

Lowland calcareous grassland

Biodiversity Action Plan





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List of Contributors

This Biodiversity Action Plan has been compiled and written by representatives of the following:

Bedfordshire County Council

BTCV

Butterfly Conservation

Chilterns Management Board (Chilterns AONB)

English Nature

Farming and Rural Conservation Agency (FRCA)

Hertfordshire and Middlesex Wildlife Trust

Hertfordshire Countryside Management Service

Luton Borough Council

National Trust

North Chilterns Trust (formerly the Chilterns Initiative)

RSPB

Whipsnade Wild Animal Park

Wildlife Trust for Beds, Cambs, Northants and Peterborough

A number of individuals, Landowners and Farmers

This action plan will be taken forward by the Wildlife Trust. If you would like more information about this action plan please contact the Convenor, Graham Bellamy, Senior Conservation Officer, The Wildlife Trust, Visitor Centre, Priory Country Park, Barkers Lane, Bedford. MK41 9SH Tel (01234) 364213. email bedswt@cix.co.uk





1. Vision

Chalk grasslands form a continuous swathe across the south of the County with links to other grassland areas and habitats.

Sustainable grazing maintains the rich diversity of characteristic fauna and flora.

People enjoy extensive open access and understand the importance of chalk grassland to biodiversity, and value it as a legacy to be passed onto future generations.

2. Scope of the Lowland calcareous grassland Biodiversity Action Plan

Lowland calcareous grassland is one of the most important habitat types in the County supporting unique and rich plant communities. The UK Steering Group Report defines these as including

All semi-improved and unimproved grassland occurring on shallow lime-rich soils normally underlain by chalk or limestone rocks.

Lowland calcareous grassland has been identified within the National Biodiversity Action Plan as a priority for conservation action.

Bedfordshire and Luton contains five different types of calcareous grassland

- c Chalk grassland
- c Chalk heath
- c Limestone grassland
- c Chalk scrub
- c Calcareous boulder clay grassland

The majority of calcareous grassland in Bedfordshire and Luton is **chalk grassland**. These are predominately associated with the steep scarp slopes of the Chilterns chalk outcrop. In addition, grassland has developed on the bare chalk of former chalk quarries.

Small areas of chalk heath and limestone grassland can be found in the County. **Chalk heath** forms where the proximity and neutralising action of the chalk underneath creates a mixture of chalk grassland and dry heath/acid communities. An example is Whipsnade Heath. Small areas of **limestone grassland** can be found on the Jurassic limestone of the Upper Ouse Valley associated with Valley springs. **Chalk scrub** occurs on neglected former calcareous grassland of which remnants remain. The scrub community can be simple and usually dominated by hawthorn or can be diverse in structure and species forming a rich and valuable community if sufficient grassland remains. **Calcareous boulder clay grassland** can occur on deeper soils than chalk grassland forming on lime rich clays left after the last glaciation. These grasslands can be species rich and good examples are at Thurlleigh airfield.

Woodlands found on calcareous soils are covered by the Woodland Biodiversity Action Plan and Chalk rivers are covered within the Waterways and Wetlands Biodiversity Action Plan.

This Biodiversity Action Plan will deal with chalk grassland, unless otherwise specified.

Key species of chalk grassland

This habitat action plan will ultimately be supported by a number of species action plans. These species which will have action plans written for them have been listed in the Complementary plans section at the rear of this document.

The list below highlights some of the characteristic species of calcareous grassland in the County, including those that are national priorities for conservation action, highlighted in bold.

***Muscardinus avellanarius* Dormouse**

Coturnis coturnix Quail

***Alauda arvensis* Skylark**

Locustella naevia Grasshopper warbler

Turdus torquatus Ring ouzel

Asio otus Long eared owl

Anthus trivialis Tree pipit

Saxicola rubetra Whinchat

Oenanthe oenanthe Wheatear

Lysandra coridon Chalkhill blue

Cupido minimus Small blue

Hamearis lucina Duke of Burgundy

Tyta luctuosa The Four Spotted

Agrotis cinerea Light feathered rustic

Polia bombycina Pale shining brown

Scotopteryx bipunctaria Chalk carpet

Adscita geryon Cistus forester

Sesia bembeciformis Lunar hornet moth

Pyrgus malvae Grizzled skipper

Erynnis tages Dingy skipper

Callophrys rubi Green hairstreak

Argynnis aglaja Dark green fritillary

Leiodes lunicollis a beetle

Licimus depressus a beetle

Cheilosia cynocephala a fly

Dicraeus raptus a fly

Stratiomys potamida a fly

Stenobothrus lineatus Stripe winged grasshopper

Centromerus capcinus a spider

Lepthyphantes insignis a spider

Ajuga chamaepitys Ground-pine

Bunium bulbocastanum Great pignut

Hypochaeris maculata Spotted cat s-ear

Seseli libanotis Moon carrot

Aceras anthropophorum Man orchid

Euphrasia pseudokernerii Eyebright

Fumaria densiflora Dense-flowered fumitory

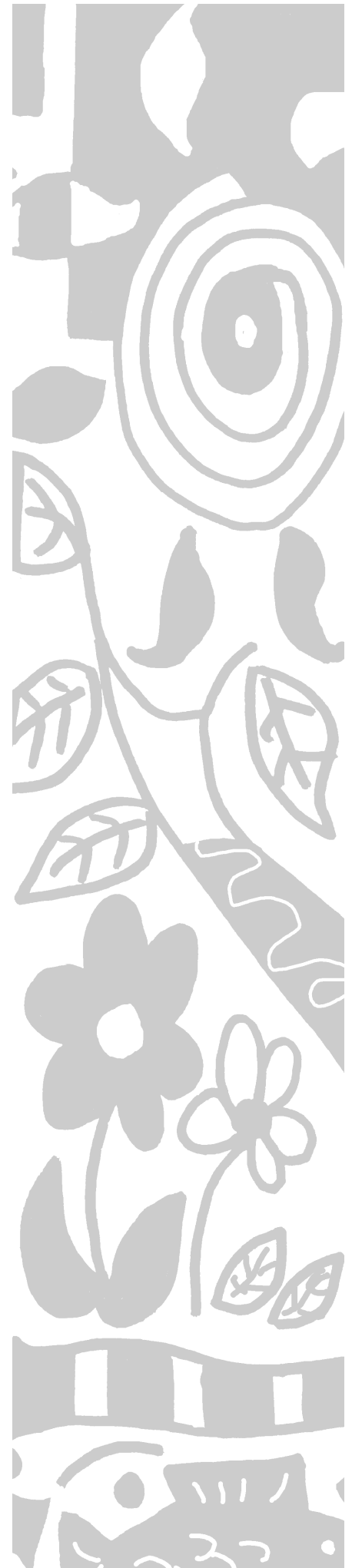
Gentianella germanica Chiltern gentian

Herminium monorchis Musk orchid

Iberis amara Wild candytuft

Orchis ustulata Burnt orchid

Continued.....





Pulsatilla vulgaris Pasqueflower
Cerastium brachypetalum Grey mouse-ear
Tephrosieris intergrifolia Field fleawort
Ophrys insectifera Fly orchid
Spiranthes spiralis Autumn lady s-tresses
Thymus praecox Wild thyme
Asperula cynanchica Squinancywort
Helianthemum chamaecistus Common rock-rose

Calcareous grasslands are also known to be important for species of mollusc and bryophytes, however little is known of their current status in the County.

3. Current status of calcareous grassland

Current National status

It is estimated that there are 33, 000 - 41,000 ha of calcareous grassland in the UK, with less than 1,000 ha in Wales. The bulk of the resource is found on chalk (23, 000 - 32,000 ha) with the greatest concentrations in Wiltshire, Dorset and the South Downs.(UK Biodiversity Steering Group Report Vol.2)

Chalk grassland cover has declined sharply in extent over the last 50 years. There are no comprehensive figures, but a sample of chalk sites in England surveyed in 1966 and 1980 showed a 20% loss in that period. In Dorset alone an assessment of chalk grassland found that there had been a decline of 50% between the mid 1950 s and early 1990 s.

Chalk grasslands, with rolling hills and coombes, are a typical feature of the landscape in southern England highly valued by people. These grasslands are often species-rich, supporting a wide range of plants restricted to lime rich soils including grasses and herbs such as common rock-rose, wild thyme and horseshoe vetch. Chalk grasslands are home to specialised and diverse invertebrate fauna particularly butterflies such as chalkhill blue, duke of burgundy and green hairstreak.

Scrub is a prominent feature on many sites. Mixed aged and structured scrub can enhance the wildlife interest of a site by providing food and shelter to a range of birds and invertebrates than grassland could support alone. In the absence of management scrub can expand to obliterate grassland areas, which in time can develop into woodland often dominated by ash.

Current Local status

Chalk grasslands in Bedfordshire and Luton are found on the steep slopes of the Chiltern Hills. Traditionally the slopes were used for sheep grazing because many of them were too steep for arable cultivation. In recent years agricultural improvements and the decline in stock farming in the area has left grassland sites vulnerable to invasion by scrub. The fact that the Bedfordshire sites are fragmented and many are difficult to get to has made grazing for nature conservation purposes uneconomic in the majority of cases. Additional difficulties are faced when attempting to locate appropriate animals for grazing regimes. Many sites contain some scrub and secondary woodland as well as grassland. Chalk scrub communities support diverse assemblages of species and are an example of natural succession.

The Phase 1 habitat survey undertaken in 1987/88 revealed that there are approximately 300 ha of unimproved calcareous grassland in Bedfordshire, with a further 182 ha of semi-improved calcareous grassland, constituting just under 0.4% of the County. These sites range from traditional downland in open countryside to more fragmented but still extensive sites in urban areas.

Species characteristic of calcareous grassland in Bedfordshire and Luton include sheep s-fescue, quaking-grass, clustered bellflower, wild thyme, orchids and the nationally rare pasqueflower and great pignut.

Large chalk quarries at Sundon and Houghton Regis have developed rich calcareous grassland communities, including significant populations of the rare Chiltern gentian.

Calcareous grasslands on limestone are limited to a few sites on the sides of the Ouse valley and railway cuttings north of Bedford. One SSSI (Stevington Marsh) and three CWS have been identified in part for the significance of their limestone grassland. Some grasslands that have developed on the lime rich boulder clays of north Bedfordshire also show some characteristics of lowland calcareous grasslands.

Dwarf shrubs and herbs characteristic of acid soils are sometimes associated with calcareous grassland forming chalk and limestone heath. The top of Galley Hill near Luton used to support a fragment of this type of vegetation.

4. Current factors affecting calcareous grassland

The factors affecting calcareous grassland are wide ranging, they include the following which may affect all sites to a greater or lesser degree.

Agricultural intensification and the plantation of trees, with the associated use of fertilisers, pesticides, re-seeding and ploughing will damage or destroy calcareous grassland, this leads to the fragmentation and isolation of the remaining habitat and eventually the loss of species.

Undergrazing or no grazing will lead to change, particularly scrub invasion and the expansion of tor grass, reducing biodiversity, and the eventual loss of grassland. Calcareous grasslands are not very attractive to livestock farmers because of their low productivity, and the breeds of sheep and cattle that are able to live well on them are slow to mature and not attractive for modern farming systems.

Also overgrazing and disturbance of the ground, for example by rabbits, can be damaging through the physical destruction of the turf and the encouragement of ragwort making grazing unattractive because of its toxicity to livestock. The use of land for development, such as housing, industry, roads and quarrying; also destroys, fragments and isolates habitat and makes management difficult or unattractive to a farmer through reduced size and increased visitor pressure and disturbance to livestock. Social problems such as fly tipping, vandalism, dog fouling, livestock worrying and fire can all make management difficult and eventually lead to loss of wildlife interest. High visitor numbers can reduce the breeding success of vulnerable species particularly ground nesting birds, and lead to erosion and the trampling of susceptible plants.

The invasion of non-native scrub species such as *Cotoneaster sp* and *Buddleja sp* can overwhelm the native species and change the character of the grasslands.

The lack of baseline data on the locations and populations of plants and animals, and of the relative importance of scrub habitats leads to uncertainty for local nature conservation organisations in making decisions about management and for allocating scarce time and financial resources.

The current levels of grant aid to finance for nature conservation management are often not attractive enough to tackle the work that is needed for both the farmer and nature conservation bodies.





5. Current action

Site protection

There are 8 SSSI grasslands, and at least 24 County Wildlife Sites. These sites range from traditional downland in open countryside, as at Sharpenhoe Clappers, to more fragmented but still extensive sites in urban areas, such as Bradgers Hill. Two sites, Barton Hills and Knocking Hoe, are managed as National Nature Reserves and a number of other SSSI and CWS such as Galley and Warden Hills and Smithcombe and Sundon Hills, are within nature reserves or country parks.

Management

In Bedfordshire, organisations and groups with an interest in chalk grassland management work together under the name of the Chalk Grassland Managers Group or CGMG for short. The members of the CGMG agree and share best practise, develop joint projects and share tools, resources and ideas. Members vary from large, landowning organisations like the National Trust, to specialist nature conservation groups like Butterfly Conservation. The group also includes organisations such as the Wildlife Trust, Bedford County Council, Luton Borough Council, the North Chilterns Trust and the office of the Chilterns Area of Outstanding Natural Beauty, and some farmers and livestock owners.

Practical management is carried out by individual landowners, members of the CGMG acting co-operatively, and community groups particularly the Luton and Dunstable Conservation Volunteers who work where the need is greatest.

Advisory services

Advice on the management of chalk sites, management for particular species and potential sources of funding is available from the following organisations:

- c Bedfordshire County Council
- c Luton Borough Council
- c The Wildlife Trust
- c The North Chilterns Trust
- c Farming and Wildlife Advisory Group (FWAG)
- c English Nature
- c Butterfly Conservation
- c Farming and Rural Conservation Agency
- c Ministry of Agriculture, Fisheries and Food (MAFF)
- c RSPB
- c County Landowners Association (CLA)
- c National Farmers Union (NFU)

6. Action plan objectives and targets

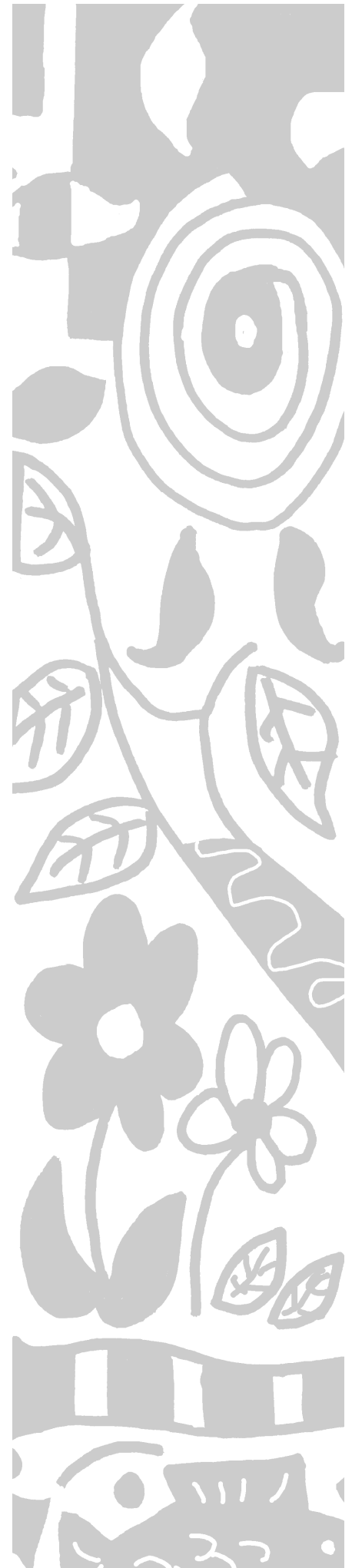
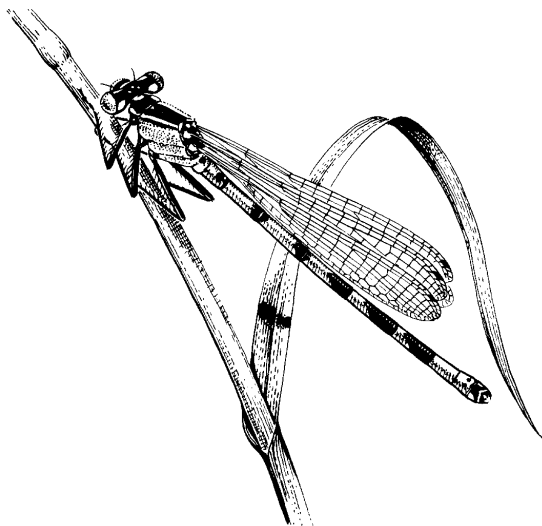
The objectives in the action plan are broad, cover habitat conservation, restoration and expansion and underpin the vision. The targets are meant to be measurable and specific. However many are based on incomplete information and will be refined in time as new data becomes available.

Objectives

- A. Maintain or enhance the wildlife value of existing calcareous grassland
- B. Prevent the loss of calcareous grassland in Bedfordshire and Luton
- C. Promote the restoration of downland landscape through the creation and linking of new and existing habitats
- D. Maintain or increase the populations of declining chalk species where possible in particular national priority species
- E. Encourage more community involvement in and awareness of the issues surrounding calcareous grassland management and biodiversity
- F. Monitor the extent and quality of key habitats and the population of key species to improve the basis for decision making

Targets

- A. Secure favourable management of 100% of SSSI calcareous grassland before 2005
- B. Secure favourable management all county wildlife site calcareous grasslands by 2010
- C. Create 50 ha of chalk grassland by 2010
- D. Review site designations to strengthen protection of calcareous grassland SSSI and county wildlife sites by 2005



7. Proposed action

Abbreviations

AONB	Chilterns Area of Outstanding Natural Beauty
BC	Butterfly Conservation
BCC	Bedfordshire County Council
BNHS	Bedfordshire Natural History Society
EN	English Nature
LBC	Luton Borough Council
NCT	North Chilterns Trust
NT	The National Trust
WT	Wildlife Trust for Beds, Cambs, Northants & Peterborough

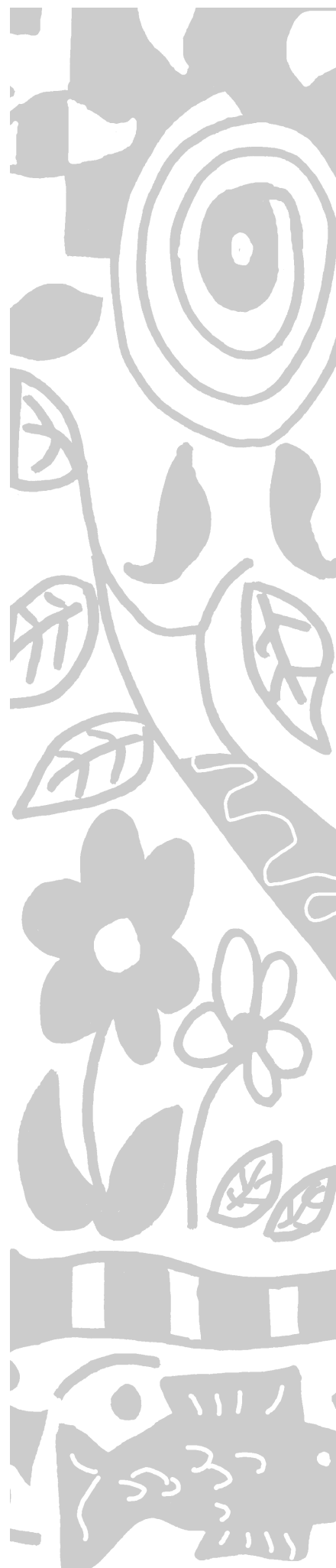
Action

Implemented by

Policy and legislation

a). Lobby for rabbit control to be included in Countryside Stewardship Funding	BCC, NT, WT
b). Lobby to simplify, widen the scope and increase the level of funding available for agri-environment schemes	WT
c). Lobby for management grants to support existing designations e.g. SSSIs and County Wildlife Sites	WT
d). Lobby for more flexible setaside	WT
e). Increase the level of funds available to support work on chalk habitats through the development of funding proposals such as the HLF Chalk Bid and English Nature's Grazing Animals Project	AONB, BCC, NCT, NT, WT,
f). Lobby to make the restoration to calcareous grassland of ex-industrial sites and quarries a statutory duty of site owners where there is the potential.	
g). Strengthen the protection of County Wildlife Sites by including them in all development plans	LBC
h). Revise the Phase I and II surveys of non SSSI grasslands in the Chilterns, including road verges. Revise the suite of SSSI and CWS based on above surveys and new criteria	LBC, WT

Action	Implemented by
Site safeguard and management	
a). Develop and support initiatives to improve the management and creation of calcareous grassland habitats through organising training and increasing awareness	EN, LBC, NCT, NT, WT,
b). Develop and support a co-ordinated approach to rabbit control	BCC, LBC, NT, WT,
c). Develop a co-ordinated approach for the management of chalk sites ensuring the sharing of resources	
d). Promote Countryside Stewardship for the creation and management of calcareous grassland habitats	LBC, NCT, WT
e). Increase the number of farms with whole farm plans which could have implications for calcareous habitats, including within them details on scrub management and rabbit control	NCT
f). Manage existing sites by effective grazing and have in place a sustainable grazing scheme co-ordinating grazing across ownership boundaries	EN, LBC, NT, WT,
g). Identify areas where scrub should be retained and where scrub/grassland mosaics of various proportions are appropriate, control scrub encroachment on grassland elsewhere	BC, LBC, NCT, NT, WT,
h). Expand the area of chalk grassland through reversion of arable areas and link existing sites through the creation of habitat corridors	BC, LBC, NCT, NT, WT,
i). Encourage the management of ex-industrial sites including quarries to maintain and increase their wildlife value	BCC, LBC, NCT, WT
j). Encourage appropriate grazing by farmers and landowners, and keep all possible options, such as flying flocks under constant review	BCC, EN, LBC, NCT, NT, WT,
k). Widen the membership of the Chalk Grassland Managers Group to include more private landowners	WT
l). Enhance and where necessary restore chalk heath and limestone habitats	WT



Action	Implemented by
m). Promote increased community involvement in the management and monitoring of sites	WT
n). Develop the relationship between conservation methods and commercial practices, by involving commercial partners in schemes and projects	LBC, NCT, NT, WT,
Advisory	
a). Co-ordinate and promote advice on calcareous grassland management to all site owners, occupiers and managers across the county	EN, LBC, NCT, WT,
b). Develop training programmes to enable everyone involved in managing calcareous grassland to subscribes to current best practice	LBC, NCT
c). Seek to secure funding for advisory services in particular for landowners	LBC, WT
d). Continue to support and develop the Chalk Grassland Managers Group	LBC, NCT, NT, WT
Future research and monitoring	
a). Update environmental databases and support the development of the Biodiversity Recording and Monitoring Centre (BRMC) for Bedfordshire and Luton.	BC, BNHS, LBC, WT
b). Monitor changes in population levels and distribution of national priority species through base-line survey and monitoring at five year intervals in conjunction with the BRMC	BC, BNHS, LBC, NT, WT,
c). Identify opportunities to reverse fragmentation and isolation of calcareous grassland, identify most likely links and contact owners.	NCT, WT
d). Establish or continue to monitor butterfly populations at all sites	BC
e). Determine appropriate management regimes to encourage restoration of priority habitats and species	BC, BNHS, LBC, NCT, NT, WT
f). Implement recommendations from marketing study for agricultural produce from downland sites	AONB, NCT
g). Bring up to date information on molluscs and bryophytes associated with calcareous grassland	WT
h). Undertake a comprehensive audit of the chalk landscape in south Bedfordshire	LBC, WT
i). Develop a strategy for possible introductions and species recovery	BC

Action	Implemented by
Communication and publicity	
a). Promote awareness amongst local people, land managers, local authorities and statutory organisations of the importance of chalk grassland habitats and species, and the need for conservation action	AONB, LBC, NCT, NT, WT,
b). Encourage a sustainable and co-ordinated approach to managing and encouraging visitors across downland areas, including foot, bike, horse and car-borne visitors and their dogs	AONB, LBC, NCT, NT, WT,
c). Provide appropriate interpretation at key calcareous grassland sites with open access	
d). Produce a range of educational material linked to the national curriculum relating to calcareous grassland	
e). Use existing well-visited sites and facilities such as Visitor Centres as a focus for action to inform and involve visitors	AONB, NCT, NT, WT,
f). Promote informal and formal education through life long learning	WT
g). Use local media to explain the need for conservation management	NCT, WT





8. Monitoring the Action Plan

This Biodiversity Action Plan will be monitored and reviewed by the Chalk Grassland Managers Group, (as representatives of all the organisations/landowners with an interest in chalk habitat) and used as a guide for co-ordinating work over the next 5 years.

9. Complementary plans

The UK Steering Group has written a National Biodiversity Action Plan for Lowland calcareous grassland.

The counties of Hertfordshire, Buckinghamshire and Cambridgeshire have produced Lowland calcareous action plans. A Biodiversity Action Plan for the whole Chilterns AONB area is currently in preparation.

This action plan should be read alongside biodiversity action plans written for Farmland, Lowland heathland and Acid grassland, Woodland, Urban, Waterways and Wetlands in Bedfordshire and Luton. Plans also exist for Community Involvement and Public Awareness and Data and Monitoring.

To complement this habitat action plan the following species will have their own Action Plans.

Dormouse
Ground-pine
Great pignut
Pasqueflower
Grey mouse-ear

10. Acknowledgements

Illustrations courtesy of English Nature and S Halton.

11. References

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