuartia hybrida</i>	fine-leaved sandwort	Flw Plants	NS	Chalky soil, bare ground, banks, tracks, field margins	Handful of sites	Bare ground, dry places; poor competitor	no	no
<i>Teucrium botrys</i>	cut-leaved germander	Flw Plants	Sch. 8, RDB V	Bare chalk and chalky fallow fields on downs	National stronghold; handful of sites including Micheldever Spoil Heaps	Requires regular disturbance of soil for seedling establishment; poor competitor	UK SAP	no

Lowland Calcareous Grassland

Scientific name	Common name	Group	Status/ Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP	Hants SAP?
<i>Thesium humifusum</i>	bastard toadflax	Flw Plants	NS	Chalk grassland; semi-parasitic on small grasses of short turf	Handful of sites including Broughton Down	Needs short turf; vulnerable to scrub encroachment	no	no
<i>Vulpia unilateralis</i>	mat-grass fescue	Flw Plants	NS	Dry, open, bare chalk, grassy tracks, sometimes on ant hills	National stronghold; few sites including Micheldever Spoil Heaps	Intolerant of competition	UK SAP	no
<i>Helicella itala</i>	heath snail	Molluscs	-	Heavily grazed chalk grassland, sparsely vegetated, chalk rubble, on south facing slopes	Hampshire/Dorset borders, East Hants, Hangers, Old Winchester Hill	Short grazed chalk grassland (cattle seem best) on south- facing slopes; lack of grazing soon reduces numbers	UK SAP	no
<i>Monacha carthusiana</i>	carthusian snail	Molluscs	RDB R	Unimproved chalk grassland, open country, railway embankments, usually south facing	Farlington Marshes, may be extinct	-	no	no
<i>Adscita geryon</i>	cistus forester	Moths	NS (b)	Long grass on calcareous grassland with Common Rock Rose	Formerly national stronghold, now very local: only Stockbridge Down and possibly Teg Down	Little/no grazing required	UK SAP, BC RAP	no
<i>Agrotis cinerea</i>	light feathered rustic	Moths	NS (b)	Chalk grassland with Thyme and possibly other plants	Sites include Broughton Down	Maintain presence of Thyme	UK SAP, BC RAP	no
<i>Heliophobus reticulata</i>	bordered gothic	Moths	NS (b)	Ecology not well known, but on chalk downland	Formerly widespread, last known sites were Porton, Broughton Down, Portsdown Hill.	-	UK SAP	no
<i>Heliothis virespica</i>	marbled clover	Moths	RDB R	Chalk downland with clovers and campions	Several recent records	-	BC RAP	no
<i>Mecyna flavalis</i>	a pyralid moth	Moths	RDB V	Ecological requirements imperfectly understood; associated with calcareous grassland, short turf, warm sites, food plant unknown	Stable at Porton Down and recorded from Broughton Down	-	UK SAP, BC RAP	no
<i>Noctua orbona</i>	lunar yellow underwing	Moths	NS (a)	Ecological requirements imperfectly understood; may require cocksfoot and reed canary grass	National stronghold; main site Porton Down	-	UK SAP	no

Lowland Calcareous Grassland

Scientific name	Common name	Group	Status/Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP	Hants SAP?
<i>Polia bombycina</i>	pale shining brown	Moths	-	Ecological requirements imperfectly understood but associated with wooded areas on calcareous grassland	Alton area, recent decline	-	UK SAP	no
<i>Scotopteryx bipunctaria</i>	chalk carpet	Moths	NS (b)	Ecological requirements imperfectly understood; associated with chalk downland, hot sunny slopes with broken, stony ground, sparse turf; larvae feed on trefoils and clovers	Rare in Hants (Broughton Down), 5-7 colonies	Requires short turf and bare ground	UK Species Statement	no
<i>Tyta luctuosa</i>	four-spotted	Moths	RDB V	Farmland and grassland, requires Field Bindweed	No Hants records since 1958 so probably extinct	Threatened by isolation and habitat fragmentation	UK SAP	no

Table 2 - Priority species, thought to be extinct in Hampshire, which are primarily associated with lowland calcareous grassland

Scientific name	Common name	Group	Status/Protection	Habitat/Ecology	Hants Distribution	Specific management requirements	Action in addition to HAP
<i>Harpalus dimidiatus</i>	a ground beetle	Beetles	NS (a)	Grassland and open ground on calcareous soils	Last recorded pre 1970	Needs open ground	UK Species Statement
<i>Harpalus parallelus</i>	a ground beetle	Beetles	RDB R	Coastal species of calcareous grassland, chalk cliffs and open ground of chalky soils	Last recorded pre 1970	Needs open ground	UK Grouped Statement
<i>Lebia cyanocephala</i>	a ground beetle	Beetles	RDB En	Grassland and open country on calcareous soils; larvae parasitic on <i>Chrysolina hyperici</i> and perhaps other leaf beetles	Last recorded in southern Hampshire, pre 1951	lack of, or changes in grazing regimes may have contributed to its decline	no
<i>Decticus verrucivorus</i>	wart-biter	Crickets	Sch. 5, RDB V	Chalk downland and heathland	Old records from Hants coast, pre 1970	-	UK SAP
<i>Gryllus campestris</i>	field cricket	Crickets	Sch. 5, RDB En	South-facing short turf on sand or chalk, with bare ground	Last Hants record, pre 1970	Bare ground	UK SAP
<i>Myelois cirrigerella</i>	a pyralid moth	Moths	-	Chalk downland with Field Scabious	Probably extinct, but may be overlooked on downland	Maintain presence of Field Scabious	UK SAP, BC RAP

Lowland Calcareous Grassland

Table 3 - Priority species, found primarily in other habitats, but which occur in lowland calcareous grassland

Scientific name	Common name	Group	Primary HAP	Hants SAP?
<i>Bombus humilis</i>	brown-banded carder bee	Bees	Dependent on many habitats, mosaic/landscape species	yes (g)
<i>Bombus ruderatus</i>	large garden bumble bee	Bees	Dependent on many habitats, mosaic/landscape species	yes (g)
<i>Bombus sylvarum</i>	shrill carder bee	Bees	Dependent on many habitats, mosaic/landscape species	yes (g)
<i>Psithyrus rupestris</i>	hill cuckoo bee	Bees	Dependent on many habitats, mosaic/landscape species	no
<i>Alauda arvensis</i>	skylark	Birds	Arable land	yes
<i>Burhinus oedicnemus</i>	stone curlew	Birds	Arable land	yes
<i>Carduelis cannabina</i>	linnet	Birds	Arable land	no
<i>Circus pygargus</i>	Montagu's harrier	Birds	Dependent on many habitats, mosaic/landscape species	no
<i>Thecla betulae</i>	brown hairstreak	Butterflies	Hedgerows	no
<i>Bombylius minor</i>	a beefly	Flies	Heathland, acid grassland, bog	no
<i>Cheilosia nigripes</i>	a hoverfly	Flies	Ancient semi-natural woodland	no
<i>Dorycera graminum</i>	a large otitid	Flies	Unimproved neutral dry grassland, hay meadows	no
<i>Urophora quadrifasciata</i>	a tephritid fly	Flies	Unimproved neutral dry grassland, hay meadows	no
<i>Filago lutescens</i>	red-tipped cudweed	Flw Plants	Arable land	yes
<i>Lathyrus aphaca</i>	yellow vetchling	Flw Plants	Arable land	no
<i>Orchis morio</i>	green-winged orchid	Flw Plants	Unimproved neutral dry grassland, hay meadows	no
<i>Boletus satanas</i>	Devil's bolete	Fungi	Ancient semi-natural woodland	yes
<i>Hygrocybe calyptraeformis</i>	a fungus	Fungi	Unimproved neutral dry grassland, hay meadows	no
<i>Lepus europaeus</i>	brown hare	Mammals	Arable land	no
<i>Nanogona polydesmoides</i>	a millipede	Millipedes	Ancient semi-natural woodland	no
<i>Cucullia lychnitis</i>	striped lychnis	Moths	Road verges	yes
<i>Hemaris tityus</i>	narrow-bordered bee hawk	Moths	Unimproved neutral dry grassland, hay meadows	no
<i>Pareulype berberata</i>	barberry carpet	Moths	Hedgerows	yes
<i>Trichopteryx polycommata</i>	barred tooth-striped	Moths	Hedgerows	yes

APPENDIX 2:

SUMMARY OF MAIN CHALK GRASSLAND NVC COMMUNITIES IN HAMPSHIRE

Lowland calcareous grasslands are defined, in the context of the National Action Plan, as the first nine calcareous grassland National Vegetation Classification (NVC) communities (**CG1 - CG9**). A systematic NVC survey of roughly half of the remaining chalk grassland in Hampshire took place in 1987 in which it was found that three NVC communities make up the bulk of calcareous grassland in the county:

- **CG2** *Festuca ovina - Avenula pratensis* (sheep's fescue - meadow oat grass) grassland occupied around 40% of the area surveyed;
- **CG3** *Bromus erectus* (upright brome) grassland occupied a further 27%; and
- **CG6** *Avenula pratensis* (meadow oat grass) grassland occupied 14%.

Of these, the sub-communities **CG2a**, **CG3a** and **CG6a** are the most frequent. **CG4** *Brachypodium pinnatum* (tor grass) grassland is almost absent from the county with only 0.6 ha. being recorded at Martin Down and Pitt Down in the south-west of the county. A number of mosaic communities, occasionally with chalk scrub and chalk heath, and intermediates with more mesotrophic (MG) communities are also present.

CG2 *Festuca ovina - Avenula pratensis* (sheep's fescue - meadow oat grass) grassland is characterised by a species rich continuous sward with a high density of grass and herb species. It is typically found on free-draining, south-facing, and sometimes thin soils and is maintained by grazing. This turf is often favoured by a number of rare and scarce downland butterflies and other invertebrates. Many nationally rare and scarce plants are also associated with Hampshire chalk grassland, including a number of orchids such as the frog orchid, burnt orchid, man orchid and musk

orchid together with hairy rock-cress, round headed rampion, dwarf sedge, early gentian and bastard-toadflax. The predominant sub-community in Hampshire is **CG2a** characterised by stemless thistle and squinancywort which usually forms a short-grazed, species rich turf with horseshoe vetch and chalk milkwort highly characteristic.

CG3 *Bromus erectus* (upright brome) grassland can, in many ways, be regarded as ungrazed **CG2** in terms of structure and floristics but with a greater prominence of upright brome grass, and an overall reduction in botanical diversity. The **CG3a** (typical sub-community) is the most frequent in Hampshire and most closely resembles **CG2** grassland. Some **CG3** grassland can be very rank but the more robust herbs such as salad burnet, ribwort plantain, and bird's-foot trefoil will persist. Reintroduction or intensification of grazing will often increase the species richness of this community.

CG6a *Avenula pubescens* (downy oat-grass) grassland (cocksfoot -quaking grass sub-community) is a nationally widespread, yet rather scarce vegetation type which is recorded on a large number of sites in Hampshire. This community is often species rich in this county, unusually with red fescue rather than downy oat-grass dominant.

**HABITAT
ACTION
PLAN**

**APPENDIX 3:
LIST OF SSSIs CONTAINING CHALK GRASSLAND HABITAT IN HAMPSHIRE**

SITE NAME	PUBLIC OWNERSHIP	ADDITIONAL DESIGNATIONS
Ashford Hangers	HCC	NNR
Beacon Hill	EN	NNR
Brickworth Down and Dean Hill	MoD	
Broughton Down	Part owned by HWT	
Burghclere Beacon	Part managed by HCC	
Butser Hill	HCC/FC/HWT	NNR
Danebury Hill	HCC reserve	
Catherington Down	Joint HCC/HWT reserve	LNR
Cheesefoot Head		
Highclere Park		
Knighton Downs and Wood		
Ladle Hill		
Martin and Tidpit Downs	Main part managed by EN	NNR
Micheldever Spoil Heaps	Part HWT reserve	
Noar Hill	Part HWT reserve	cSAC
Old Winchester Hill	EN reserve	NNR
Old Burghclere Lime Quarry	HWT reserve	
Porton Down	MoD/DERA	SPA, cSAC
Portsmouth Down	MoD, Portsmouth City Council and Fareham Borough Council	
Quarley Hill Fort		
Rushmore and Conholt Downs		
St Catherines Hill	Part HWT reserve	
Stockbridge Down	Part NT	
Salisbury Plain	MOD	cSAC
West Woodhay Down	BBOWT	

KEY TO ORGANISATIONS:

BBOWT	Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust
DERA	Defence Evaluation Research Agency
EN	English Nature
FC	Forestry Commission
HCC	Hampshire County Council
HWT	Hampshire Wildlife Trust
MoD	Ministry of Defence
NT	National Trust

KEY TO DESIGNATIONS:

LNR	Local Nature Reserve
NNR	National Nature Reserve
CSAC	Candidate Special Area of Conservation
SPA	Special Protection Area for Birds

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**HABITAT
ACTION
PLAN**

This Plan is one of many Habitat, Species and Topic Action Plans being prepared by the Hampshire Biodiversity Partnership. It will be monitored by the Partnership and fully reviewed and updated in 2004.

This habitat action plan has been prepared by Jonathan Cox and Jane Barneveld and the Lowland Calcareous Grassland HAP Working Group on behalf of the Hampshire Biodiversity Partnership.

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