

6 HEATHLAND AND ACID GRASSLAND

6.1 HEATHLAND HABITATS

6.1.1 Summary

Heathlands and acid grasslands and their associated habitats contain a specialised group of plants and animals, often found in no other habitats. These species include heathers, gorses, sedges and bog mosses, and most of the British reptile and amphibian species. Where heathlands occur they are very popular, as demonstrated in the recent (Jan 1996) English Nature report "Attitude survey of the value of heathlands". They are much valued as beautiful "wild" places full of wildlife and as attractive landscapes, particularly in the autumn when the heather is in flower. Heathlands, as remnant common land and often in the ownership of public authorities or conservation organisations are also greatly valued as accessible open spaces, where informal recreational activities such as walking may be carried out in peace and tranquillity.

This action plan considers heathlands and acidic grasslands together, as they invariably occur on the same soils and often as intimate mixtures on the same site. In Hertfordshire, acidic grassland is generally more significant.

6.1.2 Lowland Heathland and Acid Grassland Ecology

Lowland heathlands and acid grasslands are largely semi-natural habitats produced as a result of centuries of human influence. Most of the areas where lowland heathland has developed were covered by the wildwood 6000 years ago. The early clearances by Neolithic farmers were largely concentrated on drier soils. However, in many places, particularly where the underlying deposits were sands and gravels, these clearances resulted in the leaching of nutrients and acidification of the former forest soils. Under these conditions, heath and acid grassland communities could develop. Subsequent use of these areas for rough grazing by both domesticated and semi-wild stock would then maintain the new open habitats indefinitely. However, cessation of grazing or cutting results in the eventual succession of heathland to woodland.

Lowland heathland generally consists of an intimate patchwork of different vegetation communities, including dry heath, wet heath, acid grassland, bracken and scrub communities. Other important associated habitats are oligotrophic (nutrient poor) ponds and boggy pools and bare sandy ground. The precise location and mix of habitats develops in response to underlying geology and soils, topography and management influences, but the greater the variety of habitats the more species-rich the heathland is likely to be. In Hertfordshire, acidic grasslands are the dominant habitat type.

The heath vegetation is generally species-poor and dominated by combinations of dwarf shrubs such as Heather or Ling *Calluna vulgaris*, Bell Heather *Erica cinerea*, Cross-leaved Heath *Erica tetralix*, Common and Dwarf Gorse *Ulex europaeus* and *U. minor* and Petty Whin *Genista anglica*.

Acid grassland generally consists of a mixture of fine grasses such as Sheep's and Fine-leaved Sheep's Fescue *Festuca ovina* and *F. tenuifolia*, Common and Brown Bent *Agrostis capillaris* and *A. vinealis*, Early Hair-grass *Aira praecox* and Wavy Hair-grass *Deschampsia flexuosa*. This habitat is generally not rich in herbs, but typically includes Sheep's Sorrel *Rumex acetosella*, Tormentil *Potentilla erecta*, Heath Bedstraw *Galium saxatile* and Harebell *Campanula rotundifolia*.

Boggy pools and ponds will contain species adapted to the demanding conditions. These may contain various species of bog-moss *Sphagnum spp.* along with species such as Common Cottongrass *Eriophorum angustifolium* and the insectivorous Sundew *Drosera rotundifolia*.

A specialised fauna is also associated with heathlands and heath / grass mosaics. Dartford Warblers breed in dense gorse scrub, while Nightjars nest in open heathy areas, often close to woodland. A majority of the British reptile and amphibian species can be found on heathlands. Of the rarer species, Sand Lizard and Smooth Snake are almost exclusively associated with this habitat in Britain, though neither of these has ever been recorded in Hertfordshire. Natterjack Toads are also found on heathland habitats and possibly occurred on Northaw Common, though there is no data to confirm this. Dwarf shrub species support a specialised range of invertebrates, including moths, beetles, spiders, bees and wasps. Black Darter dragonfly or Silver-studded Blue are also confined to or usually associated with heathlands. Bare sandy ground is particularly important for many solitary bees and wasps.

The precise vegetation components of lowland heathland are described more precisely in the various volumes of "The National Vegetation Classification" (NVC) edited by J.S. Rodwell. In Hertfordshire, no survey has been undertaken of the heathland communities present, however, the communities likely to have been present at some time are listed in Appendix 3.

6.2 HISTORY OF HEATH AND ACID GRASSLAND IN HERTFORDSHIRE

Over many parts of southern and central Hertfordshire the underlying geology and soils would have permitted the establishment of acidic grassland and in localised areas heathland given suitable management practices. Therefore in pre-enclosure Hertfordshire there was potentially up to 10000 ha, perhaps more, of these habitats in the county. This would have included very large areas around Colney Heath and Tyttenhanger, North Mymms - Northaw - Little Berkhamsted, and in the west, above Berkhamsted.

Even by the early nineteenth century, it is estimated that approximately 5000 ha of heathland and acid grassland remained unenclosed (Sawford 1990). **However, enclosure and agricultural improvement (ploughing, reseeding and / or fertilising) continued to destroy heathland and acid grasslands through the century and into the current century.**

By 1940, in addition to agricultural improvement, other developments for leisure facilities such as golf courses, urban expansion and mineral extraction had also taken their toll, resulting in a huge decline in the area of heathland and acid grassland. However, in spite of this it is estimated that 80% of Hertfordshire's remaining commons still contained good heathland habitats, and perhaps as much as 750 ha of heathland and at least this area of acid grassland survived in the county.

Unfortunately, the loss of heathland in Hertfordshire has been even more dramatic since 1940, with an estimated 97% loss in area, so that today no more than about 20 ha of open dry and wet heath survives (Herts Habitat Survey). **The major cause of this decline was almost complete cessation of traditional management practices on common land, with the resultant scrub and bracken growth smothering the remaining open heathy habitats.**

Today, the remaining heathland in Hertfordshire is present as scattered fragments amongst scrub, bracken and secondary woodland habitats, on about 15 sites, most of which are commons in public ownership.

The area of acid grassland has survived to a greater extent, with as much as 145 ha surviving on about 30 sites, most of which are privately owned and still farmed. However, the majority of this area is concentrated on a few sites, with only 5 being greater than 10 ha in size.

This decline in the area of habitat has resulted in the extinction from the county of several typical species, including Cross-leaved Heath *Erica tetralix*, Dartford Warbler and Black Darter dragonfly, as well as the marked decline in others such as Bell Heather, Petty Whin and Nightjar.

6.3 **HEATHLAND AND ACID GRASSLAND - CURRENT STATUS, TRENDS AND THREATS**

6.3.1 **Status**

The UK currently has approximately 57000 hectares (ha) of lowland heathland, which represents 20% of the European resource (Biodiversity Challenge, 2nd edition, 1995). Nationally, we therefore have an international responsibility for the conservation of this resource. In addition it is estimated that there are 30000 ha of lowland acidic grassland.

Lowland dry and wet heath communities are listed on Annex 1 of the EC Habitats Directive, which requires member states to restore and maintain these habitats at a favourable conservation status.

The total heathland resource for Hertfordshire is estimated to be about 20 ha of dry and wet heath communities. This figure rises to about 100 ha if areas of degraded open heathland, comprising associated acid grassland, bracken and scattered scrub communities, found on the remaining heathland sites are also included. The remaining heathland is scattered over about a dozen sites which are listed in Appendix 1, with heathy remnants on about another 2 dozen sites.

The total acid grassland resource for the county is estimated to be about 145 ha. This occurs on about 30 major sites, which are listed in Appendix 1.

The heathland zones in the county correspond to the "Natural Areas" of the Countryside Commission and English Nature Joint Character Map. Remaining heathland sites are found in three of the "Natural Areas" covering Hertfordshire, though are mainly located in the London Basin and Chilterns. Likewise, the remaining heathland sites are found in four of the County Council "Landscape Regions", though mostly in two of these; the Chilterns and the Central River Valleys.

Lowland heath and acid grassland is recognised as an important component of the London Basin natural area, with the stated objective of increasing the area of properly managed heathland, through maintaining and enhancing existing heathland sites and restoration of degraded land. It is also recognised as a component of the Chilterns natural area.

The Natural Areas where heathland and acid grassland is found in the county are listed below with their geological deposits and the current major heathland and acid grassland sites (see also map 6.1).

Chilterns - Geology: Clay-with-Flints and/or Pebbly Clay and Sand

Key heathland sites: Berkhamsted and Northchurch Commons; Gustardwood Common.

Key acid grassland sites: Harpenden Common; Marshalls Heath and Kinsbourne Green, Harpenden.

MAP 6.1 - EXISTING HEATHLAND SITES IN HERTFORDSHIRE

London Basin - **Geology: Pebble Gravels, Reading Beds, London Clay**

Key heathland sites: Hertford Heath SSSI; Bricket Wood Common SSSI; Nomansland Common; Colney Heath; Chorleywood Common; Croxley Common Moor SSSI and (formerly North Mymms-Northaw-Little Berkhamsted triangle).

Key acid grassland sites: Knebworth Park; Meadow by Norton Green, Knebworth; Crouch Green, Knebworth; Burleigh Meadow, Knebworth (SSSI); Jacotts Hill Golf Course, Watford; Radlett Golf Course; Batchworth Heath; Codicote Heath and adjoining Pasture; Peplins Wood Meadow, North Mymms; Ponsfall Farm Pastures, Newgate Street; Brickendon Green; Claypits Meadow, Bayford and Wormley West End Meadows (part SSSI).

Other potential heathy sites: Symondshyde Great Wood; Panshanger Park; Mardley Heath; Hatfield and Millwards Park; Northaw Great Wood SSSI; Broad Riding Wood; Cowheath Wood; Broxbourne Wood and Moor Park.

East Anglian Plain - **Geology: Reading Beds outlier**

Key heathland and acid grassland sites: Patmore Heath SSSI.

Little work has been done on the status or extent of decline of species associated with heathland and acid grassland habitats. The production of the Hertfordshire Red Data Book by the Herts Natural History Society (HNHS) will help provide this information. This will include species still found in the county, but could also include species known to have become extinct locally.

Examples of species associated with this habitat which are locally of conservation concern include:

Flora:

- | | |
|--|---|
| - Heather / Ling <i>Calluna vulgaris</i> | - Bell Heather <i>Erica cinerea</i> |
| - Petty Whin <i>Genista anglica</i> | - Dyers Greenweed <i>Genista tinctoria</i> |
| - Dwarf Gorse <i>Ulex minor</i> | - Creeping Willow <i>Salix repens</i> |
| - Heath Milkwort <i>Polygala serpyllifolia</i> | - Heath Grass <i>Danthonia decumbens</i> |
| - Heath Spotted Orchid <i>Dactylorhiza maculata caerulea</i> | - Purple Moor Grass <i>Molinia</i> |
| - Mat-grass <i>Nardus stricta</i> | - Green-ribbed Sedge <i>Carex binervis</i> |
| - Star Sedge <i>Carex echinata</i> | - Common Yellow Sedge <i>Carex demissa</i> |
| - Fine-leaved Sheep's Fescue <i>Festuca filiformis</i> | - Creeping Tormentil <i>Potentilla</i> |
| <i>anglica</i> | |
| - Upright Tormentil <i>Potentilla erecta</i> | - Silvery Hair-grass <i>Aira caryophyllea</i> |
| - Early Hair-grass <i>Aira praecox</i> | - Heath Rush <i>Juncus squarrosus</i> |
| - Birdsfoot <i>Ornithopus perpusillus</i> | - Heath Dog Violet <i>Viola canina</i> |
| - Lousewort <i>Pedicularis sylvatica</i> | - Brown Bent <i>Agrostis vinealis</i> |

Lower Plants:

- Bog mosses *Sphagnum spp*

Birds:

- Nightjar
- Woodlark

Invertebrates:

Lepidoptera

- Neglected Rustic Moth *Xestia castanea*
- *Aristotalia ericinela*
- *Coleophora juncicolella*
- *Sophronia semicostella*
- Narrow Winged Pug *Eupithecia nanata angusta*

Coleoptera

- Green Tiger Beetle
- Heather Beetle

Hymenoptera

- *Andrena fuscipes*
- *Nomada ruficornis*
- *Priocnemis fennica*

Orthoptera

- Mottled Grasshopper *Myrmeleo tettix maculata*

6.3.2 Trends

Loss of heathland and acid grassland sites to other land uses or agricultural improvement is now largely a thing of the past. The remaining dry and wet heath sites are now mostly being managed with conservation in mind, though much of the work is being undertaken in an unco-ordinated fashion. Continued scrub encroachment is still a problem on some sites. At present, heathlands are also inherently unproductive in economic terms, hence the scale of conversion to other land uses and neglect. This low value threatens their future existence, with the increased use for more formal sports activities, such as golf, an example of this. However, they are often valued as open space for recreational activities.

The effects of acid deposition, resulting in species impoverishment is an undesirable trend for both heathland and acidic grassland. Neglect or conversion to more “productive” grassland is a continuing trend for acid grasslands, as is the increase in horse grazing.

6.3.3 Threats

The major threats facing the remaining heathlands and acidic grasslands in Hertfordshire are continued scrub encroachment, management practices, the small size of many of the remaining heathland patches, recreational pressures and nutrient enrichment.

The major threat facing many heathland and acid grassland sites on common land continues to be scrub encroachment. In the absence of grazing or cutting management, the growth of scrub overshadows the typical plants, eventually leading to their loss from a site. On other sites Bracken rather than scrub may overshadow the vegetation. On many of the most valuable sites scrub is now being controlled, though in the absence of long-term management, the threat will remain.

The second threat is from the management practices adopted on heaths and acidic grasslands. Grazing is the ideal management for these habitats, but few sites are actively grazed. Many sites are cut, particularly where they include golf courses or are

part of publicly managed open spaces. On these sites the mowing regimes are often too frequent, inhibiting flowering of the typical species and not allowing the development of the varied sward structure required by many invertebrates.

The third major threat, which applies particularly to acid grasslands is inappropriate grazing, usually by horses. Well managed horse grazing is often a good way to manage many sites and better than mowing or neglect. However, too often overgrazing occurs resulting in species impoverishment.

The fourth threat identified is the small size and isolation of most of the remaining sites. This makes them unsuitable for many dependent plants and animals because there is insufficient suitable habitat. In addition, there is an increased risk of small populations becoming extinct from a site due to chance factors such as fires. The isolation of sites also precludes the likelihood of a species recolonising a site once lost.

The fifth major threat which applies to many common land sites is from recreational pressures. Trampling in particular can inhibit the growth of scarce plants, while other associated risks include accidental fires. A largely urban population often resists attempts to positively manage or restore heath and acidic grassland habitats, by scrub and tree removal or enclosure (even temporary) for grazing.

The final major threat is from the effects of nutrient enrichment. This occurs as a result of pollution, from for example road traffic, and run off or spray drift from agricultural chemicals. Heathlands and acid grasslands depend on low soil nutrient levels and low soil pH. Pollution alters these and results in a change in vegetation with fast growing species out-competing the typical heath and acid grassland flora.

6.4 THE FUTURE FOR HEATHLAND AND ACID GRASSLAND IN HERTFORDSHIRE

6.4.1 Is Heath / Acid Grassland Restoration Worthwhile in Hertfordshire ?

This question must be answered by looking at both national and local priorities for conservation action and the feasibility of restoration from such a small resource, in the case of heath communities.

Heathland

The argument against restoring heathland can be summarised as follows. Within the national heathland habitat action plan, Hertfordshire is not one of the priority counties for the management and restoration of lowland heathlands. Restoration of true heathland depends on the formation of podzolised soils, which only develop under demanding conditions over a long period. We may already have lost too much heathland and therefore restoration may be difficult and costly. Restoration could also potentially result in damage to valuable habitats which have superseded the original heathland.

It could therefore be argued that, conservation effort in the county should be targeted to other more extensive and easily managed habitats typical of the county. Under this option it would still be desirable to manage the existing open heathland areas, but not aim to extend these areas to any significant degree.

However, the case for restoring heathlands in the county is strong. The aim of the national biodiversity action plan is **to maintain and increase the extent and range of all the habitats found within the UK**. Though heathlands in Hertfordshire are not a national priority for action, being located away from the core areas, conservation and restoration of the county's heathlands would contribute to **maintaining the range of the habitat**, which is a vital component of biodiversity protection. Hertfordshire's heaths and acid grasslands could form a strategic link between those of central southern England and East Anglia.

Secondly, within Hertfordshire there are only a few habitats, which can be considered a national priority for action. Therefore, we should also concentrate on those locally important habitats which make a significant contribution to our county's biodiversity resource. Heathlands were once a major feature of the landscape and ecology of the county and they have suffered a huge decline over the past 200 years. The remaining heathlands in the county are likely to support many species which depend on the heathland habitats for their continued local survival. However, the small size of many of the remaining heathland patches also increases the risks of local extinctions of heathland species. Loss of heathland and associated species would result in a significant decline in our local biodiversity resource. Finally, there is the aesthetic value of heathland, which involves the open space character of the habitat and the attractiveness of some of the species such as heather.

Acid Grassland

Acidic grasslands are not a national priority for action, but like heathlands are an important part of the local ecological resource. They also have the potential to form a strategic link for this habitat between central southern England and East Anglia and are therefore important in maintaining the range of the habitat. Acidic grasslands are also more extensive than heathlands in Hertfordshire and can occur on a wider variety of soils. Restoration is therefore less problematic than for true heath.

We therefore strongly believe that management and restoration of heathlands and acid grasslands should be seen as a local priority for conservation action.

6.4.2 How Much Heathland and Acid Grassland Should Be Restored ?

Precise figures for the extent of heathland and acid grassland in the county at various times in the past are not available. However, there are the estimates given earlier in this document for about 5000 ha in the early 1800s, approximately 750 ha in 1940, and about 20 ha of true dry or wet heath and 145 ha of acid grassland today.

The targets established must reflect the following nationally accepted sequence:

- (1) Manage existing heath and acid grassland
- (2) Restore heath and acid grassland on existing sites
- (3) Create new "heath" and grasslands to enlarge, buffer and link existing sites.

The figures presented later in this plan have been carefully considered. Ideally they would have been based on scientific data for the minimum areas required to maintain viable, self-sustaining populations of species typical of Hertfordshire's heathlands. Unfortunately such information is not available. The figures are therefore based on a knowledge of the ecology and history of heaths and acid grasslands in the county. They comprise existing areas of heath and acid grassland, areas of degraded habitat that will realistically revert to heath and acid grassland, as well as additional areas of land where it may prove feasible and be beneficial to create new "heath" and acid grassland habitats.

6.4.3 Management of Existing Sites

Heathland

Initial efforts must be aimed at ensuring that all remaining sites have ecologically sympathetic management regimes established within ten years. **It will be essential to write / review management plans for all sites to reflect the priorities and targets established in this action plan.**

Grazing has always played a fundamental role in the development and maintenance of heathlands. It is the traditional form of management for the habitat and can provide the means to create and maintain a wide variety of heathland communities. It is therefore vital to successful management. **In the longer term, low intensity grazing management must be re-introduced to all the major heathland sites, in order to enhance and thereafter maintain the open areas and prevent scrub encroachment.**

Re-introducing grazing to many sites is problematical, in that they are often registered common land. Grazing will not usually occur without fencing, but fencing common

land, even if temporary, requires approval from the Department of the Environment. There is a lengthy legal and consultation process to go through, involving local commoners in particular, the Open Spaces Society and local people. Very often, temporary fencing is the only acceptable solution, but even this is often opposed. Greater recognition of the essential role of grazing in management is required if heathy common land is to survive as open space in the future.

While grazing is feasible on many sites, it will take time to re-introduce. In the meantime cutting will be required to prevent scrub encroachment and domination by more competitive species. However, on some sites, particularly the heath and acid grassland golf courses, grazing is unlikely to be a realistic option. The heath and acid grassland vegetation on the roughs and out of play areas of golf courses require **a suitable cutting regime to be introduced to maintain the diversity of habitats and associated wildlife.**

CASE STUDY - MID-HERTS GOLF CLUB, GUSTARDWOOD COMMON

Mid-Herts Golf Club have recently changed their mowing regimes for roughs and out of play areas, under advice from the Herts & Middlesex Wildlife Trust. Previously, roughs and out of play areas had been mown at a low height several times each summer and there were no areas of semi-rough. This management had greatly suppressed the heathy and acid grassland flora, with a noticeable decline in heather, a typical and much loved feature of the course.

The new mowing regime involves cutting the roughs and out of play areas only once a year back to a height of 10cm. Selected patches of heather in out of play areas are being left unmown. In addition, fairways have been narrowed by the creation of areas of semi-rough, improving the golfing environment.

The benefits have been seen after only one year, with improved flowering of heather and other typical heathy species and the development of a more varied grassland habitat.

Acid Grassland

As for heathland, the most appropriate form of management is grazing. With many sites being in private ownership and still farmed, grazing is more possible than for heathland sites on common land. However, it is important to ensure that owners recognise the value of these sites and that grazing is carried out sensitively. The “old meadows and pastures” option of Countryside Stewardship now covers these sites and can therefore be used to ensure owners receive advice and grant aid to help achieve sympathetic management.

The acid grassland sites which are also common land suffer from the same constraints described above for heathland. Likewise acid grassland out of play areas and roughs on golf courses require sympathetic mowing regimes to maintain their ecological interest.

6.4.4 Restoration on Existing Sites

The second stage is to look at the possibilities for restoring heathland and acidic grasslands on existing sites and sites which had these habitats until relatively recently.

Heathland

A vast majority of the heathland present in 1940 was on unenclosed common land. Much of this common land still survives today, although the open habitats have largely been replaced by scrub and secondary woodland. It is possible that a heathland and acid grassland seedbank still survives on many of these commons and with the appropriate restoration management it would be possible to re-establish these habitats over large areas. Likewise areas of heathland recently planted with conifers also have potential for restoration, particularly where a remnant heathy habitat remains along rides and in glades. However, to take advantage of this, **it is essential that the restoration work is undertaken in the next 10 years, before the seed bank is completely lost and soil profiles changed too much.**

When undertaking restoration management, not all species formerly present will return, but heath and acid grassland vegetation can be restored with only a moderate decline in the original species complement.

CASE STUDY - BERKHAMSTED COMMON AND GOLF CLUB

Berkhamsted golf club own part of Berkhamsted Common. They have recently drawn up a plan for heathland restoration in conjunction with the Countryside Management Service. This covers both the roughs and out of play areas of the golf course as well as other parts of the common in their ownership.

The club has entered into a Woodland Grant Scheme, to manage areas of woodland in their ownership. The 20% open space allowed in woodlands entered into this scheme has been targeted to woodland edges along the roughs and adjacent to other heathland and acid grassland areas. Encroaching scrub and trees are being cleared, preventing overshadowing of the remnant heath and acid grassland areas.

The club have also entered the larger areas in their ownership, away from the golf course, into Countryside Stewardship. Through this, an area dominated by bracken and scrub has been targeted for restoration to the former heath and acid grassland vegetation. The scrub and trees were initially cut and removed. The bracken has since been cut once or twice a year depending on growth rates. The area was also rotovated once, to expose the rhizomes to frost action and turn the accumulated litter into the soil. After 2 years, the bracken has decreased dramatically and a heathy / grassy vegetation is beginning to return. The cut bracken is being composted in a trial scheme, which if successful will provide an incentive to restore larger areas of both Berkhamsted and Northchurch Commons.

Relic dry heath and acid grassland, in particular, responds very well to appropriate restoration management. This ideally involves clearance of scrub and secondary woodland followed by heavy disturbance and removal of accumulated organic layers.

This encourages the remnant heath and grassland seed bank to germinate and natural colonisation of species from neighbouring areas. Where bracken has encroached onto heath and acid grassland, restoration of the original heathy communities can also be achieved by cutting and removing accumulated bracken litter. However, wet heath is more difficult to restore, though may also respond well in areas immediately adjacent to existing heathland. It is therefore essential to retain and manage the remaining wet heath sites.

However, care must be taken when carrying out such restoration management, to ensure that an existing habitat of value is not destroyed. For example, simply converting a valuable acid grassland habitat to a heather stand can not be justified ecologically. Likewise, areas that have been secondary woodland for a prolonged period and are considered unlikely to revert to heathland, or have gained their own significant wildlife value should be excluded.

Acid Grassland

The restoration work on commons described above, will also benefit acid grassland habitats as well as heathland. In addition, acid grasslands which have been semi-improved and are still in agricultural production could be restored to a more ecologically valuable condition through appropriate management. Introduction of more sensitive and less intensive grazing regimes may enable an increase in species richness and the development of a more varied structure to the benefit of a wide variety of wildlife.

Again in the longer term, once heath and acid grassland vegetation has been restored, **it will be essential to implement low intensity grazing management**, in order to enhance and maintain the restored habitats.

The Wildlife Trust estimates that it would be possible to restore 150 ha of heath and acid grassland vegetation on the remaining commons and unimproved and semi-improved acid grassland sites. This would be achieved by a planned programme of heath and acid grassland restoration work and the re-introduction of grazing, or suitable cutting regimes.

6.4.5 Creation of New Heath / Acid Grassland Habitats

As well as management and restoration on existing sites, this action plan looks to create *heathland-type* communities on new sites with suitable geology and soil conditions. Heath and acid grassland sites which were enclosed during the last century and first part of this century, and have been in agricultural production since, are unlikely to retain any semblance of a heathy flora or seed bank. While the underlying geology means it would in theory be possible to re-create these habitats in many areas of southern and central Herts (see map 6.2), **the gross changes in soil profiles and chemistry due to modern agriculture means that in practice re-establishment of true heathland is unlikely.**

We should, however, aim to create extensively managed "natural" grasslands with no predetermined view as to the composition of the vegetation communities which develop. These new *heathland-type* habitats will form valuable habitat types in their own right, particularly if managed to create a varied habitat structure.

**MAP 6.2 - CORE AREAS FOR HEATH AND ACID GRASSLAND RESTORATION
AND RE-CREATION IN HERFORDSHIRE**

The existing heath and acid grassland sites are marked on Map 6.1. Map 6.2 relates these sites to the underlying geology and from this identifies four core areas where there are concentrations of sites. Core areas have been identified for targeting work on heaths and acid grasslands, which is necessary due to the extreme fragmentation and isolation of the remaining sites. In order to conserve the county's heath and acid grassland biodiversity it will be essential to increase the area of habitat blocks. Therefore concentrating effort on fewer larger sites will be more valuable than undertaking action on many small sites. The core areas have also been chosen with the aim of maintaining the ecological variation found in Hertfordshire's heaths and acid grasslands, by maintaining the traditional geographical spread in the county. **Opportunities for the creation of these new *heathland-type* habitats should be targeted to these core areas and be aimed at enlarging, buffering and linking existing heath and acid grassland sites.**

CASE STUDY - COX'S FIELD, BERKHAMSTED COMMON

This isolated field on Berkhamsted Common, was until recently in arable production, though had formerly been part of the extensive heathland habitats of the common. The tenant farmer and Countryside Management Service have worked together to enter this field into the Countryside Stewardship scheme, under a habitat creation option.

With advice from the Herts Environmental Records Centre, the field has been sown with a fine-leaved grass mix, consisting of locally appropriate species. The area is not at present grazed, but is mown annually. In order to diversify the habitat, it was decided to attempt to re-introduce heather to trial plots. In January 1996, the trial heather re-introduction plots were established. The grassland vegetation was sprayed and heather seed put down. There was not enough local seed available at the time of the trial, so seed was brought in from Surrey. Unfortunately, this has not taken due to the summer drought conditions of the last two years. However, another attempt will be made, using local seed.

Where the creation of new *heathland type* habitats is undertaken, it is essential that natural processes are encouraged. Heath and acid grassland is a complex habitat with a mixture of vegetation communities often found in an intimate patchwork. Such a habitat can not be artificially created by man. Management must therefore be aimed at promoting natural colonisation processes and the establishment of extensive management practices such as grazing. It should not be aimed at establishing pre-determined vegetation communities such as heather stands, since in time, the heath and grassland habitats which develop more naturally will be of greater value to wildlife. It is likely that the new *heathland-type* habitats will appear as grasslands rather than true heathland communities dominated by dwarf shrubs such as heather and gorse.

However, in some situations, particularly where new habitats are being developed on land coming out of agricultural production, sowing of a fine acid grass seed mix consisting of locally appropriate species may be acceptable. In other cases, the carefully considered deliberate re-introduction of key heath and acid grassland species may also be appropriate, for aesthetic reasons or because there is little chance of such species

recolonising naturally. Locally appropriate species, ideally from local seed sources should be used, to maintain any locally distinct genetic variation.

There are several opportunities for creating new *heathland-type* habitats, including through a future more environmentally based agricultural policy, through management of forestry plantations and through restoration of old mineral sites.

Opportunities for creation on farmland may arise out of future agricultural reforms, with a greater emphasis on extensification and non-food related payments to the farming industry, and the likelihood that a significant area of land may become available for non-agricultural related purposes. However, the inherently low productivity of these habitat types means that little or no restoration or creation of these habitat types on farmland will occur without the support of improved countryside and agricultural grant packages. Even with improved packages, the option may not be attractive to landowners and may only occur if public authorities or conservation organisations enter land into such schemes.

A second opportunity is from creating and maintaining open space in forestry plantations on former heathy sites. Within the Broxbourne / Northaw complex, Cowheath Wood and Broad Riding Wood do have the right soils and history and may be suitable if a programme of selective ride widening and glade creation was agreeable to the owners. The provision of a heathy corridor such as this between Hertford Heath and Northaw is a major opportunity. Likewise, such a ride and glade programme at Hatfield Home Park and Millwards Park provides an opportunity, though again is dependent upon the interests of the owners.

The major opportunity for creation will be through the restoration of old mineral workings. Rather than restoring to agricultural land, which is in surplus, more imaginative restoration programmes involving re-creation of habitats, including *heathland-type* habitats must be considered. These could, and should, provide a large contribution to the conservation and enhancement of our local biodiversity.

Minerals companies and the planning authorities responsible for minerals planning, must consider large scale habitat creation, including *heathland-type* habitats, as a priority for restoration schemes. Specific sites in strategic locations should be identified at an early stage with the mineral operators and the minerals planning authority.

Creation of *heathland-type* habitats, would provide real opportunities for increasing the recreational resource for the local population, particularly if associated with initiatives such as Watling Chase Community Forest. Indeed provision of areas of heath and acid grassland as public open space for informal recreation, may provide the best opportunity for promoting restoration and creation, by providing a beneficial land use for these habitats. A recently established example is at Waterford Heath, where a partnership between the owners Redlands, Groundwork Hertfordshire, Herts & Middlesex Wildlife Trust and the local community, is turning a former minerals working into a public open space, based around naturally regenerating grasslands.

While agreement may be reached with minerals operators to restore workings to new *heathland-type* habitats and to dedicate areas as public open space, further expansion from agricultural or forestry uses is only likely if land is purchased by public authorities, conservation organisations or partnerships between these.

The work of the Watling Chase Community Forest can help realise opportunities for creation of *heathland-type* habitats, on both agricultural land and as part of restoring mineral workings, particularly where public access is an option.

The Wildlife Trust believes it would be possible to create at least 250 Ha of new *heathland type* habitats, by targeting agricultural land, restored minerals sites and forestry plantations in the core areas in the county. The aim would be to enlarge, buffer and link existing heath and acid grassland sites, providing opportunities for natural colonisation of plants and animals.

6.4.6 Public Awareness

To achieve the management, restoration and creation objectives outlined above, a programme aimed at raising public awareness of the issues surrounding heaths and acid grasslands is required. The EN "Attitude survey of the value of heathlands", showed that even in major heathland areas such as Surrey and Dorset, while heathlands were much valued, understanding of their management by the general public was poor. People were generally unaware of the long history of heathlands and did not relate management techniques to the changes which have occurred, such as scrub encroachment.

The survey also showed that people would value more information on heathland wildlife, history and management, with media such as maps, path guides, leaflets and interpretative boards favoured. It is therefore vital for all organisations involved in heathland management to involve local people in the work and to provide them with the information they seek.

6.5 A VISION FOR HEATHLAND AND ACID GRASSLAND

We would expect to see a significantly expanded heath and acid grassland habitat in 50 years time, of at least 650 ha. This expansion will be concentrated in four core areas, where there would be at least one larger site and several linked smaller sites.

Populations of all species typical of heath and acid grassland in Hertfordshire and still present in the county will be maintained at, or enhanced to viable self-sustaining levels. In addition, heathland species lost from the county since 1900 will be encouraged back to the county through the creation of suitable habitat conditions. If necessary some species may be re-introduced using accepted scientific criteria and methods.

All heathland and acid grassland sites will be managed in environmentally sensitive ways, based around rough, low intensity grazing, which will maintain the variety of associated habitats.

Where grazing is not possible, for example on golf courses, appropriate cutting regimes will be in place. On golf courses the out of play areas and the areas of rough will be managed for the benefit of the heath and acid grassland communities through appropriate scrub management and mowing regimes.

Restoration and re-creation of these habitats in Hertfordshire will be concentrated in four core areas, based around existing concentrations of sites and underlying geology and geographical position. These core areas would aim to maintain the ecological variation found in Hertfordshire's heathlands. The four core areas would be (1) Berkhamsted and Tring Commons, (2) Harpenden-Wheathampstead complex, (3) Upper Colne Valley, and (4) Broxbourne-Northaw-Hatfield Park complex. Within these core areas there would be at least one larger main site and several smaller heathland sites, linked where possible.

In the Berkhamsted Commons complex, a heath and acid grassland area of about 250 ha will have been established on Berkhamsted / Northchurch Commons, and other smaller sites, through management of existing areas and a programme of heath and acid grassland restoration on these existing sites. In addition, a smaller area may be restored on the former heathy site of Wigginton Common.

In the Harpenden-Wheathampstead complex, the major existing sites at Nomansland Common and Gustardwood Common will have been largely restored and will be managed as open heath and acid grassland. In addition, other acid grassland sites will be managed appropriately making a total area of approximately 30 ha of heath and acid grassland. Opportunities will have been sought for creating new *heathland-type* habitats on at least 10 ha of neighbouring agricultural or forestry land to enlarge and buffer these sites. However, opportunities are likely to be limited, due to the nature of the geology and soils in this area.

In the Upper Colne Valley, open heath and acid grassland will have been restored where possible on all existing sites, which will be managed appropriately. Key sites

include Colney Heath and Bricket Wood Common. This will make an area of approximately 35 ha. In addition, opportunities will have been sought for creating new *heathland-type* habitats on at least 50 ha of neighbouring agricultural or forestry land to enlarge and buffer the sites in this core area. A further opportunity will have been sought for creating at least two new *heathland-type* sites of at least 50 ha, to the south of St Albans, associated with restoration of a completed minerals working.

In the Broxbourne-Northaw-Hatfield Park complex, open heath and acid grassland will have been restored on existing sites, all of which will be managed appropriately, making an area of at least 25 ha. Opportunities will have been sought for creation of new *heathland-type* habitats on a further 100 ha of neighbouring agricultural or forestry land with the aim of enlarging and buffering the remaining heathland areas. Key areas include the old Northaw and Cuffley Commons and a ride / glade network through the Broxbourne Woods area. This, together with the Upper Colne Valley, is likely to be the area with the greatest opportunities for the re-creation of *heathland-type* habitats, because of the large historic heathland commons which were present in the area, the very poor soils and the fact that the area already contains a high concentration of important wildlife sites.

There will be at least a further 25 ha of open heath and acid grassland restored and managed on other isolated heathland sites such as Chorleywood Common, Mardley Heath, Patmore Heath or Panshanger Park.

In total, there will be an area of at least 400 ha of heath and acid grassland on existing sites. In addition, at least 250 ha of *heathland-type* habitats (naturally regenerated grasslands) will have been created on new sites. This will be as a result of conversion of surplus agricultural or forestry land and restoration of minerals sites, including two large new heathland sites of at least 50 ha.

Heaths and acid grasslands will provide a valuable recreational resource for the local population. Sites where heathland restoration and re-creation is possible should be promoted as areas of public open space, to ensure that they acquire a "beneficial" land use, without which there is unlikely to be any incentive to promote heathlands.

6.6 **TEN YEAR TARGETS**

To ensure no further loss of heathland and acid grassland sites to development or other changes.

To have all remaining heaths and acidic grasslands under appropriate management and to have established restoration programmes on degraded sites by 2007.

To have restored 150 ha of heathland-type habitats on existing sites by 2007.

To have begun large-scale creation of at least 100 ha of new heath and acid grassland type habitats.

6.7 **PROPOSED ACTIONS**

6.7.1 **Policy and Legislation**

H1. Relevant local authorities to include heath and acid grassland habitat protection policies at next plan review.

Action: LA's - DBC, SADC, TRDC, WHC, EHDC & NHDC.

6.7.2 **Site Safeguard and Management**

H2. Designate appropriate sites as Local Nature Reserves. The following to be designated by 1999, Colney Heath, Nomansland Common, Bricket Wood Common SSSI, Marshalls Heath, Mardley Heath, Batchworth Heath, Croxley Common Moor SSSI and Chorleywood Common.

Action: LA's - SADC, TRDC, CMS, EN.

H3. Review management on all the major heath and acid grassland sites listed in Appendix 1, by 2000, and all other heath and acid grassland Wildlife Sites by 2002.

Action: HMWT, CMS, EN, LA's, owners.

H4. Seek to establish grazing on all suitable sites by 2007, including Hertford Heath, Nomansland Common, Colney Heath, Bricket Wood Common and Berkhamsted and Northchurch Commons.

Action: HMWT, CMS, NT, SADC.

H5. Ensure all golf clubs whose courses include heath and acid grassland Wildlife Sites are managing their roughs and out of play areas sensitively for the associated wildlife by 2003.

Action: HMWT, CMS, Berkhamsted Golf Club, Mid-Herts Golf Club, Moor Park Golf Club, Sandy Lodge Golf Course, Chorleywood Common Golf Course.

H6. Establish a bracken composting scheme to restore a more varied heathland habitat on Berkhamsted Common, the whole open bracken area to be completed by 2007. Continue mechanical control of bracken on Northchurch Common.

Action: CMS, NT, Berkhamsted Golf Club.

H7. Implement restoration management programmes on all major sites set out in Appendix 2 of this action plan. Prepare timetable to achieve all sites by 2005.

Action: HMWT, CMS, NT, SADC, TRDC, WHC, Mid-Herts Golf Club, Berkhamsted Golf Club, Redland Aggregates.

H8. Identify at least one former minerals site and areas adjacent to existing sites within the Upper Colne Valley, for the creation of new publicly accessible heath and acid grassland habitats. Implement creation projects on suitable sites by 2005.

Action: WCCF, GH, Redland Aggregates, HMWT, CMS, RSPB.

H9. Identify areas of the former Northaw and Cuffley Commons with potential for creation of new heath and acid grassland habitats. Seek opportunities to implement such a project by 2005.

Action: HERC, HMWT, WHC, PCs.

H10. Create a network of heath and acid grassland rides and glades through Broxbourne Wood. Prepare management plan and begin implementation by 2000.

Action: HCC, CMS.

H11. Seek opportunities to create a network of heath and acid grassland rides and glades through appropriate woodlands in the south-east of the county (Broxbourne-Welwyn Hatfield) by 2005.

Action: HMWT, CMS, landowners, HCC.

H12. Establish Hertford Heath as a demonstration site showing appropriate management and restoration of heathland and acid grassland, by 1999.

Action: HMWT.

H13. Establish “Cox’s Field”, Berkhamsted Common as a demonstration site showing heathland habitat creation on former agricultural land by 2001.

Action: CMS.

6.7.3 Species Management and Protection

H14. Assess the need for individual species action plans for threatened heathland species by 2000, including those listed in Section 6.3.1, and if appropriate, prepare action plans by 2005.

Action: HERC, HMWT, HNHS, RSPB, HBC, BTO.

6.7.4 Advisory

H15. Actively target advice and if appropriate Countryside Stewardship or Countryside Heritage Project grants to all heath and acid grassland Wildlife Sites by 2005.

Action: HMWT, CMS, FWAG.

6.7.5 Research and Monitoring

H16. Monitor the management and quality of a sample of key heath and acid grassland sites every 3 years.

Action: HERC, HMWT, EN.

6.7.6 Communication and Publicity

H17. Organise at least 1 community event / demonstration day / guided walk on a key site annually as part of National Heathlands Week. Promote heathlands in relevant publications.

Action: HMWT, CMS, EN, LA's.

H18. Establish a "heathlands forum", linked to the existing HCF/HEF Biodiversity Focus Group, to promote the value of heathlands and to share resources, such as equipment, knowledge and advisory materials, by 1999.

Action: HMWT, CMS, LA's.

