GREENHAM AND CROOKHAM COMMONS RESTORATION PROJECT

MANAGEMENT PLAN

For
Greenham Common Project Officer
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Council Offices
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VISION, SIGNIFICANCE, AIMS AND OBJECTIVES

A. A VISION FOR THE SITE

Greenham and Crookham Commons together comprise a nationally significant site, both for their modern history as a military air base during the 'cold war' and also for their rich and diverse wildlife. Both aspects of the commons will be conserved and interpreted in an exciting and meaningful way for the visitor.

The historic commons will be maintained and managed by the reintroduction of grazing and other traditional methods as an area of working open countryside. This is so as to retain and, where possible, increase the high nature conservation interest of the ancient heathlands, grasslands and woodlands present which are also key habitats in both the Berkshire and UK Biodiversity Action Plans.

Visitors to this impressive site will have free access to quietly enjoy and experience the broad open landscapes and many wildlife habitats and also to appreciate its strong historic and cultural origins and more recent cold war military influence.

Positive links with neighbouring Sites of Special Scientific Interest will be pursued so as to retain and enhance the integrity of the nearby Thatcham Reed Bed, River Kennet, Baynes and Bowdown Woods and Greenham and Crookham Commons area.

B. SIGNIFICANCE FOR NATURE CONSERVATION

Significance

The site has considerable local, regional and national significance for conserving and enhancing biodiversity (nature conservation). This is because of the very large land area available (this plan covers an area of 414ha or 4.14sq.km.) and the wide range of habitats it contains, including the largest area of open heathland and acid grassland in Berkshire.

Areas of different habitats

Open heathland and acid grassland	55ha
Secondary woodland	79ha
Gorse and birch scrub	28ha
Mesotrophic (neutral) grassland	102ha
Ancient coppice woodlands including spring fed alder-lined gullies and oak wood pasture	35ha

In addition to the open heathland and acid grassland habitats, there are also large areas of recent secondary woodland, gorse and other scrub, mesotrophic (neutral) grassland, ancient coppice woodlands including spring fed coppice alder lined gullies and oak wood pasture. These habitats support extensive and nationally important communities of highly specialist native plants and wild creatures.

Potential

Given restoration and good management by grazing, it is considered that the site has potential to become of international ecological importance.

In addition, and because of its public ownership, the site also has considerable opportunities for ecological interpretation and for education in nature conservation and related countryside, archaeological and historical studies.

Importance for Biodiversity

Nationally important habitats

The combination of habitats, together with the range of wild creatures supported, gives the site a special national significance and a large area of mown heathland and acid grassland meets the criteria for designation of Sites of Special Scientific Interest (SSSIs). The prime area of these habitats was duly designated as an SSSI under the Wildlife and Countryside Act in 1985.

An important component of land within the SSSI is the unusual mix of calcicole and calcifuge (lime liking and hating) plant communities resulting from air base development and land use.

Many of the habitats present (especially heathlands, dry acid grasslands and wet woodlands), are key habitats in the UK Biodiversity Action Plan.

Regionally important habitats

The alder gullies and relic heathland communities are of regional significance.

County importance

Acidic wet heathlands/valley mires, partly overgrown or recently cleared.

Local importance

The area of ancient oak pasture woodland and partly coppiced woodland.

Other habitats

Large areas of scrub and secondary woodland have developed over open heathland and acid grassland habitats during the last 30-40 years and provide habitat for large populations of the more common fauna although botanically they are poor. These habitats provide considerable potential to extend the key heathland, grassland and open mire habitats by careful management.

C. SIGNIFICANCE FOR HISTORICAL AND CULTURAL STUDIES

The historic and cultural significance of the site is well explored by Ian Parkin and his associates in a report to Newbury District Council of November 1997. This particularly includes:

☒ the commons and their historical context
☒ military use of the site and
☒ the nuclear phenomenon and peace movement

D. BROAD AIMS FOR THE SITE

Aim 1 To conserve and improve existing areas of conservation interest on the site and to encourage the remainder of the site to develop its full wildlife potential.

Aim 2 To ensure the area remains open countryside to be enjoyed for quiet recreation by the public.

Aim 3 To utilise the site as an innovative and inspirational educational and interpretive resource to explain the ecology, cultural history, geology and modern history of the site.

Aim 4 To engender a sense of ownership and responsibility for the site in the local community by public involvement and local agenda 21.

E. SPECIFIC OBJECTIVES TO BE DEVELOPED

E1 CONSERVATION OBJECTIVES

The following nature conservation objectives provide further detail. The subsequent recreational objectives have to be met without prejudicing these objectives.

Con 1. Conserve and enhance the existing matrix of open heathland and grassland providing a structured vegetation (in particular Biodiversity Action Plan habitats).

Con 2. Conserve and enhance existing associated vertebrates and invertebrates (in particular Biodiversity Action Plan species).

Con 3. Increase the area of open heathland at the expense of bracken and secondary birch woodland.

Con 4. Ensure the establishment of a similar matrix on the exposed gravel areas (previously under concrete) where this is feasible.

Con 5. Encourage other heathland species to use the site (in particular Biodiversity Action Plan species).

Con 6. Conserve and enhance the existing habitat within the alder gullies (in particular the alder, sphagnum and bog areas).

Con 7. Prevent pollution and encroachment on the gullies and restore areas where this has occurred.

Con 8. Ensure the grazing of areas identified as wood pasture.

Con 9. Manage existing woodland in accordance with best practice and encourage neighbouring landowners to do the same.

Con 10. Maintain and manage areas of scrub and ensure a graded woodland edge including scrub habitat

E2 RECREATION OBJECTIVES

Rec 1. To allow public access to the site

Rec 2. To retain the site as an area of open countryside.

Rec 3. To allow quiet recreation which has minimal effect on the wildlife, adjacent residents and the enjoyment of other users.

Rec 4. To manage the recreational pressures which there will be on the site to minimise the effect on wildlife with particular reference to the SSSI.

E3 EDUCATION OBJECTIVES

Ed 1. To promote an understanding of the commons, their history and ecology across all age groups.

Ed 2. To engender a sense of ownership and involve the local community in the management of the commons.

Ed 3. To interpret the history, biodiversity and ecology of the commons to provide an enhanced/enriched experience for the visitor.

Ed 4. To complement the existing education programme at the nearby Nature Discovery Centre at Thatcham Reed Beds and to promote links between the two sites.

Ed 5. To engender a sense of the unique value of heathland both regionally, nationally and also internationally.

E4 CULTURAL OBJECTIVES

Cult 1. To ensure commoners can exercise their rights on common land.

Cult 2. In so far as is compatible with the conservation and recreation objectives, to ensure the site is grazed.

Cult 3. To ensure traditional practices such as coppicing birch for besom brooms are given every opportunity to flourish.

Cult 4. To provide an historic reminder of previous military usage, of the 'Cold War' and the significant peace protest associated with the site.

F KEY DOCUMENTS

Management Plan	Ecological Planning and Research	1996
Interpretive Strategy and Action Plan	Ian Parkin et al	1997

G REVIEW PERIOD

This plan should be reviewed as follows:

Annually for individual prescriptions on the basis of monitoring;

Every five years for major policies and approaches in the light of management experience and use of the site for grazing and general public;

Every ten years for comprehensive review of objectives and prescriptions based on monitoring.

Annual modifications to the plan can be made by site staff as necessary for the day to day operation of the nature conservation objectives.

Five and ten yearly reviews should be made in full consultation with the site management team, West Berkshire County Council, Greenham Commission and English Nature.

GREENHAM AND CROOKHAM COMMONS RESTORATION PROJECT

DETAILED MANAGEMENT PLAN

This document

This document sets out to describe the objectives for the management of Greenham and Crookham Commons.

Nature Conservation is the primary aim together with ensuring the needs of the Commoners who have certain rights over the land. Quiet recreation and education are also of high importance and cannot be separated from the conservation objectives.

The document then sets out the physical, ecological and cultural background to the site using existing sources together with the results of more recent studies.

The constraints upon use of the site for nature conservation are considered and used to identify the means by which individual components of the site can be managed.

It is important that the plan is reviewed at designated times and proposals are made accordingly.

Finally, a plan is provided showing the main management compartments and accompanied by compartment descriptions together with nature conservation objectives and outline management prescriptions.

GREENHAM AND CROOKHAM COMMONS RESTORATION PROJECT

MANAGEMENT PLAN

Stage 1

DESCRIPTION

This stage summarises important aspects of the site and its ecology

Stage 1

1.1 GENERAL INFORMATION

1.1.1 Location and Contact Address

Site Name:	Greenham and Crookham Commons
Unitary Planning Authority:	West Berkshire Council
County:	Berkshire, United Kingdom
Area:	414ha (covered by this plan)
Grid Reference (approximate site centre):	SU 515 645
OS 1:50 000 Landranger Sheet	174
OS 1:25 000 Explorer Sheet	158

The site is managed by:

Greenham and Crookham Commons Project Officer,
West Berkshire Council,
Countryside and Environment
Council Offices
Faraday Road
Newbury, Berkshire RG14 2AF

1.1.2 Summary Description

Ownership, land use and management

The site comprises about 500ha in an elongate east-west parcel of land extending to some 5.5km west to east and including a relatively level plateau, formerly an air base, and much of the sloping land and wooded valleys on all sides. All of the land is now owned by West Berkshire Council and managed with a ranger service so as to conserve both the nature conservation and historic interest. Much of the land has open access and is well used by the public.

Other land, within the former airbase, will be opened to the public as soon as works to remove hazardous ex-defence hardware have been completed. At that stage it is intended to develop interpretive facilities including a visitor centre. It is intended that much of the land will be extensively grazed by a small number of hardy livestock so as to replicate the former land use under which the present wildlife habitats developed.

Topography, geology and soils

The plateau comprises an elongate east-west ridge and forms an interfluve between the River Kennet in the north and tributaries of the River Enborne in the south.

The highest land in the west of the plateau is at about 120m AOD with the plateau falling to 115 AOD in the east with the surrounding land (within the site boundary) falling to about 80m AOD within valleys.
The site is developed over Quaternary and Tertiary geological strata with very flinty terrace gravels on the plateau overlying fine sandy Tertiary Bagshot Beds over London Clay.

Ground water, which seasonally rises and falls within the terrace gravels and in the Bagshot Beds, is perched over the London Clay and gives rise to seepages and springs on valley sides from which small streams pass down often deeply gullied valleys.

Much of the plateau land has been managed as fenced airbase in the past and has been extensively built up and extended with gravelly and loamy material from off-site in order to create level surfaces for runways, taxiways and ancillary services.

The combination of topography, geology and built up land means that the area supports an extremely wide range of soils from those that are strongly acidic and freely drained through soils that are seasonally or permanently waterlogged and often peaty to recent soils developed in made ground this century.

Fauna and Flora

Varied management of different parts of the site means that an extremely wide range of lowland habitats occur ranging from open heathland and grassland rich in herbs, grasses and lower plants, through scrub and recent secondary woodland to ancient wood pasture and alder carr.

The flora supports an equally wide range of plants from those that are very rare to those that are more common but generally restricted to the more unusual habitats present, especially heathland and alder carr.

The area of the former air base is distinguished from the rest of the site by both management (involving regular mowing of large areas of open heathland and grassland) and the locally base rich nature of the soils (influenced by the extensive use of concrete based materials). This means that plants that are either tolerant or intolerant of acidity often occur in close proximity and often within the same community.

The fauna includes a wide range of mammals, specialist heathland birds such as nightjar, many reptiles and amphibians as well as a great diversity of invertebrates.

UK Biodiversity Action Plan Habitats and Species

The following Broad and Key Habitats occur on Greenham and Crookham Commons

Broad Habitats	Key Habitats
Broadleaved woodland	Wet woodlands
Lowland wood pastures	Lowland wood Pastures
Acid grassland	Lowland dry acid grassland
Standing open water	Aquifer fed fluctuating water bodies

The following Action Plan species occur on Greenham and Crookham Commons

UK Action Plan	Berkshire Heathland Action Plan
Skylark	Dartford Warbler
Song Thrush	Nightjar
Great Crested Newt	Woodlark
	Adder

Bog Bush Cricket

As new habitats and species are identified, they should be appended to this management plan.

1.1.3 Land Tenure

All of the land referred to in this management plan is in the freehold of West Berkshire Council.

Past ownership is complex according to usage by the RAF and USAF. A summary of the history and development of land tenure is provided in the 1996 Management Plan prepared by Ecological Planning and Research and is not repeated here.

Specific information about reservations, covenants, easements, wayleaves, orders, notices, licences, rights of access, common rights and others may be obtained from West Berkshire Council at the address in section 1.1.1.

1.2 ENVIRONMENTAL INFORMATION

1.2.1 Physical Characteristics

1.2.1.1 Climate

National Setting

Great Britain is within the Oceanic Sector of World Climates (Troll 1965) and the land at Greenham Common is placed in the Hemioceanic subsector along with much of central and south central England.

This means that the land has a relatively small annual temperature fluctuation, has mild winters and moderately warm summers and so has a moderate continental influence.

Bioclimatic Setting

In a national bioclimatic context, the land at Greenham Common is slightly cool, slightly moist and unexposed. This climate has determined the semi-natural character of the plant communities.

In the local context there is a significant microclimatic difference between the exposed open tops of the plateau and the sheltered tree covered valleys.

For a more detailed discussion of climatic factors see:

Bendelow V C and Hartnup R, Climatic Classification of England and Wales, *Soil Survey Tech Mon No 15*, Harpendon 1980.

Agroclimatic Setting

Greenham Common is within Agroclimatic Area 31 North which extends from Newbury north to Oxford.

Total annual rainfall is about 677mm with total potential transpiration of 516mm which means that there is an average annual excess of rainfall over transpiration. November tends to have the highest monthly rainfall and March/April the least. January has the coolest air temperatures and July/August the warmest. December has the least sunshine hours and June the most.

For a more detailed discussion of agroclimatic factors see:

Smith L P The Agricultural Climate of England and Wales MAFF *Technical Bulletin 35* HMSO 1984 MAFF Reference Book 435

1.2.1.2 Hydrology

Site hydrology is complex and requires further assessment. A large number of boreholes have been established across the site and the data is available for hydrological interpretation.

The natural hydrology of land within the former airbase boundary has been disturbed during reforming of the landscape to create level runways and taxiways. This has involved infilling of valley heads, laying of drains and taking surface waters (via a series of artificially drained catchments) to a series of concrete balancing ponds whereby surface water is discharged to gullies both on and off the site.
Recent removal of most of the concrete surface, means that much of the designed catchment system has been removed, allowing greater infiltration of rain water to groundwater.

In general, there is a seasonally fluctuating groundwater table within the Terrace Gravels of the plateau perched over the underlying less permeable Tertiary deposits. In places the water table reaches the surface such as in small older gravel workings. Analysis of borehole records from within the airbase will provide more information on the height and periodicity of groundwater in this part of the site.

Springs and seepages occur on valley sides at the junction of the gravels and the underlying Bagshot Beds. These springs feed a series of streams flowing through deeply incised valleys (gullies). Stronger seepages also occur on lower valley sides at the junction of the Bagshot Beds and the London Clay and contribute to the wetness of land in lower landscape positions.

Little is known of the hydro-chemistry of the groundwater, although field tests of water in excavations near the centre of the site suggested a strongly acidic reaction with pH values of about 4 to 5.

Surface waters vary in pH. Those associated with the airfield in seasonal pools tend to have a slightly alkaline pH in the region of 8 while those in the streams tend to be moderately acidic with values between 4 and 6 depending on the relation between groundwater chemistry and the changes brought about by the vegetation.

1.2.1.3 Geology

Published geological maps and site examination during preparation of this Plan indicate a geological succession as follows

Made Ground	(flinty sandy and loamy imported materials)	On plateau surface
Peat	(thin raw peat)	In valley bottoms
Head	(flinty loamy)	Valley bottoms and lower valley sides
Plateau Gravels	(loamy and clayey flinty higher terrace deposits)	Plateau surface

Bagshot Beds	(silty fine sands)	Valley sides
London Clay	(clay)	Lowermost valley sides

For more information see:
British Geological Survey One Inch Sheets 267 and 268

Also: for more up to date or detailed information see 1:10 000 sheets available direct from the British Geological Survey, Keyworth.

1.2.1.4 Soils and Substrates

The range of soil types and substrate conditions on the site is wide and no detailed study has been undertaken.

Semi-natural soils

Semi-natural soils occur under heathland and woodland outside of the airbase boundary and in areas of ancient woodland including some peaty soils.

Man-made and man affected soils

Much of the land within the airbase boundary has been levelled which means the upper layers of some soils will have been lost.

Similarly, much of the land has been raised with imported material (mostly gravels from nearby quarries). Here the soils are predominately man made.

Some information is available from land in the north east of the site in an area to be re-profiled and examined by Dr Stuart McRae. Here a range of gravelly soils, some developed in fill and some in apparently more natural materials were examined.

Sampling and analysis showed that almost all of these soils were neutral or slightly alkaline with only a few samples from apparently in-situ gravels showing at least moderate acidity.

The high pH values were in contrast to the acid conditions required of the semi-natural heathland communities.

Airbase soils

Sporadic field testing of heathland and grassland topsoils within the airbase showed that they often had pH values between 6 and 7. These slightly acidic to neutral values would be generally considered insufficiently acidic for calcifuge heathland communities and insufficiently alkaline for some of the more calcicole species present. This suggests that both plant community composition and soil pH are in a state of flux and that further changes in the balance between calcifugous and calcicolous species are likely. The direction of change is unknown.

These high pH conditions suggest considerable contamination of the heathland soils by calcareous materials, presumably from concrete used in airfield construction and possibly also from surface dust following recent concrete crushing operations. The conditions are far from ideal for heathland and it could be that calcifuge communities are in decline because of this. However, the picture is far from clear.

Soil Classification

The national soil map does not distinguish the large area of man-made soils on the airfield and suggests the range of soils that would occur on heathland conditions. Information from the national map and direct observations on site indicated above have allowed the following classification of soils present.

Plateau within airbase:

Man-made soils	Well drained flinty loamy and sandy, typically neutral (sometimes calcareous where influenced by concrete), locally acidic, locally seasonally waterlogged
Paleoargillic podzols	Well drained, very flinty, strongly leached acidic soils on plateau gravels with pale and humus enriched subsurface horizons

Outside of airbase:

Humoferric podzols	Well drained, stoneless, or sandy or slightly flinty soils on Head and Bagshot Beds; strongly leached very acidic soils on Plateau gravels with pale and humus enriched subsurface horizons
Paleargillic brown earths	Well drained flinty loamy soils on Head and Bagshot Beds, reddened at depth
Argillic gley soils	Seasonally waterlogged loamy, locally flinty soils, acidic or neutral, on upper valley sides
Humic gley soils	Prolonged or permanently waterlogged loamy soils with humose or thin peaty surface layers on valley side seepages
Peat soils	Permanently waterlogged soils with peaty surface layers at least 40cm thick over flinty loams, generally acidic, locally neutral.

For more information see:

Jarvis M G, Allen R H et. al. *Soils and their Use in South East England*, Soil Surv Tech Bull No 15 Harpendon 1984.
Soils of England Wales *Sheet 6 South East England* Ordnance Survey for Soil Survey of England and Wales 1983.
McRae (October 1998) Soil Resources Land on the former Greenham Common Airbase, Newbury, Berkshire

1.2.2 Biological Information

1.2.2.1 Wildlife Habitats and National Vegetation Classification

Wildlife Habitats

The entire site includes a very wide range of open and wooded habitats, many of which are ancient and species rich. The main wildlife habitats, and their areas, are listed below (see Habitat Survey - October 1999 for greater detail).

National Vegetation Classification

The following table lists those National Vegetation Classification classes so far identified together with the source of the NVC attribution.

Community	Sub-community	Notes	Source
H2 *Calluna vulgaris - Ulex minor* heath	H2a Typical	Mown heathland within airfield rich in lower plants and in a mosaic with U1b	R D Porley 1993
		Tall degenerate species poor beyond airfield	EPR Management Plan 1996

Habitat	Sub-habitat	Characteristics	Area (ha)	Area %
Woodland 114ha	Ancient semi-natural 35ha	Wet Alder woodland, coppice and carr	10.25	2.5%
		Oak - Hazel coppice, variously with Hornbeam and Ash	18.23	4.4%
		Oak wood pasture	6.31	1.5%
	Recent Secondary Woodland 66ha	Immature Birch woodland often with Gorse and young Pine, recently invasive of heathland	26.62	6.4%
		Immature Birch - Oak woodland locally with Ash - Aspen - Willow - Turkey Oak, recently invasive of heathland	39.06	9.4%
	Older Secondary Woodland 13ha	Mixed maturing deciduous woodland variously with Oak, Elm, Birch, Alder, Willow, Aspen, Cherry and Pine. Includes some uniform oak woodland possibly planted.	12.65	3.1%
Plantation 4ha	Deciduous 2ha	Mixed amenity plantings (partly felled 1999)	1.88	0.5%
	Coniferous 2ha	Mostly Pine, may include some uniform aged secondary Pine woodland	1.96	0.5%
Recently felled woodland 7ha	Various 7ha	Bare ground or returning to acid or rushy grassland and heathland	7.06	1.7%
Scrub 28ha	Birch-Oak 25ha	Birch-Oak, locally with Pine, Willow, Sycamore, Gorse, Blackthorn and Hawthorn	25.46	6.2%
	Birch over heathland 3ha	Cut for besom brooms	2.88	0.7%
Grassland 116ha	Acidic 14ha	Long and short swards variously with Deschampsia, Gorse and Calluna	10.56	2.6%
		With calcicolous herbs	3.5	0.9%
	Mesophytic 102ha	Variously herb-rich and herb poor, some rushy or recovering from felling of plantations	102.1	24.7%
Tall Fern 8ha	Bracken 8ha	Bracken	8.1	2.0%
Heathland 33ha	Dry 31ha	Pioneer to mature stages	31.13	7.5%
	Wet 2ha	Variously Carex, Juncus or Sphagnum-rich	1.63	0.4%
Open Water 1.3ha	Ponds and pools, mostly in gravel workings		1.31	0.3%
Misc. 103ha	Bare gravel from former runways, disturbed areas, former buildings and gravel workings		103.37	24.9
		Total	414ha	100%

U1 Festuca ovina - Agrostis cappilaris-Rumex	U1b Typical (but very variable)	Plateau vegetation within airfield. Contains herbs more typical of mesotrophic grasslands	R D Porley 1993

Community	Sub-community	Notes	Source
acetosella grassland			
	U1d Anthoxanthum odoratum - Lotus corniculatus	Plateau vegetation within airfield. Contains many herbs and bryophytes typical of calcareous grasslands	EPR Management Plan 1996
	U1e Gallium saxatile - Potentilla	East of airfield, patches of richer acid grasslands associated with gorse scrub in gravel pits	EPR Management Plan 1996
	Danthonia - Carex facies	Part of H2-U1 mosaic on airfield	R D Porley 1993
U2 Deschampsia flexuosa grassland	U2a Festuca ovina - Agrostis cappilaris	Dense rank acid grasslands, mainly species poor associated with H2a (degenerate)	EPR Management Plan 1996
MG6 or MG1 tending to MG5 Centaurea nigra - Cynosurus cristatus grassland		Plateau vegetation within arifield. Variable dull rank swards on productive soils locally with tall herbs	R D Porley 1993 and EPR Management Plan 1996
M21 Narthecium - Sphagnum mire		Valley mires supported by acid springs now being cleared of invading trees and scrub mostly outside of airbase	EPCG 2000
M23 Juncus effusus/acutiflorus Galium palustre rush pasture	M23a Juncus acutiflorus	Plateau vegetation within airfield. Local areas of winter flooding	EPR Management Plan 1996
M25 Molinia - Potentilla mire	M25a Erica tetralix	Open bogmoss lawns supported by acid springs smothered by Molinia	EPR Management Plan 1996
W4 Betula - Molinia woodland		Invasive birch woodland over former acidic valley mire, locally with species poor bogmoss lawns below	EPR Management Plan 1996
W5 Alnus glutinosa - Carex paniculata woodland	W5c Chrysosplenium oppositifolium	Alder gully coppice woodland on peaty soils saturated by neutral springs	Andrew Westgarth - undated
W6 Alnus - Urtica woodland	W6a Betula	Drier more species poor alder woods	EPR Management Plan 1996; Andrew Westgarth - undted
W7 Alnus - Fraxinus - Lysimachia nemorum woodland	W7a Urtica dioica and W7b Carex remota - Cirsium palustre	More base rich flushed ancient coppiced alder woods	EPR Management Plan 1996; andrew Westgarth - undated
W8 Fraxinus - Acer - Mercurialis woodland	W8a Primula vulgaris - Glecoma hederacea	Lower parts of valleys with open herb-rich ash-oak woodland	EPR Management Plan 1996
W10 Quercus - Pteridium - rubus woodland		Older invasive woodland with Rubus	EPR Management Plan 1996; Andrew Westgarth - undated
		Drier older woodland 19th or 20th C origin with some ancient wood pasture with oak pollards, Holly and occasional beech	EPR Management Plan 1996
	W10a Typical W10e Acer pseudoplatanus - Oxalis acetosella	Ancient woodland in Peckmoor Copse	EPR Management Plan 1996
W16 Quercus - Betula - Deschampsia flexuosa woodland		Younger Invasive woodland beyond airbase without bracken	EPR Management Plan 1996; Andrew Westgarth - undated
W23 Ulex - Rubus scrub		Mostly heavily invaded by birch	EPR Management Plan 1996
W25 Pteridium - rubus underscrub		Glades in secondary woodland dominated by Bracken often with bramble on valley slopes	EPR Management Plan 1996

1.2.2.2 Flora

EPR (1996) describe the mown heath and grassland within the airbase as:

> ' *... a remarkable survival of species rich heathland vegetation. The mowing has imitated heavy grazing and preserved many nationally declining species which were traditionally dependent on heathland grazing for their survival. Added lime from the concrete of the installations has allowed a very unusual selection of species more typical of chalk downlands to colonise, producing unusual combinations of species'*.

The flora of the heathlands within the airbase is discussed in detail by Porley (1993) who draws attention to the bryophyte and lichen floras. Also particularly to the flora of drier parched soils and of the calcicole element to the heathland flora. Lichens have been assessed by Francis Rose and Ron Porley in May 1995. Dr Francis Rose concludes that: '*A moderately rich lichen flora occurs in the Calluna areas and associated acid grassland, containing a number of interesting and local species.*'

EPR list those species known from the heaths and grasslands from existing records. More information on the airfield communities is now available and is discussed in the appendices or in documents referred to below:

Porley R D (1993) A botanical survey and assessment of heathland at Greenham Common Airbase, Berkshire. English Nature South Region Science. Includes historic maps and detailed maps of heathland habitat and notable flora.

Porley R D (1993) Berkshire's Heathland. English Nature South Region Science.

Porley R D and Hyder B (1994) Site Quality Monitoring, Greenham and Crookham Commons. Describes in detail the results of permanent transects.

Rose F and Porely R (May 1995) Greenham Common SSSI - Lichen Survey and Assessment.

EPCG (1998) A Botanical Appraisal of the Western Heathlands. A preliminary report on the vegetation of compartments 1B and 1C

EPCG (1998) A Botanical Appraisal of the South Western Heathlands. A preliminary report on the vegetation of compartment 2B.

EPCG (1998) A Reconnaissance Appraisal of Grasslands in Some Northern Parts of the Airbase

EPCG (1999) Notes on the Recorded Flora

EPCG (1999) Vegetation Transects Within the airbase.

EPCG (1999) Vegetation Transects Within the airbase - Transect Descriptions.

EPCG (1999) Habitat Survey

Westgarth A (1998) A study of Vegetation in Ballshill Gully, Greenham Common.

1.2.2.3 Fauna

EPR (1996) discuss known records of fauna. There has been very little work on the fauna of the commons and information is mainly from desk study of pre-existing records. Increasingly, new site observations are being recorded, especially of birds and butterflies

Mammals

Mammals known include roe deer which are frequently seen within and outside of the airbase fence. No doubt, a wide range of common rodents, insectivores and small mustellids will be occurring on the site.

Birds

Large flocks of wintering lapwing and golden plover are recorded and also a number of breeding species including nightjar, tree pipit and stonechat.

Most recently (April to May 1998) a census has been undertaken of the heathland lozenges either side of the main airbase runway by the Newbury District Ornithological Club. This is the main area of open habitat on the commons, but forms only a part of the total area.

Breeding species in this open area were:

lapwing (one pair),
skylark (up to 50 territories),
meadow pipit (9 territories),
stonechat (several pairs in gorse) and
linnet (widespread over the common).

Snipe was recorded in a wet depression. A range of other non-breeding and passage birds were also recorded.

The total list of species recorded during this census within the airbase perimeter is:

Breeding within the lozenges

Lapwing	Skylark	Meadow Pipit
Stonechat	Linnet	

Resident within the lozenges

Stock Dove	Wood Pigeon	Pied Wagtail
Jackdaw	Carrion Crow	Starling

On passage migration

Golden Plover	Wheatear

Occasional observations

Grey Heron	Kestrel	Pheasant
Snipe	Green Woodpecker	Rook

Others within perimeter fence

Turtle Dove	Nightingale	Red Legged Partridge
Blackbird	Cuckoo	Song Thrust
Mistle Thrush	Woodlark	Great Spotted Woodpecker
Blue Tit	Swallow	Great Tit
Magpie	Chaffinch	Dunnock
Bullfinch	Garden Warbler	Greenfinch
Blackcap	Goldfinch	Whitethroat
Linnet	Willow Warbler	Yellowhammer.

See: Report on the Birds of Greenham Common. Census carried out by Newbury District Ornithological Club 1998.

Other species recorded in the wider area by the Rangers include:
Little Ringed Plover Redshank

Amphibians and Reptiles

EPR record palmate and great crested newts in ponds in the airbase. We have seen grass snake in one of the concrete balancing lagoons and also adder on steep hardcore slopes at the edge of the made up ground. Other adder records are available.

Fish

No records that we are aware of.

Invertebrates

EPR (1996) indicate that the airbase is listed in the English Nature Invertebrate Site Register and includes nationally scarce species such as bog-bush cricket, silver-studied blue and purple emperor together with local species including grizzled skipper, white admiral, silver-washed fritillary and grayling.

Recent butterfly records from the Rangers include: Grayling and Small Blue.

The site is considered regionally important for Diptera (true flies) and is likely to have a rich solitary wasp fauna but invertebrates have not been well recorded here.

1.2.2.4 Biodiversity Action Plan Habitats and Species

As a heathland site, there is the opportunity to contribute to national and local targets for heathland habitats and Associated Species and to demonstrate best practice by ensuring that works are in accord with the Berkshire Heathland Biodiversity Action Plan 1999 - 2005 (BBONT for Berkshire Heathlands Project September 1998).

Particular, Berkshire Heathland Biodiversity Action Plan priority species at Greenham are listed below together with notes on management:

Species	**Management Notes**
Woodlark	Manage sites for each species, such as by grazing; Disseminate best practice; Maximise habitat; Monitor populations and breeding success.
Nightjar	Continue management and enhance management techniques; Disseminate best practice; Maximise suitable

t is recommended that a record be made of:

UK Biodiversity Action Plan Long List;
Nationally threatened (red list);
Rare species; and
Scarce species

currently found at Greenham and Crookham Commons.

1.2.3 Cultural Information

1.2.3.1 Archaeology and History

Archaeology

Little information is currently available. Much of the archaeology of the former airbase will have been destroyed by land reforming.

Prehistoric evidence appears restricted to Bury's Bank, a defensive ditch system crossing the western end of the commons. It is assumed that the heathland vegetation became established from Neolithic times onward.

History

The EPR Management Plan 1996 describes the historic character of the common lands and suggests that 18th to 19th century land use was as rough grazing with some alder woodland, wood pasture and acidic valley mires

1.2.3.2 Common Rights

The EPR Plan discusses the commons rights and indicates that registered rights include those for:

gravel	(taking gravel),
estovers	(taking fallen wood),
gorse	(taking gorse for fuel),
bracken	(taking bracken for fuel),
turf and peat	(for fuel and garden use),
edible nuts	(collecting of),
lopping	(pollarding trees),
underwood	(felling non-timber trees),
piscary	(right to fish),
grazing	(of cattle, horses/ponies, donkeys, goats, sheep and pigs, ducks and geese).

and indicate that the registered rights suggest a tradition of grazing management similar to that of the New Forest with mainly cattle and sheep.

Grazing apparently ceased in the 1930's leading to 'a tide of birch scrub and bracken' with loss of many specialist plants.

1.2.3.3 Military and Airbase Use

EPR (1996) and Ian Parkin et al (1997) indicate the following outline history. Ian Parkin et al includes a detailed history of the site.

1768	Military camp present
1872	20,000 troops using the common for training
WW1	Use for infantry training
1938	Requisition by military
1940	RAF airbase established including an unfenced airstrip
1943	USAAF base established
1945-6	Reverted to RAF
1951	Air Ministry requisition of both commons to create one of the large runways in Europe leading to destruction of heathland, levelling of the plateau and infilling of gullies
1960's	American occupation during the 'cold war'
1980's	Became base for nuclear armed cruise missiles with between 2000 and 4000 American personnel (GIs) present
1989	Missiles removed
1991	Airbase abandoned after 50 years of military occupation

Despite the 1950's destruction, mowing of the remaining heathland has *'... led to the conservation of much short mown heather heathland .... which is now rare outside of the New Forest'*.

1.2.3.4 Recreation

Public access to the airbase has been restricted since World War II because of airforce activity, and more recent engineering works to remove runways and buildings.

Public footpaths and open corridors through heathland and woodland outside of the airbase perimeter have always been lightly used for dog walking and there is some horse riding.

The removal of the airbase perimeter fence in Spring 2000 opened the entire site to the general public. Since that time, the site has been extensively used for walking, riding and cycling.

GREENHAM AND CROOKHAM COMMONS RESTORATION PROJECT

MANAGEMENT PLAN

Stage 2

EVALUATION AND OBJECTIVES

This Stage evaluates the information provided in Stage 1
and sets achievable objectives

Stage 2

2.1 CONSERVATION STATUS

2.1.1 Historic Interest

We have no information about the history of ecological interest.

2.1.2 SSSI Status

A major part of the site has been notified by English Nature as Greenham and Crookham Commons Site of Special Scientific Interest and occupies 278.61ha (688.45acres).

Original notification was in 1985.
Last Revision was 16th March 1994 when some small areas were denotified.

The notification is appended to this Management Plan.

2.1.3 Site Definition and Boundaries

The boundary of the land included in the management plan is in the ownership boundary of West Berkshire Council.

The registered boundary is available from the Project Officer.

2.2 EVALUATION OF FEATURES

2.2.1 Criteria for Evaluation

The conservation value is systematically appraised according to the ten criteria in A *Nature Conservation Review*.

Size: The site extends to 500 ha of almost continuous wildlife habitat, albeit divided in places by public roads. This means that small losses of habitat, individual fires, changes of management, will not significantly affect the nature conservation interest. The site is large enough to support a varied range of related wildlife habitats so that they can interact with each other.

Diversity: The site contains a very wide range of habitats from ancient and secondary woodland to open grassland and heathland, each habitat demonstrating a wide variety of micro-habitats and inter-relations.

Naturalness: Almost all of the entire site has plant and animal communities comprising native species of great variety. Plantations and sown areas occur, but are small in extent. Over much of the site these plant and animal communities are developed over semi-natural soils and so demonstrate a high degree of naturalness. Within the perimeter of the former airbase, the plant and animal communities are also native, but occur in communities dependent in part upon intensive and distinctive land management and disturbance.

Rarity: Surveys to date have shown that the site contains a range of rare plant and animal species together with a range of key habitats as listed in the UK and Berkshire Biodiversity Action Plans.

Fragility: The large size of the site means that individual habitats are extensive, robust and so are less fragile than small areas would otherwise be. However, acidic heathland habitats are very sensitive to changes in pH and plant nutrients, also to excessive trampling. Alder carr habitats are similarly sensitive to human interference or excessive grazing.

Typicalness: The large area of woodland and different open habitats are typical of their types, although their extensive area means that they differ in their more robust character and ability to hold a wide range of plant and animal species in semi-natural communities.

Position in an ecological unit

The whole site provides a wide range of wildlife habitats arranged according to their edaphic and cultural differences in a series of interacting ecological units. This is one of the most valuable aspects of the site. The site is also adjacent to other areas of woodland and wetland providing wider habitat continuity.

Potential Value: While the site has considerable value at present, with good management, it could become far richer. Given good management such as by grazing and clearing of scrub and coppicing of trees, it will be possible to replicate cultural habitats such as those in the New Forest and capable of supporting an increasing range of plants and wild creatures.

Intrinsic Appeal: The site is unusual because of the recent airbase use of the land which gives it a special historic character. Coupled with this are the wide open spaces and relatively untouched older woodlands which all provide considerable intrinsic appeal.

2.2.2 The site in wider perspective

The site is of considerable regional significance as an important part of the West London Tertiary Basin heathlands and as a major contributor to several key UK Biodiversity Action Plan Habitats.

Site Features	Importance			UK BAP habitats
	National	Regional	Local	
Regional Geology and Geomorphology		High		
Suite of springs and seepages		High		
Heathland rich in bryophytes, lichens and small annual herbs	Moderate			Lowland heathland (manage to maintain)
Heathland - acid grassland mosaic	Moderate			Lowland heathland and lowland acid grassland
Unmanaged heathland			High	Lowland heathland
Acid grassland		High		Lowland acid grassland
Ancient coppice woodland		High		
Ancient wood pasture			High	Lowland wood pasture
Alder carr			Very High	Wet woodland
Neutral grasslands - sp-rich		High		
Neutral grasslands - sp-poor			Moderate	

2.2.3 Specified Limits

Existing open habitats should be maintained open, especially the more species rich heathland. Some scrub development is allowable in less sensitive areas to allow a more diverse bird, reptile and invertebrate population.

Some (about 16ha) recent scrub and secondary woodland of low species diversity should be removed to allow regeneration and extension of heathland habitat.

Ancient coppice, wood pasture and Alder carr should be retained in its entirety and managed.

As a result of the management specified in this plan it is anticipated that the areas of open heathland will slowly increase at the expense of neutral/calcareous grassland as lime leaches out of the soils.

The following are target percentage areas for the main habitats by the end of the 10 year plan period:

Broad Habitat Type	**Existing**
Alder Woodland	10.3ha
Scrub	28ha
Recent Secondary Birch Woodland	66ha
Older Secondary Mixed Deciduous Woodland	13ha
Plantation	4ha
Wood Pasture	6.3ha
Neutral grassland	102ha
Acidic Grassland	14ha
Heathland	33ha

2.2.4 Ideal Management Objectives

At one time, Greenham and Crookham Commons would have been more open than today. This is because commoners' livestock would have prevented succession to scrub and woodland while allowing wetter land to develop special characteristics as Alder Carr. The Carr would itself have been managed by coppicing (cutting to base of stems and rotational harvesting of regrowth).

It was during this period of traditional management that the commons developed their special habitat character.

Because of this, ideal management is to return the majority of the site to grazing by hardy livestock, preferably owned and put out by commoners but with some control so as to achieve conservation objectives.

Grazing priority should be to open habitats, especially species rich acidic grassland and heathland with back up grazing provided on species-poor grasslands.

Woodlands are best managed for a variety of habitat sub-types. These range from coppicing of ancient woodlands, through to non-intervention in the case of some secondary woodland to allow succession to mature woodland with time. Some woodlands can be allowed to develop into wood pasture.

Wetlands, including the small number of ponds (mostly in old gravel workings), should be managed to ensure they remain open and partly unshaded. New ponds can be created from works to remove airbase structures.

Large areas of land created during airfield times should be returned to open habitat, especially heathland, even if that means considerable (but careful) excavation of non-acidic fill.

2.3 FACTORS INFLUENCING MANAGEMENT

Factors influencing management include:

☒ need for public access
☒ presence of proposed interpretive centre
☒ need for fencing
☒ availability of livestock
☒ availability of manpower and machines
☒ existence of wayleaves
☒ the possible presence of local areas of pollution.

2.3.1 Natural Trends

The prime natural processes affecting the wildlife interest are:

a. succession to scrub and woodland on the open habitats and

2.3.2 Man-induced trends

a. possible slow transition from heathland to more mesotrophic grassland habitat (continuing the present trend) followed by a return to strongly calcifuge heathland in due time;

b. effects of increased public access to certain areas such as around car parks and visitor centre and

c. unexpected trends following grazing, such as more intensive grazing in poor grassland areas with limited grazing in those heathland areas requiring more intensive management.

2.3.3 External Factors

a. unforeseen reduction in availability of grazing stock and

b. greater numbers of visiting public than anticipated.

2.3.4 Obligations

Obligations on how the site is managed are related to:

Wildlife and Countryside Act
Need to consider implications for protected species especially heathland birds, badgers and great-crested newts.

Formal Agreements with:
Neighbours
Countryside Commission
Ministry of Agriculture, Fisheries and Food
Grazing tenants/commoners
Cutting birch for besom brooms.

Occupiers Liability Act

Health and Safety at Work Acts

Accepted national and local practices

Legal obligations of others

Non-legal obligations of others.

Details of these are available from the Project Officer.

2.3.5 Legal Constraints

Details of these are available from the Project Officer including:

Tenure
Access
Health and Safety of employees and public

2.3.6 Management Constraints

Identify the minimal levels of management resources to retaining the interest of the site.

☒ Finance
☒ Ranger service
☒ Labour availability
☒ Voluntary resources

2.3.7 Impact Assessment

The net effect of the management plan should be improved nature conservation linked with interpretation and public enjoyment of the countryside.

Undesirable effects may occur from misdirected interpretation of the management plan and increased visitor numbers leading to path erosion, fire risk and disturbance to wildlife from trampling and noise.

Monitoring of management and visitor pressure should be undertaken so that continued undesirable effects may be mitigated or avoided by improved management and design.

2.4 OPERATIONAL OBJECTIVES AND MANAGEMENT OPTIONS

2.4.1 Objectives and Rationale

<u>Objectives</u>

The ecological objective is to develop a wide range of extensively grazed open habitats, heathlands and grasslands, together with scrub and woodland of various

types to ensure a habitat of considerably diversity but with emphasis on the need for restoration primarily to heathland.

A key objective is to maintain structural diversity of the heathlands with an ericaceous layer of varying heights and structures, areas of acid grassland, areas of flowery neutral grassland, some areas of scattered trees and scrub, areas of bare ground, gorse, wet heaths and bogs and small areas of appropriate open water.
Note: Structurally diverse habitats support characteristic birds, reptiles, invertebrates, vascular and non-vascular plants, the presence of which indicate high habitat quality.

It is essential to achieve a mix of habitats associated with open heathland. The need for flower rich places in the proximity of heathland is well established by entomologists because many insects feed, shelter and reproduce in different locations.

It is also essential to consider the site in relation to other habitats in the area and with which it is continuous with and to allow for species exchange and migration into and out of the site.

Rationale

Where the site can be fenced, grazing with hardy livestock is the best option for managing the open habitats, creating habitat diversity and opportunities for species enrichment.

Clearance of secondary woodland and spraying to reduce bracken will be necessary in problem areas. Special treatments in selected areas, such as topsoil stripping, will assist with biodiversity objectives.

Management of wetlands by removing invading willow scrub from open waters will improve habitats for aquatic invertebrates and amphibians.

Public access is being controlled by entry points, positions of stiles, path routes and boardwalks to avoid over trampling of more sensitive habitats. Wider public access can be encouraged in more robust woodland and species-poor grassland. Detailed prescription for public access together with maps are available from the Project Office (see maps appended showing access points etc). See also relevant Local Act of Parliament for statutory basis.

Selection of operational objectives and management options are based upon:

a.	The nature conservation objectives	ie. to sustain biodiversity
b.	Habitat priority	ie. priority to key habitats
c.	Land designation	ie. with due regard to areas within SSSI or other formal land designation.

There may be many reasons why ideal objectives cannot be met such as:

d.	Grant availability	ie. grant opportunities should be taken up where available, unless this is at the expense of resources that might otherwise be allocated for key habitats

e. Ranger/Estate staff availability — ie. insufficient staffing will reduce management opportunities

f. Grazing — ie. insufficient livestock availability or staff/commoner availability to manage the stock.

2.4.2 Identification of operational objectives and selection of management options and outline prescriptions

Each Compartment identified on the Compartment Plan (appended) is divided into sub-compartments.

For each compartment and sub-compartment, Operational Objectives are defined (which describe what is intended for each habitat), together with Management Options (which describe the degree of intervention for different purposes) together with outline prescriptions for each main operation in order to achieve the objectives.

Each Compartment is separately described to include:

a) a plan showing subdivisions;
b) a plan showing the main wildlife habitats and
c) a table of operational objectives, management options and outline prescriptions.

2.5 RECORDING AND MONITORING

2.5.1 Habitat and Species Recording

It is vitally important that regular records be collected so that full evaluation of the ecological status of the land holding can be undertaken on a regular basis. In this way, lessons can be learnt from management changes, and about the effects of grazing in particular.

All information recorded should be stored both as computer files (with copies held at a secure location) and as hard paper copies and maintained in a standard format.

Habitat maps in this management plan should be updated annually to take account of changes, such as conversion of woodland or open heathland.

Maps of Biodiversity Action Plan species and other notable species (such as autumn ladies tresses, bee orchids, fine leaved sandwort and others) should be maintained.

2.5.2 Monitoring

Why Monitor at Greenham?

Monitoring should be primarily used to answer specific questions. This is to ensure that monitoring is effective and not undertaken for its own sake.

In particular monitoring should consider:

1. Specific management issues:

Rate and success of heathland colonisation of gravels;
Impact of visitors; and
Impact of grazing.

2. Contribution to national and local Biodiversity Action Plan targets:
   Area of heathland increase; and
   Numbers of Biodiversity Action Plan species

3. Quality of Habitat:
   Monitoring of heathland plots established by Ron Porley;
   Monitoring of the three transverse transects across airfield;
   Monitoring of key heathland areas outside of airbase boundary; and
   Monitoring of wet woodland vegetation with the gullies.

4. Achievement of Nature Conservation Objectives

A considerable start has been made on monitoring and work to date has included:

- Fixed point photographs and
- Mapping for:
- Common Bird Census
- Butterfly Transects
- Exclosures from grazing.

A detailed strategy for monitoring should be established with target dates for monitoring and review of different faunal and floral groups together with some physical site characteristics.

It is important that the monitoring strategy should address matters in the following table (others may be developed from time to time as knowledge increases):

What is being monitored	**When will it be monitored**	**By what means**	**Who will undertake the monitoring**	**Review period first ten years**
Rate and success of colonisation of gravels	Autumn	Visual estimate of area and mapping of colonised zones of sample areas	Site Wardens	Annually for first years then as necessary
Impact of visitors on key heathland and wet woodland habitats	Mid summer	Measurement of trampling on most visited areas	Site Wardens	Annually
Impact of grazing on key heathland and wet woodland habitats	Spring	Measurement of areas most grazed and changes in vegetation from sample areas	Site Wardens or specialists	2 years
Area of heathland increase	Autumn	Visual estimate area of new heathland arising from scrub clearance and heathland creation	Site Wardens	5 years
Numbers of BAP species	According to species concerned	Standardised techniques	Site Wardens and specialists	Annually for faun yearly for flora
Key plant communities such as species rich acid grassland	Early spring	Re-survey of key sub-compartments	Specialists	2 years
Three north-south	Mid Summer	Re-survey of each	Site wardens or	2 years

What is being monitored	When will it be monitored	By what means	Who will undertake the monitoring	Review period first ten years
vegetation transects		transect	specialists	
Nested quadrats and transects in Lozenge 10 established by Ron Porley, English Nature	Spring	Detailed re-survey of quadrats	English Nature	Annually for first years then every years
Butterfly transects	Summer	Standard transects	Site wardens	Annually
Key invertebrates such as Hymenoptera	Summer	Examination of key habitats	Specialists	5 years
Key bird species and diversity	Various	Air base	Berkshire Ornithological Society	2 years
Topsoil pH values below lime affected vegetation	Winter	Air base with controls outside	Site Wardens	3 years
Water pH from selected pools	Winter	Laboratory testing	Site Wardens	3 years

All monitoring records should be maintained:

- on a standard database
- be backed up by original field notes (which will often contain more information)
- as both map and database information
- be reviewed for the trends they show on a six monthly or annual basis (to avoid too large a dataset which would be difficult to review
- and reported upon at two yearly intervals.

Additionally, a separate monitoring file should contain all maps and data printouts and be available for immediate reference.

2.6 NOTES ON GRAZING

The objective of grazing is to restore the character of the commons to as they were prior to use of the site as airfield. Grazing was the prime motivator in developing the open habitats that we value at Greenham and Crookham Commons today.

Points to remember are:

1. Mixed stock grazing is preferable to a single species

This is because different livestock species feed on the same vegetation in different ways at different times of the year and different species and breeds will favour different vegetation from grasses, herbs, heather and scrub and tree foliage.

2. Traditional common grazing was low intensity

While any grazing is better than no grazing, overgrazing may be harmful to wildlife habitats because of physical damage to the vegetation and soils.

3. Restoration and maintenance grazing are different

At Greenham and Crookham Commons we are concerned with restoration grazing in that we are attempting to restore the structure of the vegetation. This is so that the balance of species can be restored and opportunities for species lost to be regained.

Grazing provides the innumerable ecological niches for invertebrates to colonise as well as providing conditions required by many heathland and open grassland reptiles, birds and small mammals.

Plants will be the first to respond and then the birds. Invertebrate, small mammal and reptile communities will take time to adapt to the new conditions.

Maintenance grazing in contrast, is concerned with maintaining the desired swards.

4. Stocking rate can only be established by experience

It is impossible to allocate a precise stocking rate for this restoration phase. This is because the way an animal grazes or browses will depend upon its breed, its age, its experience of extensive grazing systems, the time of year, how well it knows the site and the food resources available.

Experience gained in the restoration phase will dictate the level of stocking for maintenance.

5. Some stock types are better than others

Traditional breeds are better than modern farm stock for grazing heathland and older grasslands. Older animals do better than young stock.

6. Herbivores learn over time

Herbivores learn the food resources of their site over time and grazing and browsing behaviour will evolve as they learn. This means that leaving the same group of animals on site for a long period of time will give better long term results than using different groups for short periods of a few months and that the plants grazed will differ with the seasons.

7. Supplementary feeding should be avoided

This is because the animals need to be encouraged to go out and forage. If they begin to associate a particular place or time with easy food, they will come to rely on it. This is another reason to avoid modern farm stock and other animals that are too domesticated.

The exception is in extremely adverse situations such as heavy snow cover when supplementary feeding will be necessary.

Supplementary feeding should only be undertaken at agreed locations to avoid damage to sensitive habitats. These locations to be agreed and designated prior to feeding.

There is a general presumption against supplementary feeding within the SSSI.

8. Large herbivores should become part of the ecosystem

We are not farming a nature reserve. The livestock need to be part of a sustainable agricultural system and will act as a free ranging herd.

9. Long term aim

To establish a mixed horse/pony/cattle/sheep group using traditional hardy breeds, that lives on the commons all year round and roams freely.

Ideally the stock should be dedicated to the commons and without a profit motive. Grazing in this way will have an initial high cost, but only veterinary fees thereafter.

In practice, farm based stock will inevitably be used, but a combination of farm owned stock and Project owned stock will assist with the restoration and maintenance of the commons.

10. Grazing creates a mosaic of habitats

Extensive grazing over the commons will create an intricate mosaic of vegetation structures. Some areas will be selectively and frequently grazed, other areas will be lightly grazed infrequently. The presence of better quality pasture on the mesotrophic grasslands will help prevent overgrazing because the grasses will be grazed preferentially.

11. Provide water and shelter

There are some pools and ponds on the site, but they are few. If the balancing lagoons are converted to ponds, these will provide a number of drinking sources around the site and provide trampled habitats in the vicinity, themselves of value. Some drinking troughs may have to be provided in those areas where grazing is most desired.

Shelter will be provided from the adjoining woodlands to which the animals will have free access.

12. Use of Avermectin

Avermectin is a name given to a group of veterinary medicines used to control parasites in livestock. Because they are excreted in dung, they are also active against dung living invertebrates. This means they are potentially damaging to the ecological interest of the land.

Avermectins should avoided entirely and alternative products should be used wherever possible. Further advice is provided in English Nature 'Species Conservation Handbook' Invertebrates 7.8 September 1997.

Where stock is put out onto the commons, the use of avermectins should be discussed with the stock owner with a view to minimising their use.

2.7 NOTES ON COPPICING

Coppicing is the process of cutting down the main stem of a tree to the base to encourage the re-growth of multiple stems, and which stems are then harvested on a regular basis. This is a traditional process, common in many lowland ancient woodlands, and has considerable benefits to wildlife conservation. The growth of multiple stems also provides a more shrubby appearance which can assist with screening and with the development of graded woodland edges. For these reasons, coppicing has been recommended in some areas.

The main area of existing past coppice management is within the Alder Gullies where the Alder has been coppiced in the past. While it would seem sensible to re-coppice the old coppice stems, this may not be compatible with nature conservation management because of the damage that might be done to the sensitive wetland soils, peats and flora that occur in these areas. Coppicing in these wetland areas should only be undertaken for good conservation reasons and agreed with English Nature where they occur within the SSSI.

Coppicing of woodland fringes is more desirable but because deer and domestic stock are present, areas of coppice will need to be temporarily fenced and the fences maintained until the regrowth is sufficiently robust to withstand grazing.

Coppicing of hazels needs to be considered on a site by site basis. Coppicing of hazel on a large scale should only occur where adequate deer control measures are in place.

Left alone, hazels tend to have a limited life as the major stems fall and decay. Coppicing considerably extends the life span of hazels by preventing stem fall and decay and encouraging the development of new stem growth. Such management however, is only usually viable where large areas can be fenced to prevent excessive and damaging browsing by deer and other livestock. For this reason, coppicing may not be viable where there are only limited quantities of hazel.

GREENHAM AND CROOKHAM COMMONS RESTORATION PROJECT

MANAGEMENT PLAN

Stage 3

COMPARTMENT DESCRIPTIONS with OPERATIONAL OBJECTIVES MANAGEMENT OPTIONS and OUTLINE PRESCRIPTIONS

This Stage provides compartment by compartment descriptions, objectives and prescriptions and also a classified spreadsheet of all sub-compartment habitat sections and a set of compartment maps showing management units and habitat sub-compartments.