



**TREND IN PEAK THE DISTRICT:**

Estimated 50 % loss this century and continuing decline.

**ESTIMATED EXTENT IN THE PEAK DISTRICT:**

260 ha (not all of high quality).

**NATIONAL BAP HABITATS:**

Lowland Meadows, Lowland Acid Grassland and Lowland Calcareous Grassland (all priority habitats). Metallophyte communities (those associated with heavy metal contamination) are covered by the Inland Rock broad habitat type.

**ASSOCIATED NATIONAL BAP PRIORITY SPECIES:**

Skylark, brown hare.

**ASSOCIATED PEAK DISTRICT AUDITS:**

Lead Rakes.

## INTRODUCTION

Centuries of mining the mineral veins in the White Peak have resulted in a distinctive network of hillocks and hollows, sometimes stretching in lines across the limestone plateau and dalesides. It is these surface remains, referred to here as lead rakes, which are covered by this action plan. These features, some dating back to Roman times, form part of the historic character of the landscape and provide a habitat for varied and unique plant communities. Lead rakes support a complex mosaic of different vegetation types, reflecting their great range in topography and the varied nature of the waste material. Sometimes the hillocks are made up of rock. More often it is a mix of fluorspar, calcite, barytes and soil, all materials which were of no use to the old miner and thus cast aside as waste. As a result of this variation many different species with contrasting environmental requirements grow in close proximity to each other making lead rakes ecologically very exciting. Notably, the toxic nature of the some of the lead rake material results in distinct areas of specialised metallophyte (metal tolerant) vegetation which are considered to be internationally important.

A range of different communities can be found from rich calcareous and neutral swards to acid grasslands with mountain pansy and open sparsely vegetated areas of metallophytes on spoil which is rich in heavy metals. Here large populations of spring sandwort (known locally as leadwort) can occur. Many interesting species are present in the rich grasslands, such as moonwort, frog orchid and fragrant orchid. Nationally, the range and populations of such species has declined dramatically in recent decades. Areas such as lead rakes can provide a true haven for a variety of plants and associated wildlife.

Each rake is unique, a complex reflection of a myriad of historical, management and environmental factors. Fundamentally they are a vivid link with the history of the site. The complexity of lead rakes makes it impossible to re-create the inherent interest of a site. In essence, the holistic value of lead rakes is not re-creatable even if the science were available for the re-creation of the constituent plant communities. Once a lead rake is lost, to either agricultural improvement or to re-working for their minerals, this unique complexity is lost forever.

Lead rakes are not only important for plants but for a range of other wildlife associated with flower rich grasslands. The profusion of different species provides a wealth of nectar for insects and seed for birds and small mammals. The sparsely vegetated areas of spoil are important for lichens and provide 'hot spots' for invertebrates. In addition features such as old mine shafts can provide roosts for bats and the stony heaps offer hibernation sites for amphibians.

The majority of lead rakes are confined to the White Peak but this Action Plan covers the whole of the ore-field including the lead rakes on the edge of the Dark Peak Natural Area and around Ashover, in the Derbyshire Peak Fringe Natural Area. Lead rakes which are found in the limestone dales are covered in the Limestone Dales Action Plan.

There are concentrations of ecologically important lead rakes across the ore-field, including the parishes of Bonsall, Castleton, Bradwell, Elton, Winster, Monyash, Cromford, Middleton-by-Wirksworth, Wirksworth and Brassington.

A recent assessment of aerial photographs by the National Park's Archaeology Service has concluded that only about a quarter of hillocks that existed in the 19th century are archaeologically in a reasonable condition. Losses across the ore-field have now reached a critical point; conservation of remaining important lead rakes is essential if vital parts of the lead rake resource are not to be lost forever.

## ADVERSE IMPACTS

	Historic	Current
<b>Land Management</b>		
Levelling of hillocks and subsequent ploughing and re-seeding.	✓	✓✓
Applications of organic and inorganic fertilisers, herbicide, pesticides and lime.	✓	✓
Application of paper pulp.		✓
Neglect, leading to the development of rank swards and scrub encroachment.		✓
Over-grazing leading to poaching and a reduction in species richness.		✓
The increase in the use of fields as pony paddocks.		✓
<b>Pollution</b>		
Sheep dip disposal.		✓



## ACTION PLAN OBJECTIVES AND TARGETS

### National Targets

Lead rakes are not specifically covered by a National Action Plan but a number of National Action Plans relate to lead rakes, notably lowland meadows, lowland acid grassland and lowland calcareous grassland. All have similar targets.

Lowland Calcareous Grassland, Lowland Dry Acid Grassland and Lowland Meadows:

- Arrest the depletion throughout U.K.
- Agree favourable management on all the resource in unfavourable condition within SSSIs by 2005 and achieve favourable condition wherever feasible by 2010.
- Secure favourable condition over 30 % of resource outside SSSIs by 2005 and as near 100 % as practicable by 2015.
- Re-establish 1000 ha of lowland calcareous grassland and 500 ha of lowland acid grassland and lowland meadow at carefully targeted sites by 2010.

### A Vision for the Peak District

The objectives and targets reflect the value of the lead rakes and the alarming losses of this important part of the Peak District cultural heritage, landscape and wildlife. Perhaps more than any other habitat they are a vivid reflection of the rich resources provided by the geology of the Peak District, its use by mankind over the centuries and nature's response to the harsh environment of the abandoned mines. Today, less than 260 ha of lead rakes remain. This is all that remains of not only the complex vegetation communities and their important plants but of the surface representation of the history of mining in the Peak District. A willingness by those responsible for their future to work together is fundamental: the farmers and landowners, the mineral companies and the Biodiversity partnership. With comprehensive knowledge as a basis, solutions can be found. These may at times involve compromise and understanding for all involved but with a shared vision to cherish the special history and wildlife of lead rakes these targets can surely be achieved.

## OBJECTIVES AND TARGETS

### Objective 1

**Bring all important lead rakes in the Peak District into favourable condition.**

#### Targets

Secure favourable management on 100 % of lead rakes within SSSIs by 2005.

Identify all important lead rakes within the Peak District ore-field by the end of 2004.

Secure an appropriate conservation agreement on 50 % of all important lead rakes outside of SSSIs by 2005. Review and set a new target for 2005 - 2010.

For all important lead rakes outside of existing agreements, make all landowners/managers aware of available conservation schemes by the end of 2005.

### Objective 2

**Restore ecologically poor quality, over grazed or neglected lead rakes to favourable condition.**

#### Targets

Restore 25 ha of ecologically poor quality lead rakes to favourable condition by 2005. Review and set a new target for 2005 - 2010.

### Objective 3

**Create open metallophyte vegetation and species rich grasslands on lead rakes that are being re-worked for their mineral to reverse the decline in these community types.**

#### Targets

Initiate attempts to create 1.4 ha of open metallophyte vegetation on worked mineral sites by 2010. This target represents 20 % of the resource in the 5 key areas surveyed by the Lead Rakes Project.

Initiate attempts to create 15 ha of species rich grasslands on worked mineral sites by 2010.

## Main Factors Likely to Affect Achievement of Targets

### Land Management

Implementation of the Rural Development Regulation and reform of the Common Agricultural Policy.

The general problems of negotiating grassland conservation agreements are exacerbated on lead rakes since mineral rights ownership is often separate to that of the surface ownership.

Effectiveness of agri-environment and conservation scheme prescriptions.

### Resources and Financial Incentives

Limited rewards from agri-environment and conservation schemes and lack of incentives for favourable management.

Availability of funding for survey, negotiations and agreements.

High land prices – forcing intensive management following purchase of land.

### Planning and Regulations

Planning policy.

Lack of planning controls for agricultural operations – Permitted Development Rights (PDR) allow in-filling and levelling of lead rakes within a farm holding. Hillock removal from a site (for mineral processing or in-filling) is allowed under General Development Orders (GDO). The Mineral Authority has the power to request a full planning application for operations covered by GDO but this may result in compensation having to be paid by the Authority.

### Others

Value of lead rakes and their underlying veins for vein minerals – exacerbated by the national scarcity and need for fluorspar.

The toxicity of lead rakes – linked to both historical planting of lead rakes and current desire to remove toxic hillocks.

Pereived 'Derelict' appearance of lead rakes.

Lack of safeguard or effective conservation mechanisms outside of SSSIs. It is often at the time of change of ownership that lead rakes, as with other grassland habitats, are most at risk. At present there is no systematic procedure or mechanism for conservation bodies and local authorities to have an opportunity to safeguard such land.

## ACTIONS

Key to the achievement of the proposed targets are actions relating to:

- Survey, evaluation and negotiations to secure appropriate land management (LR4 and LR22 - 25);
- Ensuring agri-environment and conservation schemes provide adequate financial incentive and appropriate management prescriptions to safeguard and enhance lead rakes (LR21);
- The assessment of planning applications and GDOs (LR31 and 35);
- The review of GDOs, PDRs and waste tipping regulations (LR33 - 35) and
- Developing a strategy for safeguarding sites of particular wildlife importance where this cannot be achieved through the normal channels of negotiation, as the current systems are still inadequate to secure the future of some of our best remaining lead rake landscapes (LR29).

ACTIONS	TIMESCALE	LEAD AGENCY & Partners
<b>DATA COLLATION AND SURVEY</b>		
<b>Data Collation</b>		
LR1 Collate existing information on lead rakes across the whole ore-field and identify gaps in the knowledge. (Objective 1)	2001 - 2002	PDNPA/WTs (joint leads)/EN/LRCs/LAs Voluntary Sector

LR2	Agree methodology for survey of lead rakes - using the experience of the PDNPA Lead Rakes Project. (Objective 1)	Spring 2002	PDNPA/WTs (joint leads)/NT/EN
LR3	Compile a register of lead rakes for the ore-field to include level of importance, 'Wildlife Site' status, condition, important species and conservation status. Ensure that the site register and collated information is easily available for use and that it is regularly updated. (Objective 1)	2001 onwards	PDNPA/EN/WTs/NT
	<b>Survey</b>		
LR4	Complete a detailed ecological survey and evaluation of lead rakes in the whole ore-field. (Objective 1)	2001 - 2004	PDNPA/WTs (joint leads)/NT/EN

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## EVALUATING THE IMPORTANCE AND CONDITION OF SITES

### Evaluating Importance and Identifying Key Sites

LR5	Agree methodology for evaluation of lead rakes, to include definition of priorities for conservation action and identification of 'Wildlife Sites'. (Objective 1)	Autumn 2001	PDNPA/GBAPG
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### Defining Favourable Condition

LR6	Agree definitions of favourable condition for the range of lead rakes in the Peak District. (Objectives 1 and 2)	2001	EN/GBAPG
LR7	Agree guidelines for the conservation and restoration of lead rakes to include the range of management needed to achieve favourable condition and guidance on techniques for restoration and targeting of sites (e.g. degraded sites) which link other important lead rakes. (Objectives 1 and 2)	2001	EN/WTs/PDNPA/NT
LR8	Agree appropriate techniques for the re-creation of vegetation on mineral restoration sites, to include surface preparation, suitable seed mixes etc. (Objective 3)	2001	PDNPA/EN/WTs/NT

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## RESOURCES

LR9	Seek resources for a continuation of the Lead Rakes Project and expansion to outside of the National Park. (Objectives 1 and 2)	2001	PDNPA/WTs
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## RESEARCH

LR10	Encourage research into the techniques for re-creation of lead rake communities and as part of this clarify the relationships between the vegetation and the physical and chemical characteristic of lead rakes. (Objectives 1, 2 and 3)	2001 onwards	EN/GBAPG
LR11	Ensure that the results of any research are widely available. (Objectives 1 and 2)	2001 onwards	PDNPA/EN/WTs/NT MAFF

LR12	Ensure that the results of research into the effects of Ivermectin on invertebrate communities associated with animal dung are implemented at a local level. (Objectives 1 and 2)	2001 onwards	WEG
<b>MONITORING</b>			
LR13	Agree methodology for and implement effective monitoring of lead rakes. Ensure that the results of the process are collated and used to update the register. (Objectives 1 and 2)	2001 onwards	PDNPA/MAFF/EN WTs/NT
<b>AWARENESS RAISING</b>			
LR14	Develop an awareness raising strategy to include the identification of key messages and methods for promoting the importance of lead rakes. This may include leaflets, posters, publications, on-site interpretation, local events and walks, web-site information and media publicity. (Objectives 1 and 2)	2001 - 2002	PDNPA/NT/WTs/EN NFU/CLA
LR15	Encourage increased awareness and sharing of best management practice amongst key conservation organisation staff, particularly regarding the holistic value of lead rakes and their management. (Objectives 1 and 2)	2001 - 2002	PDNPA/NT/EN/MAFF WTs/FWAG
LR16	Make guidance available for the restoration of lead rake communities to landowners/managers and conservation organisation staff. (Objective 2)	2001 onwards	PDNPA/NT/EN/MAFF WTs/FWAG
LR17	Share information on the wildlife importance and management needs of key conservation and restoration sites with the landowners/managers, including feedback from surveys. (Objectives 1 and 2)	2001 onwards	PDNPA/NT/EN/WTs MAFF/FWAG/LAs

## CONSERVATION ACTION AND INCENTIVES

### Designations

LR18	Implement obligations under European (Natura 2000) legislation with respect to review of the Peak District Dales cSAC. (Objective 1)	2003 - 2005	EN
LR19	Review coverage of lead rake SSSIs and notify further sites as appropriate. (Objective 1)	2003 - 2005	EN
LR20	Review desirability and opportunities for establishment of key sites as National Nature Reserves and Local Nature Reserves and establish if appropriate. (Objectives 1 and 2)	2005	EN/LAs (joint leads) WTs/NT/PDNPA

### Grant Schemes

LR21	Consider recommending a review of all agri-environment and conservation schemes to ensure that:		
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	*Targeting at a national, regional and local level gives adequate priority to lead rakes		
	*Management prescriptions are reviewed to include flexible site-specific measures		
	*Payments for lead rakes are increased to at least the level of profits foregone and consideration is given to the idea of small area payment (Objectives 1 and 2)	2001 onwards	MAFF/EN/PDNPA WEG/GBAPG
	<b>Negotiation and Review of Agreements</b>		
LR22	Review management of all sites within SSSIs. Where necessary agree revised management regimes with owners/managers, through appropriate mechanisms such as WES, to ensure maintenance or restoration of favourable condition. (Objectives 1 and 2)	2001 - 2005	EN
LR23	Negotiate appropriate agreements with landowners and managers of all important lead rakes for conservation or restoration, outside of existing agreements or SSSIs, in order to achieve maintenance or restoration of favourable condition. (Objectives 1 and 2)	2001 -2005 (conservation) 2003 – 2005 (restoration)	PDNPA/MAFF FWAG/WTs/NT
LR24	Review management of lead rakes in existing agreements, outside of SSSIs. Where necessary agree revised management regimes with owners/managers to ensure that favourable condition is being maintained or enhanced. (Objectives 1 and 2)	2002 - 2005	PDNPA/MAFF/FWAG WTs/NT
LR25	Review whole holding agreements which include unprotected lead rakes. Consider the opportunities for amending the agreement to incorporate their safeguard and enhancement. (Objective 1 and 2)	2002 - 2010	MAFF/NT/WTs PDNPA/FWAG
	<b>Alternative Incomes</b>		
LR26	Review available economic incentives for retention of lead rakes and explore options for additional incomes. (Objectives 1 and 2)	2002	PDNPA/EN/WTs/NT
	<b>Land Acquisition</b>		
LR27	Consider negotiating purchase/lease of priority lead rakes where this would be the most effective way of achieving conservation objectives and where a negotiated conservation solution has not succeeded. (Objectives 1 and 2)	2001 onwards	PDNPA/EN/WTs RSPB/NT
	<b>Direct Action</b>		
LR28	On land owned by public or conservation bodies, ensure that: *Management maintains and where possible enhances the value of lead rakes *Options for restoration of lead rakes are considered *Opportunities for involvement of local communities in site management are taken where possible (All Objectives)	2001 onwards	PDNPA/EN/LAs/NT WTs

LR29	Agree a strategy for safeguarding sites of particular wildlife importance where this cannot be achieved through the normal channels of negotiation, in liaison with land-owning, farming, and other land management interests. (Objective 1)	2001	WEG/NFU/CLA/RLMEG
LR30	Investigate option for collecting building spoil and other inert waste from farms and disposing of at suitable sites. (Objective 1)	2001	PDNPA/MAFF/NFU FWAG

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## REGULATION

### Planning

LR31	Ensure all planning applications and General Development Orders are adequately assessed in relation to their impact on lead rakes; that loss or damage is avoided; and that opportunities are taken for enhancement. (Objectives 1 and 2)	2001 onwards	PDNPA/EN/LAs/WTs
LR32	Consider the opportunities for the creation of new areas of lead rake communities in relevant planning decisions, particularly in restoration schemes for mineral workings. (Objective 3)	2001 onwards	PDNPA/EN/LAs/WTs
LR33	Encourage a review by DETR of GDO regulations which currently permit in-filling and levelling of lead rakes within a farm holding, and hillock removal, without the need for full planning permission. (Objective 1)	2001 - 2002	PDNPA/LAs/EN
LR34	Encourage a review of PDR that currently allow potentially damaging recreational activities for 14 days per year – such as 4 wheel drive trials. (Objectives 1 and 2)	2001 onwards	PDNPA/LAs/EN
LR35	Ensure that the impact of disposal of waste from new buildings is addressed in the planning process. (Objectives 1 and 2)	2001 onwards	PDNPA/LAs/EN

### Pollution Control and Waste Management

LR36	Review procedures and consultation processes in relation to the spreading of paper pulp. (Objectives 1 and 2)	2001	EA/LAs/PDNPA/EN WTs
LR37	Ensure good practice is followed in disposing of sheep-dip, avoiding lead rakes. Implement by continuing with an awareness raising strategy amongst land managers; continuing the programme of licensing; extending consultation procedures for disposal applications to the whole of the Peak District and, where necessary, by enforcement action. (Objectives 1 and 2)	2001 onwards	EA/LAs/PDNPA
LR38	Ensure that all woodland planting proposals consider the adverse effects of planting on lead rakes. (Objectives 1 and 2)	2001 onwards	FC/LAs/PDNPA/EN

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## RESOURCES

It is envisaged that the majority of the actions proposed will be carried out by the relevant organisations using current resources. These include:

- continuing investment by landowners and managers managing their land sympathetically for wildlife;
- EN's programme of reviewing SSSI management and designation and its grant and management agreement schemes;
- MAFF's Countryside Stewardship Scheme;
- processing of planning applications and GDOs by Minerals Planning Authorities;
- continuing management of lead rakes owned by conservation organisations and public bodies (EN, NT, WTs, LAs, PDNPA);
- the PDNPA's advisory and grants service for landowners/managers and its rolling programme of special conservation projects;
- FWAG and the WTs' advisory services.

**Additional resources are likely to be required:**

- for survey of lead rakes (2001 - 2002) and negotiation of agreements (2001 - 2005), particularly outside the National Park;
- to provide adequate financial incentives for the conservation and restoration management of lead rakes (2001 onwards);
- to aid in the production of the proposed registers (2001 onwards);
- to implement effective monitoring (2001 onwards).