

OPEN SPACES DEPARTMENT

Burnham Beeches NNR & SAC



LOCAL MANAGEMENT PLAN, 2010 - 2020

The City of London Open Spaces Department

Burnham Beeches is one of a number of open spaces, parks and gardens in and around London, owned by the City of London Corporation as part of its commitment to sustaining a world class city. Each open space is a unique resource, managed for the use and enjoyment of the public and for the conservation of wildlife and historic landscape.



Community Consultation

This management plan is the result of extensive consultation with a wide variety of stakeholders including government and non government agencies, local authorities, conservation experts, local groups and site visitors. We have received a high level of support for all aspects of the plan.

"I love walking in the Beeches - thank you for all your hard work"

~2009 public consultation~



The City at Burnham Beeches

A team of Rangers, based at Burnham Beeches, works with volunteers and contractors to protect and maintain the important features of Burnham Beeches and Stoke Common for people and wildlife.

A separate management plan is available for Stoke Common.

A Legal Duty to Manage

The City of London's open spaces are protected under their own Acts of Parliament, brought in to acquire land for the recreation and enjoyment of the public and to protect them from development and enclosure by maintaining their natural aspect.

As a public body managing open spaces, the City of London is required by law to comply with certain duties relating to conservation as set out in section 28G of the Wildlife & Countryside Act (1981, as amended) and the Natural Environment and Rural Communities Act (2006). These require the City of London to take reasonable measures to further the conservation and enhancement of its open spaces.

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Burnham Beeches was acquired in 1880 under the City of London's Open Spaces Act (1878) which sets out the City's duty to protect and conserve Burnham Beeches for public recreation and wildlife conservation 'in perpetuity'. It is further safeguarded by national and international legislation.

Approximately 500,000 visits are made to the site each year. Some people come to the reserve several times a week whilst others might only visit once in their lifetime. Most consider the Beeches to be a very special place and there is a strong sense of it being 'their' bit of countryside. Understandably many visitors remain unaware of the 'bigger picture': the need to manage the site actively in a manner that reflects traditional practice and takes an holistic view of the surrounding landscape.

What Do You Like Most?
"Seeing the wildlife and enjoying the space and walking through the woods"
2009 public consultation



Caring for the Beeches is much more than simply a matter of opening the gates, clearing the litter and mowing the grass. Members of the site's management team are experts in their work, particularly in wood pasture management, conservation grazing and heathland restoration. This continues to influence, and be influenced by, countryside management techniques across the country. Every project carried out at the Beeches has been meticulously planned and researched to ensure that it provides maximum benefit to the site, its visitors and wildlife.

This new plan is the City of London's way of providing everyone with the information they need to understand why, when and how the site will be managed over the next 10 years. It builds upon the achievements of the last plan and forms another small step towards the 500 year vision for Burnham Beeches. The plan is also a practical working document to guide the many hundreds of tasks that will take place on the site over the next decade.



The expansion of the conservation grazing scheme across the Beeches is the 'keystone project' around which all other projects will be delivered. It is likely that it will take many years to achieve and require additional resources to those currently available. However, its success is essential if Burnham Beeches is to retain its special appeal as a National Nature Reserve.

What Do You Like Most?
"Coming somewhere close to home which feels like the middle of the countryside"
2009 public consultation



Achievements during the last plan include:

- ◆ First stage of restoration completed for all old pollards; 3 years of second phases also carried out. Each old pollard now has a work programme for the next 10 years.
- ◆ 873 new pollards created in total; 98 cut for the second time and work programme for the next 10 years completed.
- ◆ Grazed area expanded across Lord Mayor's Drive, from 31 hectares to 43 hectares.
- ◆ Further clearance of secondary woodland in compartment 12 to restore 7 hectares of heath and mire communities.



- ◆ Clearance of *Rhododendron ponticum* almost completed, just a few isolated bushes and some follow up work to be done.
- ◆ Increase in volunteer numbers and hours worked, equivalent to an extra 2.5 members of staff each year.
- ◆ New café, toilets and permanent information point built.
- ◆ Regular newsletter and events programme, also new series of information notes and several larger events with schools e.g. lantern days.



- ◆ Sensory trail launched with sculptures.
- ◆ Implementation of dog strategy.
- ◆ Green Flag and Green Heritage awards since 2004.
- ◆ Completion of the transportation strategy. Several actions completed include the introduction of speed limits, gateway entrances and the part closure of Lord Mayor's Drive.
- ◆ Increased partnership working regarding local planning and planning documents.
- ◆ Developing an emphasis on income generation to improve site services.
- ◆ Extending the car free zone.
- ◆ Improved facilities for all. Increased length of easy access path and obtained Tramper.
- ◆ Voluntary donation schemes set up and car park information provided.



1 Site Description - 1.1.1: location and major features

6



What Do You Like Most?
"Interesting small
paths to explore and
get lost on"
-2009 public consultation

What Do You Like Most?
"A place to relax"
-2009 public consultation

What Do You Like Most?
"Riding my ponies
with no cars"
-2009 public consultation

What Do You Like Most?
"Very well run -
keep it up"
-2009 public consultation

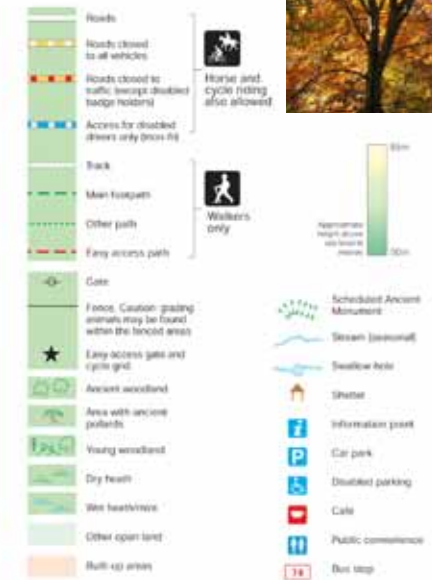
What Do You Like Most?
"Beauty,
variety of walks and
peace and quiet"
-2009 public consultation



What Do You Like Most?
"The changing
colours of the trees"
-2009 public consultation



What Do You Like Most?
"It's free, on the
doorstep"
-2009 public consultation



What Do You Like Most?
"Safe open place for
women and children"
-2009 public consultation



1.1.2 Location

Burnham Beeches is in south Buckinghamshire, in the parish of Burnham, and is next to Farnham Common village. It covers 220 hectares.

1.2 Ownership & Access Rights

Burnham Beeches is owned by the City of London which acquired it in several parts from 1880 onwards.

Burnham Beeches has no formally designated public rights of way but the City of London's Open Spaces Act (1878) allows access on foot to all areas of the City's open spaces, by all persons at all times. In Burnham Beeches access is subject to the byelaws as given on the notice boards on site. These ensure that visitors do not cause damage to the Beeches and do not adversely affect the enjoyment of others. Horse riding and cycling are permitted on tarmac roads.

Under the Countryside Rights of Way (Crow) Act 2000 it is considered to be section 15 land (i.e. it was already designated as open access land).

1.3 Site Status

Burnham Beeches was registered as Common 111 in 1967 under the 1968 Commons Registration Act. A Common has an owner but is often also used by other people who have common rights, for example to graze animals or cut wood. There are however, no commoners for Burnham Beeches.

Burnham Beeches has been a **Site of Special Scientific Interest (SSSI)** since 1951 and a National Nature Reserve since 1993. In 2005 the Beeches was designated as a **Special Area of Conservation (SAC)**, for its beech forests on acid soils. The citation acknowledges the mosses, lichens, insects and other invertebrates that depend on the ancient trees. The SSSI citation also mentions the heathland and valley mire systems that are also considered integral to the character of the Beeches. Burnham Beeches is, therefore, an important nature reserve in European terms; this confers both obligations and enhanced protection.

The boundary of the SSSI and SAC site is not the same as the City of London boundary for the reserve. Swilly Pond was omitted (probably in error) but a considerable area of land belonging to the Portman-Burtley Estate and the National Trust was included.

1.4 Physical Features

The landscape potential of an area is ultimately determined by the combination of soils, drainage and topography found there. The Beeches has a complex geology.

It lies on the Winter Hill gravel terrace; the surface layers consist of material left by melt water – rivers coming from the glaciers of the last Ice Age. These rivers, made up of many small shallow channels, flowed across the whole area and left stones and sand ranging from fine silt particles to large pebbles.

The result is patches of almost pure sand, pure clay and gravels of different sizes all occurring close together.

Fine dust blown off the glaciers collected in hollows, including those created by melting ice blocks, and in time this became patches of loess (fine clay and mineral) soils.

The whole region was then cut through by the River Thames, the course of which has moved south several times, from originally being north of Burnham Beeches to its current position to the south. Each move south cut a new river terrace leaving 'steps' in the landscape which can be seen today.

Under the glacial surface deposits are the old Reading beds (a different type of sand and gravel) deriving from the estuary of the Thames. Under this is older chalk, formed when the area was a shallow sea. This chalk comes close to the surface along Burnham Walk/Victoria Drive.

The topography of the Beeches includes two shallow valleys. One has the major stream, mire and pond system in it, the other is drier and steeper sided with swallow holes along its length.

The soils are generally thin, free draining and acidic (pH2.8-7.0). In areas such as in the less disturbed woodland the organic layers are thicker. In various places an iron pan has developed, impeding drainage and allowing the build up of peaty soils.

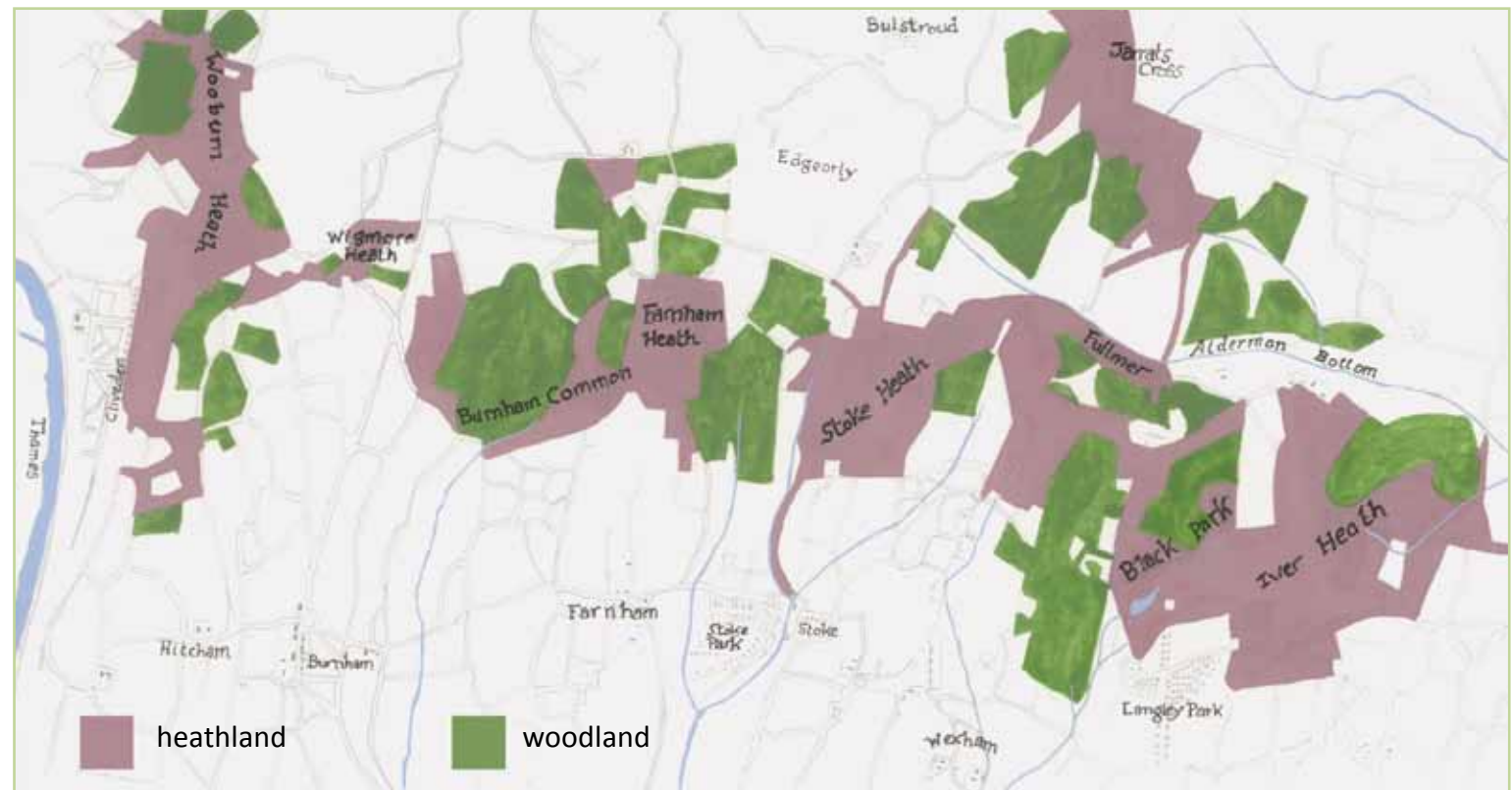
1.5 Cultural Information

1.5.1 Landscape

Burnham Beeches lies within the landscape character area of the Thames Valley within the Thames Basin. In a more local context it was part of the very characteristic landscape of South Bucks, which can be referred to as 'ancient countryside.'

This type of landscape is an interweaving mix of commons and small woodlands with small irregular fields. Typical of South Bucks is that many of the commons and fields were rough heathland and there were many pools and ponds. The pollarded trees within Burnham Beeches are unusual for the area.

What Do You Like Most?
*"Undeveloped and
unsanitised"*
2009 public consultation



The original tract of heathland in south Buckinghamshire, redrawn from a map by Rocque dated 1761



1.5.2 Archaeology

Burnham Beeches is considered to be ancient wood pasture with some ancient woodland within it, clearly bounded by wood banks dating from the 17th century. One earlier bank also crosses the reserve. In the woodland/wood pasture there are abundant pits and hollows, most of which are the results of past quarrying activities. There are three **Scheduled Ancient Monuments**.

Hartley Court moated site and enclosure is the remnant of a medieval moated farmstead. It was probably built between 1250 and 1350 and the ditches and banks are easy to see, with the moat holding water at least in the winter months.

Seven Ways Plain univallate (*having a single bank and ditch*) **hillfort** is a series of earthworks dating between the Late Bronze age to Early Iron Age (8th-5th centuries BC). It may have been a permanent or temporary settlement; in more recent years has been damaged by quarrying and war time activities.

East Burnham Animal Pound is on Crown Lane, not in the Beeches itself. It is a small rectangular red brick enclosure constructed between 1788 and 1796 for the purpose of impounding unmarked cattle, sheep and swine found illegally grazing 'the commons and waste grounds in the manor' (of East Burnham). This Grade II listed building has been repaired several times by the City of London.

1.5.3 Land Use History

Until the 19th century the Beeches was of great importance locally as a source of wood and as grazing for livestock. Rough pasture with a high heathland component probably extended across almost the whole of Burnham Beeches. In the north this was wood pasture with abundant pollarded beech and oak trees on it, to the south it was more open with only scattered bushes of prickly shrubs such as juniper and holly. Across the whole area the number and density of trees probably varied greatly. In the 17th century two parcels of land were removed from the wood pasture and the trees within them coppiced. The site was grazed with livestock until the 1930's.

By the time the City of London acquired Burnham Beeches the need for the grazing and wood produced from Burnham Beeches had declined and the land use was changing. Recreation became much more important, with visitors largely from London. As the grazing declined, scrub grew up and the open aspect and easy access throughout the site was slowly lost.

During the Second World War the site was cordoned off and most was used as Vehicle Reserve Depot No. 2. Prior to the D-Day landings an estimated 10,000 vehicles were stored within the Beeches at any one time; the men lived at a camp built on Seven Ways Plain.

Since the War the Beeches has once again become an important area for recreation and it is now also managed for its high nature conservation value.

1.6 Access and Visitors

1.6.1 Visitor Appeal

Burnham Beeches is highly valued by visitors, who use it mainly for informal recreation such as walking, dog walking and picnicking, and for the children to play and explore.

A detailed count of visitors has shown that it receives over 500,000 visits per year and that 77% of visitors arrive by car. Recent visitor surveys reveal that 80% of visitors live less than 10 miles from the Beeches (although visitors from much further afield are not infrequent).

*What Do You Like Most?
"Love the mixture
of commons, woods
and café"
~2009 public consultation*

A survey focussing on dog walking showed that the main purpose of 30% of visits to Burnham Beeches was to walk a dog. Dog walkers bring, on average, 3 dogs for every 2 dog walkers. This can be extrapolated to show that approximately 575 dogs are brought to Burnham Beeches every day, or 201,000 each year.

Other visitor activities include cycling, horse riding & driving, running and bird watching, all of which are closely governed by the byelaws. Although riding a bicycle or horse off the tarmac roads is not allowed, the expansion of the car free zone has allowed cyclists and riders a safer and more peaceful experience.

*97% of people feel
safe in Burnham
Beeches
~2009 public consultation*



More formal use of the Beeches is made by school groups and recreation groups organising activities such as orienteering and cross country running. The character of the woodland makes it popular with film makers; a strict code helps to closely regulate what the film companies can do.

As part of the development of the management plan a 3 day public consultation was carried out on the Main Common. Nearly 800 people attended and we believe that their comments are representative of the views of local and regular visitors.

The results are supportive of the work this plan sets out to achieve and comments from the consultation have, where possible, contributed to the management plan.

*"Please get some pigs
again and more
grazing animals"
~2009 public consultation*



1.6.2 Access Provision

Although most people come to Burnham Beeches by car there are links to public transport, with bus stops in Farnham Common village only a short walk away. The nearest railway station is Burnham, but Slough and Beaconsfield have better links, being on a direct bus route through Farnham Common.

Under the Open Spaces Act visitors can access the Beeches on foot at all times. The main car park area is at the eastern end of Lord Mayor's Drive, accessible from Farnham Common. This, and other car park gates are shut at night.

Access within the Beeches is restricted for most vehicles but the car free zone is accessible to those with restricted mobility by collecting a zapper for the gate from the office. A 'Tramper' (off road wheelchair) is also available for free loan from the office but must be booked in advance.

A network of surfaced paths allows easy walking and use of push chairs and wheel chairs in the area around Lord Mayor's Drive and to the ponds and café.



There are no public footpaths across the Beeches but the Reserve is linked to other places of local interest and to two long distance paths: the Beeches Way and the Shakespeare Way.

1.6.3 Visitor and Information Facilities

Close to Victory Cross and the main parking area are two attractive buildings housing the public toilets, café and information point, all of which are open daily (except on Christmas Day).

Volunteers at the information point at weekends and bank holidays help visitors by providing information and answering queries. Interpretation boards at Victory Cross and in the small shelters around the Beeches provide information about events and also updates on current issues and news.

There is a sensory trail featuring tactile sculptures inspired by the Beeches around the easy access paths; an audio guide to accompany this is available from the Burnham Beeches office or can be downloaded from the website.

What Do You Like Most?

"I love the trees and walking amongst them, also the sensory trail"

2009 public consultation

Bins for dog faeces are at major entrances and in high use areas; bags are provided here and information regarding dog issues is printed on the bags and on the bins themselves. A dog code has been developed that guides expectations for dog control and management within Burnham Beeches.

A twice yearly newsletter provides regular visitors and those on a mailing list with information about current news and issues and also includes background articles of interest. The newsletter also includes information about events and practical volunteer tasks open to all.

The Rangers run an average of two events each month, these usually have a theme and vary from gentle strolls to more adventurous walks. Other free literature for visitors, available at the information point, includes three self guided trails and a range of Fact Sheets covering issues such as deadwood management, fungi and cycling at Burnham Beeches.

The website provides up to date information about Burnham Beeches, with 'What's New' updated monthly; the newsletters, leaflets, fact sheets, management plan and other documents are available here as well as in paper format from the office.



1.6.4 Education and Research

School and college groups regularly visit the Beeches to learn about management and conservation. Local schools are occasionally involved in arts projects such as the sensory trail and tree dressing days.

Student and other research projects are encouraged and the staff and volunteers also carry out long term monitoring for the benefit of the site and to contribute to regional and national programmes. Examples of these are butterfly transects, moth trapping, vegetation and lichen recording, dust monitoring and the weather station.

Burnham Beeches is a part of the Environmental Change Biodiversity Surveillance Network, contributing to a national picture of ecosystem health and the changes happening to protected sites across Britain.



1.6.5 Other Estate Features

Infrastructure on Burnham Beeches includes fences to contain the current grazing animals and several shelters for visitors that date back to the early 20th century, some of which have been updated more recently. Services such as electrical and telephone cables also run underground in several places. Buildings consist of the information point, café and toilet block on the Main Common, the office and associated barns and seven staff houses. There are numerous small bridges and several stretches of boardwalk to assist visitors.

1.7 Current Use

Under the Open Spaces Act Burnham Beeches is required to be managed for informal recreational activities and for what we now term conservation. Obligations of the status of Burnham Beeches as a SSSI, NNR and SAC, as well as other legal obligations such as the NERC Act require positive management for nature conservation. It is considered that, with careful management and the cooperation of site visitors there need be no major conflict between these two main uses of Burnham Beeches.

In the past the Beeches was an essential part of village life, providing fuel and grazing for livestock. It still supports the local economy, creating opportunities for local businesses and contractors and may even, in the future, once more find a market for its natural resources.

What Do You Like Most?
"Splashing in puddles!"
2009 public consultation



1.8 Biological Features

1.8.1 Communities and Flora

A National Vegetation classification of Burnham Beeches was carried out in 1997 but the consequences of the management over the last 20 years and the nature of the site is that many of these plant communities are intermixed so that it is difficult to draw boundaries between them. Future management will probably increase this trend. The most important and extensive communities are described here.

Wood Pasture

In the past much of Burnham Beeches was managed as wood pasture - land containing trees and grazed with domestic animals or deer. The density of trees can vary from dense woodland to open grassland with scattered trees. Grazing livestock are the key component in maintaining a varied structure of vegetation. It has been shown in many studies that a low density of grazing benefits the majority of animals and plants that occur in woodland.



Beech Woodland

The northern parts of Burnham Beeches are dominated by ancient semi-natural beech woodland on acid soils, with holly and sometimes bramble as a shrub layer. Under the trees there is little vegetation except for wavy hair-grass and mosses but in clearings heathy plants such as heather can be found. Mini successions (the natural change from one habitat into another over time) can be seen where a tree has fallen, with birch trees an intermediate stage between the open ground and beech woodland.

Burnham Beeches is designated a SAC because of its beech woodland habitat. The pollarded trees are the key component of this woodland.

Oak Woodland

Areas of oak can be found within the beech woodland. To the north this is mostly sessile oak (*Quercus petraea*) with an understorey of bracken and holly; many of the oaks show signs of having been coppiced in the past.

Oak, with hazel underneath is also found along Burnham Walk, where the soils are more neutral and there are more spring flowers such as bluebell and wood sorrel. To the south of Lord Mayor's Drive, secondary woodland communities are found along the roadsides, growing on formerly open landscapes. These are now mostly a mixture of pedunculate oak (*Quercus robur*) and a few other tree species with ivy and bramble.



Pollarded Trees

The ancient beech trees at Burnham Beeches developed in a wood pasture system which combined the grazing of domestic animals with the historical management practice of pollarding.

Pollarding - a system of cutting the trees repeatedly for a product - can be carried out on almost any broadleaved tree species. In the Beeches the trees were cut in the winter for wood, used as fuel by the local people. Cutting was done on each tree every 15-25 years in a rough rotation; this repeated management allows the trees to live much longer than trees that have not been cut. The branches were cut back to a point roughly 2.5m above ground level. This allows new branches to grow out of reach



of any grazing livestock that was pastured on the ground around the trees.

Although most of the pollards in the Beeches are beech there are some oak too.

Heathland

A major part of the Beeches south of Lord Mayor's Drive was historically dry heath; this extended underneath the pollards too.

Some areas have been restored in recent years and now give a flavour of the communities of plants found here in the past. Heather is mixed with bushes such as dwarf gorse (*Ulex minor*), petty whin (*Genista angelica*) and juniper (*Juniperus communis*); smaller grasses and herbs like common bent (*Agrostis capillaris*), heath-grass (*Danthonia decumbens*), heath bedstraw (*Galium saxatile*) and pill sedge (*Carex pilulifera*) are found between the bushes.

Grazing by domestic livestock is essential to keep heathland in good condition and stop it reverting to woodland again. Some beetles found here seem to require virtually pristine conditions for long term survival, for example the rove beetle *Acidota crenata*.



Wet Heath

Where the water level is higher (mostly closer to the stream) the dry heath communities blend into wet heath. Cross-leaved heath (*Erica tetralix*) is a common plant in the Beeches, found with rushes (*Juncus* species), sedges (*Carex* species) and oblong-leaved sundew (*Drosera intermedia*).

Mire

In the wettest areas the bog moss *Sphagnum* forms carpets and is interspersed with small pools and drier patches of cross-leaved heath or purple moor-grass (*Molinia caerulea*).

Low levels of grazing benefit the mire by creating variations in structure and stopping the drying out of the habitat by strong growth of purple moor grass.



Open Water

There are three ponds within the Beeches, two of which hold water all year round and have a typical pond flora including white and yellow waterlilies (*Nymphaea alba* & *Nuphar lutea*), bogbean (*Menyanthes trifoliata*) and water horsetail (*Equisetum fluviatile*). Swilly Pond is seasonal and is characterised by grasses, including floating sweet-grass (*Glyceria fluitans*).

There are several small streams flowing through the woodland and the moat holds water in the winter but has very few plants in it.

Grassland

The natural grassland of the Beeches is semi-natural acid grassland; small areas of this can be found, for example, close to the Stag Car Park.

The majority of grassland in the Beeches however is on the Main Common and grass verges. This is generally of poor conservation value because most, if not all, of this has been seeded in the past and mown. It is managed, where possible, to increase its value to wildlife; grazing will help this.



A Varied Plant Structure Benefits Wildlife

Throughout this document we refer to the need to create and maintain a varied vegetative structure. By this we mean a mixture of plants of different heights, denseness and providing a mixture of fine and coarse leaves. It will vary throughout the seasons and, where grazed, according to how it is being grazed.

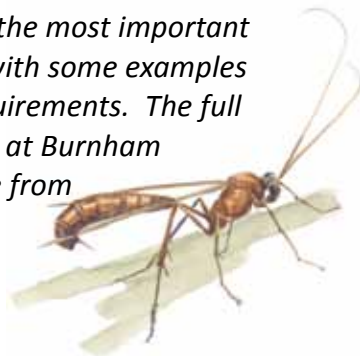
Variation in the structure of plants on a small scale allows a wide range of species to grow, including those that require open, exposed conditions with lots of sunlight and those that prefer some shade and higher moisture levels.

This variation is also important for the animals too. Invertebrates have many different needs, such as open areas to bask in or tall plants on which to build webs. Many species may need more than one type of microhabitat in the course of their life, such as different places to feed and to lay eggs in. Even vertebrates such as birds and reptiles need variation in order to thrive. A habitat with no structural variation, like a cereal field, may be good for a small number of species but it will not support the variety of a naturally varied habitat.

1.8.2 Rare Species

Plants and animals can be given many different designations to identify their importance locally, nationally and internationally. The Beeches hosts a very large number of important species. For example over 60 Red Data Book species have been recorded: these are species that fulfil international criteria for being rare, threatened or vulnerable in the UK. This is an exceptional number for a reserve of relatively small size like Burnham Beeches. There are also numerous Biodiversity Action Plan species.

This plan describes the most important groups of species, with some examples of their habitat requirements. The full list of species found at Burnham Beeches is available from the site office on request.



Biodiversity Action Plan (BAP): a nation-wide scheme to reverse the decline of certain threatened species, resulting from the 1992 biodiversity summit in Rio.

As part of this government initiative, each County has drawn up a local BAP that identifies habitats and species under threat and contains plans to reverse their decline.

Saproxylic Invertebrates

A saproxylic species is one that depends on dead or decaying wood in order to live. This may be because it is feeding on dead or dying wood, or its associated fungi, because it needs special conditions found there such as a retreat or hunting surface. Old pollarded trees are homes to a wide range of saproxylic species because they have abundant dead and decaying wood, and associated fungi, in a variety of different moisture and light conditions. Beech saproxylics are different to those living on oak because of the differences in wood texture and the way that the fungi decay the wood; oak tends to have a higher proportion of beetle species, beech to have more flies, but many different invertebrate groups may be represented.

One of the best surveyed invertebrate groups in the Beeches is the Beetles and some of the long term studies carried out have contributed greatly to our current knowledge. A good number of the scarcer British saproxylic species are found, almost all associated with the pollards. Characteristic species include *Quedius microps*, *Q. situs* and *Stenicmus godarti* (Red Data Book Rare); the latter is also found at Windsor and Epping Forest but is lacking from other potentially suitable sites. The fly *Rainiera calceata* (Red Data Book 1 endangered), whose larvae lives in dead wood, is known at only 7 sites in the UK. The list of fungus gnats is over 250 species, comparable to the New Forest which is many times larger than Burnham Beeches.

Saproxylic Fungi

The main agents causing wood decay are fungi, some of which are rare and threatened themselves. Recent studies at Burnham Beeches indicate that it is equal second among the twelve sites in Britain currently considered the best in the country for their beech wood continuity fungi and equal 11th out of 127 European sites studied. Burnham Beeches is now considered an 'Important fungus area': the site holds significant populations of rare fungal species which are of European or UK conservation concern.

Notable species include the Red Data Book and BAP species 'coral tooth' (*Hericium coralloides*), found on branches cut from an old pollards after restoration work. The BAP species oak polypore (*Piptoporus quercinus*) has also been found; this species is rare in Britain but relatively common in nearby Windsor Forest.



Tooth Fungi (stipitate hynoids)

As well as wood decay species another very important group of fungi are those that are mycorrhizal (living on the roots of certain plants to the benefit of both - the fungus gets starch and helps the plant take up nutrients and minerals). Many of these are very common and abundant but the stipitate hynoid group are all rare BAP species. Five of the possible six species of these have been found in the Beeches in recent years, the other has not been seen since 1958.

Tree hole using bats and birds

The large numbers of holes and hollows in the old trees are perfect homes for tree nesting birds and also for bats. All three British woodpeckers are found as well as many other typical hole nesting species, many of which are BAP species. Six bat species have been recorded at Burnham Beeches; some are just feeding here but others are roosting. All bat species and their roosts are protected by law so it is important to ensure that careful survey work is carried out prior to any tree work.



Epiphytic mosses/lichens

An epiphyte grows on another plant, but is not parasitic – it gets nutrients and water from rain, air, dust etc rather than from the host plant. Old trees generally have different epiphytes growing on the bark than younger ones and two very special plants are found in Burnham Beeches.



The tiny, easily over-looked lichen *Pyrenula nitida* is a Red Data Book species and an indicator of ancient woodland. The slightly larger Forster's knot hole moss (*Zygodon forsteri*) has a very specific habitat, found only on beech tree roots where they rise above the ground and develop a pool of water. Burnham Beeches is a stronghold for this species, only found in three other places in Britain.

Invertebrates relying on grazing

The reintroduction of livestock grazing has enabled some specialist invertebrates to thrive. Several species of fly require grazing animals for their existence, needing dung or the type of habitat structure that grazers create; one example is the endangered *Polietes steinii* that is associated with traditional grazing on unimproved pastures and needs horse dung for the larvae to develop in. Many of the specialist saproxylic beetles and flies also require pollen or nectar as adults and the open habitat created by grazing allows such flowers and flowering shrubs to thrive which could not grow in dense woodland.

Bog Plant Communities

The South Buckinghamshire heaths and mires are important reservoirs for many small plant species that require damp places and the impacts of grazing to thrive.

Recent restoration work on the heath and mire has resulted in several plant species, such as bog pimpernel (*Anagalis tenella*) and oblong leaved sundew (*Drosera intermedia*), growing that have not been seen in the Beeches for very many years.



Carpets of the bog moss *Sphagnum* can be found in the mire areas (several different species occur) and there are many tiny animals and plants living alongside the moss. More obvious examples of specialist heathland plants are the junipers, currently growing and regenerating well.

Reptiles

Good populations of adders, grass snakes, common lizards and slow worm are found in the more open habitats in the southern area. A range of amphibians live in the ponds. These include many palmate newts and there are occasional sightings of great crested newts in Swilly pond.

2.1 The importance of managing the pollards

Areas with ancient beech pollards are rare. In Britain there are just three sites with over 100 such trees and those in Burnham Beeches are particularly fine examples. In a worldwide context, only Romania and the Basque Country have more than just a small handful of these trees and the climatic conditions in these places mean that many of the species associated with the pollarded beech trees there are different.

Pollarding enables beech trees to live much longer than those left unpollarded (maidens): they can live for over 400 years rather than the more normal 250. The aging process, together with the pollarding action gives the trees their characteristic and knobbly shape. Rainwater and fungi slowly break down the dead wood in the trunks of the trees - this does not harm the tree but is a natural aging process. These water and decay pockets provide ideal conditions for invertebrates and the aging process enables species of moss and lichen to live on the bark of these trees rather than younger ones.

Once the process of pollarding has started it needs to be continued. Trees uncut for many years develop very large and heavy branches, become unstable and fall over or fall apart. This is just what has happened in Burnham Beeches.

The pollards were last cut regularly over 200 years ago. This, coupled with the cessation of grazing by the 1930's (leading to new young trees growing around the old ones), means that the branches reach up high for light as well as growing larger in girth. By 1980 many of the old pollards were becoming very unstable. In addition there was no new generation of pollards as the youngest were still probably 350 years old or more.

It was estimated by a forester in the 1930's that at one time there may have been over 3,000 pollards in Burnham Beeches. By 1990 the number had declined to 550 and by 1999 the trees were dying at a rate of approximately 8.5 every year.

Since then a programme of restoration work was started but restoring lapsed pollards was a new science - one that staff at Burnham Beeches were in the forefront of developing. Techniques have been refined over the last 20 years, but we are still learning. The rate of loss of the old trees has now declined to less than 6.4 trees every year. Continuing this work programme, which also includes work to create new pollards for future, is an important part of our work.

In addition, grazing needs to be reinstated to all areas with pollards in order to stop scrub and young trees growing up and stopping light from reaching the old trees.

1: A tree pollarded regularly and in a grazed system.

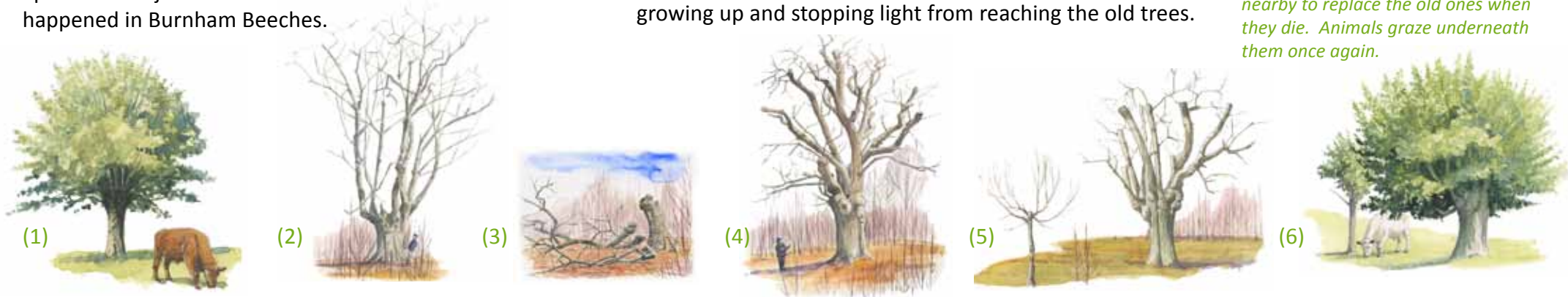
2: A 'lapsed pollard'. It has not been cut for many years: the branches are tall and heavy. Young trees grow around it because grazing has stopped.

3: Wind and the weight of the branches make the tree unstable and vulnerable to wind damage.

4: Old pollards can be restored. First stage of restoration: young trees are cleared from close to the pollard and there is a gentle reduction in the height and weight of the branches.

5: Second stage of restoration: there is a further reduction in height and weight on the branches; a little more clearance of young trees has been done.

6: After several restoration stages the pollard is much lower again and more stable. It is now cut on a regular cycle. New pollards are nearby to replace the old ones when they die. Animals graze underneath them once again.



2.2 Importance of grazing

Grazing is seen by the City of London and Natural England to be **the** critical project to ensure the long term, sustainable management of Burnham Beeches as an SSSI and SAC. The vision to expand conservation grazing across Burnham Beeches is fully supported by Natural England and is seen as the ideal method by which to ensure the reserve's long term viability as a Site of Special Scientific Interest.

The habitats for which Burnham Beeches is famous - wood pasture and heathland/mire - were all once grazed by domestic livestock. There has been a long history of livestock grazing across the area, which can be deduced from the age of the pollards (which must have been developed in a grazed system), the presence of the pound, historical records of species found and writings and pictures describing the Beeches in the past.

If grazing was a fundamental force, shaping the Beeches for centuries, then the last 60 years without grazing created many of the problems of loss of habitat and diversity that we face today. However, the reintroduction and subsequent expansion of the grazing since 1992 has already reaped benefits.

In the areas that are now grazed there are plants not seen for over 80 years, grown from seed left in the soil now that grazing animals have created the open, light conditions and varied ground surface they needed to grow and thrive. The growth of 'weedy' woodland trees like birch is kept in check and a diverse mosaic of plant species and structures are created benefitting many invertebrates. Tree regeneration is not completely stopped however: shrubs and dead wood protect some seedlings that are able to grow into mature oak and beech trees.



Species such as juniper grow and regenerate better in these environments, as can already been seen on the heath, and there is a whole new habitat for the specialist plants and animals that rely on herbivore dung.

Grazing is undoubtedly the best management option for these areas because it creates a more varied structure of vegetation than mechanical methods of management, such as mowing. It is also more sustainable: cheaper in the long run, and less polluting.

Expanding the grazing across Burnham Beeches presents significant challenges, especially in relation to traffic management and poorly controlled dogs. However, there are clear benefits to visitors as the livestock open up the landscape enabling better views and improving access, while the animals are an attraction in themselves.



2.3 The implications of climate change

The Burnham Beeches we see today is the consequence of centuries of active management in a relatively stable environment, but the future climate is uncertain.

Current predictions suggest that tree species such as beech and oak may decline in health whilst others, present today in lower numbers, such as rowan and whitebeam may fare better. The consequence for this may be a more scrubby and open woodland with lower tree canopies.

What Do You Like Most?
*"The quiet woods
and wildlife and
vibrant colours"*
2009 public consultation

Heathland communities, today dominated by ericaceous species like heather, are also predicted to change to a more grass dominated community.

Trying to ensure Burnham Beeches is robust in the face of these changes will be a challenge, especially when it is difficult to be certain about the future climate. Increasing structural diversity (achieved through grazing) creating pollards from a wider range of species, monitoring changes in tree health and vegetation, working to reduce the fragmentation of habitats locally and carrying out specific research projects are all aspects that need to be considered in order to help this process.



2.4 Reducing fragmentation and pollution

Increased development in the area around Burnham Beeches has had a huge impact in recent years. Two hundred years ago the Beeches was a wooded and heathy common, within the genuinely rural landscape of south Bucks; now it is a green island within a largely urban environment.

Modern life has a clear impact on the Beeches as the population of the surrounding area has risen and increased car use helps people from near and far to access the area more easily. Increased housing density puts pressure on the availability of water from the ground and increases the air, light, noise and water pollution. An increase in the number and size of cars causes yet more pollution, from exhausts and tyres, as well as physically eroding the road sides.

The consequence is a reduction in the space available for wildlife and the fragmentation of those remaining areas. These small fragments are then subject to greater pollution and general erosion due to the high concentration of people living nearby. Linking small areas and especially linking biodiversity hot spots such as Burnham Beeches and other local SSSIs is of high importance to maintain viable populations of species and enabling them to spread throughout the region.

What Do You Like Most?
*"Lack of traffic; the
scenery, relative
peace and quiet"*
2009 public consultation



It is vital that the City of London works with neighbouring land owners to try to reverse this fragmentation and provide additional recreation areas where possible. This is of increasing importance and urgency in a world facing uncertain climates in the future.

Trees and other plants and animals at Burnham Beeches are under increasing stress from pollution, changes in ground water, climatic changes and the direct impacts of people; this can already be seen. The old trees are particularly vulnerable to stress and an important part of the future planning of the Beeches will be to reduce these stresses.

2.5 Ensuring the enjoyment of visitors and enhancing their links with the nature reserve

Under the ownership of the City of London Burnham Beeches has always been a popular place to visit, and the beginning of the 21st century is no exception. Open access on foot is appreciated by regulars and occasional visitors alike.

Ensuring that visitors feel welcome, valued and safe and have information readily available to assist their visit is vital. Helping them to look after Burnham Beeches is also important, whether this is by actively volunteering or simply not causing damage.

The iconic habitats for which the Beeches is well known are however, not immune from damage. Old trees are fragile and the compaction and nutrient enrichment of soils changes the flora and adversely affects tree health. The current level of visits (over 500,000 each year) has potential to cause immense damage if not carefully managed.



Simple measures, such as improving paths and combining all visitor facilities on the Main Common, enhance visitor enjoyment and help to reduce damage to sensitive areas.

What Do You Like Most?
*"Seeing friends,
watching the dog play"*
2009 public consultation

with other visitors' enjoyment of the site and even harm the reserve itself. Although the majority of dogs are well behaved and kept under control, in accordance with the bylaws, 20% of visitors, a significant proportion, report that dogs have detracted from the enjoyment of their visit.

Dogs (even on leads) also disturb wildlife and a minority have injured livestock, with some stock needing veterinary treatment. Dog faeces are an additional problem: if not picked up by the owner, they bring substantial quantities of undesirable nutrients, other chemicals and diseases onto the reserve. In a 2009 survey 46% of respondents felt that dog mess was a problem. Urine also adds unwanted nutrients and cannot, of course, be collected.

Every dog will have an impact but this can be minimised by ensuring that dog walkers are aware of the issues and act responsibly.

The Burnham Beeches dog policy, drawn up with help from regular dog walkers, needs to be regularly reviewed and activities and information clearly available for visitors. The aim is to achieve that the correct balance between recreation (enjoyment by **all** visitors) and the conservation objectives is achieved.

What Do You Like Most?
*"A great escape for
all the family"*
2009 public consultation

Dog walking is a popular activity but there is the potential for this to interfere



Increasing numbers of people are likely to be living within easy reach of Burnham Beeches in forthcoming years. The challenge will be to accommodate their needs for green space and their love of the Beeches without destroying those aspects that they come to see and causing unavoidable and irreversible stress on the species and habitats of European importance.

Bringing home to regular visitors the cumulative effects of small impacts will be a challenge; one of the ways to do this may be to strengthen their understanding of the interdependence of people and nature and make the Beeches integral to their everyday living.

Burnham Beeches was once an essential element in the lives of local people as it helped to provide their everyday needs. In the future production may once again be a part of the community, helping to provide fuel and food.

Changes in climate will make shady places like Burnham Beeches ever more important in our lives and there are many ways in which the reserve contributes to **ecosystem services**.

3.0 Burnham Beeches, 2500 AD

The objectives, targets, actions and projects detailed on pages 25 - 41 all work towards creating the landscape illustrated on the facing page. It will have the following qualities.

3.1 Vision of Burnham Beeches in 500 years

Burnham Beeches, conserved and protected for ever, will be a first class, sustainable public open space and a site of international conservation importance.



One part of a larger green landscape

Burnham Beeches is part of a larger landscape, linked by a network of wildlife areas that encircle London and stretch across the country. These are maintained by organisations and communities that safeguard the environment. Harmful pollution is a thing of the past – all transport systems are sustainable. Quiet roads surround the Beeches and other green spaces, so that the local community can walk, cycle or ride in safety.

Outstanding habitats maintained by grazing

Burnham Beeches is an attractive and varied landscape, rich in wildlife. It is a mix of open heathland, dense woodland – and everything in between. Livestock graze across the site under pollarded trees of all ages. Neighbouring fields provide additional land when grazing numbers on-site need to be reduced. The wood pasture system provides a sustainable source of fuel and food for the local community.

A local community working together

The local community are proud of the Beeches. Visitors work with the City of London to care for 'their' heritage, ensuring that access is managed to ensure that people can enjoy the site without detracting from its natural character. The Beeches is safe and provides opportunities for informal recreation and to learn about the past, present and planned future of the Beeches in a variety of different ways.

95% of respondents agreed with our long term vision for Burnham Beeches

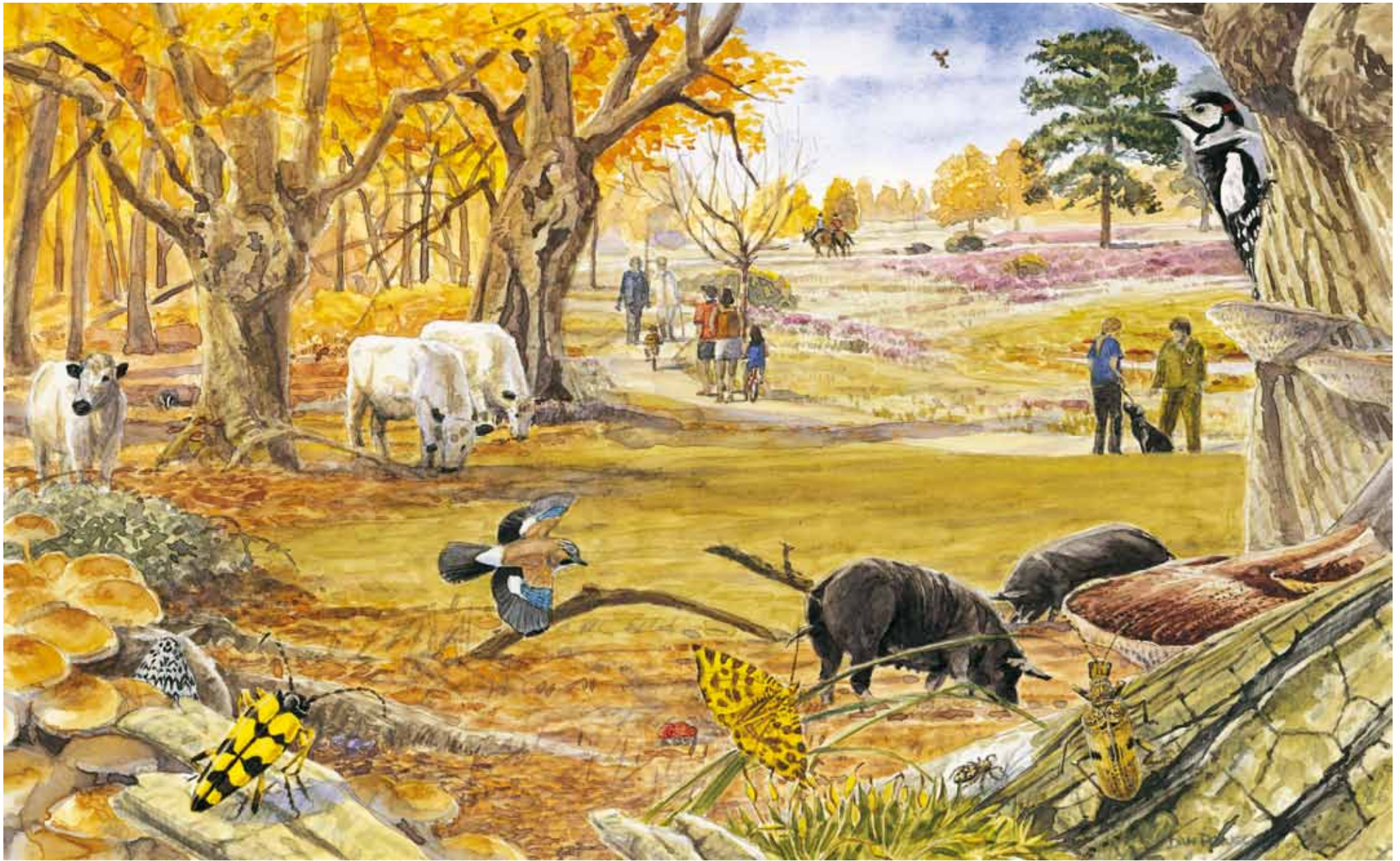
2009 public consultation



The future is secured

The Beeches is financially secure, renowned internationally for its work and good practice in conservation management. The site adapts appropriately to external influences such as climate change and continues to contribute to international debate and action on major ecological issues affecting the planet.

The following sections of the management plan outline the next steps in our work to turn the vision into reality.



Objectives and methodology

The targets and actions for the next ten years outlined on the following pages will be monitored throughout the plan and, if necessary adjusted. We aim to follow sustainable working practices in order to minimise any harmful impact of our activities upon the environment and others.

The works that will be carried out on Burnham Beeches all contribute towards meeting three objectives.

Objective 1: Conservation

To restore and maintain the key habitats of Burnham Beeches to favourable condition.

Objective 2: People

To encourage the sustainable use of Burnham Beeches for the recreation and enjoyment of the public whilst promoting public involvement and fostering greater understanding of the reserve.

Objective 3: Estate assets and legal issues

To fulfil all legal obligations and to maintain estate structures in good condition.

4.1 Objective 1: Conservation

To restore and maintain the key habitats of Burnham Beeches in favourable condition

Habitats and species cannot be managed in isolation because of the interdependence between the various elements. In general, the stronger the site is in terms of habitat vigour and diversity, the more resilient it will be to the impact of outside influences such as climate change, pollution and habitat loss in surrounding areas.

The two key elements of Burnham Beeches are the pollarded trees and the heath and mire communities. These are interlinked because the heathland forms the ground vegetation under the pollard trees and the whole area should be grazed as part of the wood pasture system. The open land varies between dry heath with heather (*Calluna*) dominated communities, wet heath with an abundance of cross-leaved heath (*Erica tetralix*) and valley mire systems with high sphagnum cover.

Acid grassland is also a key component but in places it has been seeded with non natural species. Blocks of true woodland largely reflect areas of ancient coppice, both beech and oak or, along Burnham Walk, hazel dominated communities on more neutral soils.



4.1.1 Pollarded trees & associated species

Old pollards

As of 2007 there were 348 old beech pollards and 78 oak alive. Our aim is to keep the old pollards alive as long as possible. To achieve this the crowns need to be reduced as close as possible to the top of the original *bolting* (swollen part, where the original cuts were made); this may take many years and several different stages of reduction and in reality this may never be achieved for many trees.

As well as reducing the weight of the branches it is essential to ensure that each tree receives sufficient light and, as the height of the crown is reduced, more young trees may need to be cut to achieve this.



Over time the small clearings around each pollard will start to coalesce and, as the grazing area increases these will become more open and the landscape in all areas of the Beeches with pollards will become more like an active wood pasture than dense woodland, with scattered clearings.

All old pollards have now had their first stage of work carried out and some the second. A detailed work programme was drawn up in 2007 listing which year each tree needs to be worked on and what needs to be done.

GUIDELINES FOR CARRYING OUT THE WORK

Preparation for working on old pollards is carried out between September and December: this primarily involves clearing younger trees. The old trees themselves are cut between January and March. If the summer has been a drought it may be desirable to leave the work for another year.

Due to the winter work programme, most of the young pollards are cut during the summer, between June and September. Winter cutting may be better, especially for oak, if there is scope in the work programme.

Large pieces of wood from the pollard work should generally be left close to the trees or made into habitat piles. Smaller brash can be chipped or burnt on the burning platform; some can be used for dead hedging to prevent compaction around the roots of trees; this should not be placed on exposed roots but in a ring around the tree.

All trees should be surveyed for bat roosts in the late summer prior to cutting and on the day of work carried out (according to the **bat policy**).

Piles of deadwood should be constructed from surplus wood produced and should be as large and solid as possible and located away from heavily visited areas, or out of sight if possible. No dead wood should be removed after 1 May. See the **deadwood policy** for more information.

The aim is for each tree to be worked on at least every 15 years. Grey squirrel damage is a significant constraint on the successful growth of old pollards, and one that historically they would not have faced. Targeted control needs to be carried out to reduce the long term reduction in viability of these trees due to squirrel damage.



Burnham Beeches should retain its position as a beacon in the European context as an example of ancient woodland with pollards and recognised internationally as a source of expertise in veteran tree management and conservation.

Targets for Old Pollards

Target: approximately 50 old pollards to be managed each year, according to the work programme.

Achieved by: carrying out the work programme and updating when required; making a quick check of all trees for emergency work every 2 years.



Target: ensure that the techniques used to restore the veteran trees are the best possible.

Achieved by: keeping at the forefront of knowledge regarding work on old trees and undertaking experimental techniques (not necessarily on old trees themselves) to evaluate potential options and disseminating results of work as widely as possible.

Target: reduce squirrel damage on pollards to a minimum.

Achieved by: targeted squirrel control and regular evaluation of its impact.

New pollards

The aim of creating new pollards is to provide continuity of habitat and historical context for the future. It is hoped that, in time, the new pollards will act as replacements for the old ones. In the last 25 years 873 new pollards have been created. The majority have been beech but a range of other native species is represented. The aim is for 1000 new pollards in total and for them to be cut approximately every 10 years. The new work programme, designed in 2009, is underway and increasing numbers of trees are now being cut for the second time. As with the old pollards it is essential to make sure they have enough light, which will be achieved partly by grazing. Again, squirrel damage has the potential for a significant impact on the viability of the trees.

Target: ensure that there is a minimum of 1000 healthy 'new' pollards in total, from the range of species represented at Burnham Beeches.

Achieved by: creating approximately 60 new pollards in each of the first three years of the plan and subsequently making replacements for any that die.

Target: cut all new pollards approximately every 10 years to keep in cutting cycle.

Achieved by: carrying out the work programme and updating it when required.

Wood pasture around Seven Ways Plain

Seven Ways Plain hill fort consists currently of fairly dense woodland with abundant old and young pollards; it was formerly wood pasture. Work has started to increase the openness here to benefit the monument, the pollards and the ability of the public to appreciate the monument; this should continue.

Target: complete the plan for restoring wood pasture on Seven Ways Plain and surrounding area.

Achieved by: updating the plan if necessary, and carrying out the work using pollarding and heathland restoration guidelines.

Wildlife trees

The old pollards are clearly of biological value and are all tagged and identified. Within Burnham Beeches there are other old and valuable trees but these have not yet been identified. Whilst it is not realistic, nor desirable to be able to carry out practical work on every such tree, it would be helpful if key examples were recorded and marked on maps.

Target: identify key wildlife trees other than old pollards and mark on maps.

Achieved by: a survey of wildlife trees.

Dead wood

Saproxyllic species are one of the most important species suites in Burnham Beeches and the reason for its European designation. Many of the specialist species require decaying wood within live trees but others will happily live in wood piles and wood on the ground. Standing dead trees and dead branches in the crowns of trees are also very important. Keeping a high amount and varied types of dead wood within Burnham Beeches is essential.



Target: Burnham Beeches to have at least an estimated 40 m³ of dead wood per ha on the ground and more than 50 standing dead trees over 40 cm per ha.

Achieved by: carrying out a survey every 10 years and ensuring more is retained if necessary, whilst bearing in mind the tree safety policy.

Target: Burnham Beeches to always have a good variety of types of dead wood.

Achieved by: dead wood piles and different types of dead wood to be left as a result of other habitat work; creative ways of doing this to be continually explored. Trees that would be felled as part of other work to be veteranised where appropriate.

4.1.2 Woodland

The two blocks of semi-natural ancient woodland have not, in general, been managed intensively in recent years and the aim is to continue with minimal intervention where the natural woodland process can continue with minimum disturbance.

The remnants of old beech and oak coppice stools and the presence of remnant hedges on old wood banks indicate that this has not always been the situation. Restoration of this ancient coppice is likely to be difficult because of the condition of the stools; starting new adjacent areas may be more productive.

It is uncertain if the hazel was ever formally coppiced or if the stools are naturally developed but a limited programme of coppicing will help retain a network of clearings where the soil type encourages a different range of plants to those found elsewhere.

Invasive rhododendrons, widely planted in the past, became a problem by out competing native ground flora. Recent clearance has severely reduced their abundance but checks will need to be made to ensure they are all successfully removed.

Natural regeneration of beech is generally good within the Beeches but an assessment of the age structure of the beech trees would be useful to determine any gaps and potential future issues.

Target: create a new trial oak coppice area. < 0.5 ha.

Achieved by: scrub management on McAuliffe's Drive. Protect using dead hedges or more formal fencing for first few years if necessary.

Target: explore the feasibility of creation/ restoration of beech coppice and beech on some hedge banks. Trial if appropriate.

Achieved by: researching work carried out in other parts of the UK.

Target: cut one plot of hazel coppice every other year (those already cut once or more). < 0.5 ha and protect with fencing or brash.

Achieved by: updating and reviewing the coppice plan; protecting using dead hedging or more formal fencing if necessary; providing opportunities for watching wildlife here, if possible.

Target: eliminate Rhododendron completely from Burnham Beeches by 2012.

Achieved by: ensure follow up treatment of all areas; review the need for a continuation plan after the current one has finished.

Target: establish the age structure of beech trees.

Achieved by: carry out fieldwork and analyse data.

4.1.3 Heathland & Mire

The southern part of Burnham Beeches was formerly an open landscape, maintained by grazing livestock, but lack of grazing over recent decades has resulted in growth of secondary woodland over most of it. A series of projects over the last 25 years has demonstrated that restoration is possible but that ongoing management is needed to restore and then to maintain it in good condition. Birch seedlings and bracken in particular need regular attention.

The legacy of several small scale clearances is a series of small woodland belts that break up the area; these need to be removed to restore the overall feel and to make ongoing management easier. In addition it is desirable to extend the open habitats so that previously cleared/thinned areas near the Stag and the Juniper Heath areas are linked.

Extending the heathland habitat to the roadside areas increases the extent of this important habitat and will allow easier management of tree safety work. It will be a refuge for visitors walking around the road that feels open and safe with good visibility on either side and create a view of the reserve from outside, increasing the sense of experiencing somewhere special.

Maintaining a diversity of habitat including all successional areas may require scrapes and hollows to be made by hand at intervals. Scrub is a valued habitat for many species of bird, mammal and invertebrate but should be encouraged largely along the edges of the open areas. It will need regular cutting to keep it at an ideal height.

*What Do You Like Most?
"Love the duckboards
over the mire"
2009 public consultation*

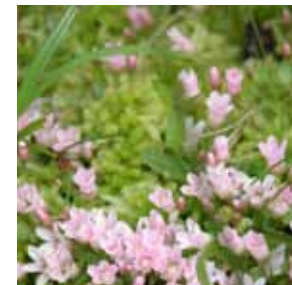
Guidelines for work (heathland/mire restoration and maintenance)

It is anticipated that the work will require a mixture of different methods. Some can be carried out with staff/volunteers while others may require large machinery. Tree felling and major mechanical work should be carried out between the end of October and the end of February with the following exceptions:

- ◆ Bracken control should be carried out in July/August after a check of the area for late ground nesting birds.
- ◆ Weed wiping should be done in June when it is most effective but great care should be taken to avoid ground nesting birds. To minimise the risk to reptiles it should be done on a hot day (so they can quickly move away).
- ◆ Manual clearance of young, regenerating birch can be carried out in midsummer (August) as long as care is taken to avoid any nesting birds with second broods.

All blocks of trees to be surveyed for bat roosts before clearance work, following the **bat policy** protocols. Surveys for reptile hibernation and egg sites should be carried out in clearance areas the year before works are undertaken.

Some trees should be retained: these should ideally be fruiting and flowering trees such as rowan, whitebeam and hawthorn, or occasional large oaks. Willow and aspen are valuable for wildlife and some must be kept. Regrowth from stools and suckers are readily browsed and may need protection such as dead hedging for 2 -3 years. Some dead wood should be also be retained, ideally stacked so not to hinder any future work. Stumps of deciduous trees should be treated with herbicide or removed by grinding.



Target: complete the restoration of an open landscape in the southern part of Burnham Beeches by 2018.

Achieved by: selective felling of secondary woodland whilst still leaving individual landscape and wildlife trees and carrying out follow up treatment as necessary.

Actions: remove remaining retained woodland belts; complete the thinning/ removal of trees between Stag and Juniper Heath and thin trees along roadside between Beeches Road and Dell car park. Expand some existing open areas.



Target: manage the heath/mire system to be as follows.

Vegetation targets for overall heathland composition of dry heath to be:

10-25% dwarf ericoid shrubs (heather or cross-leaved heath)

<10% bracken

<5% bramble, broom and gorse

<25% Wavy hair grass

11-30% desirable plants other than grass or heather

5-10% bare ground

<1% undesirable species (thistles, nettles, ragwort)

Vegetation targets for overall composition of wet heath/mire to be:

>10% sphagnum

No upper limits set for rushes, sedges and other desirable plants

<30% purple moor-grass

<5% bracken

<5% bramble

<5% birch

Achieved by: monitoring the vegetation structure and adjusting its management accordingly. This might consist of changing the grazing regime or mechanical work.

Target: scrub on heath and mire to be limited to between 1% and 5% of vegetation, varied in structure and with no more than 15% of the same age.

Achieved by: programme for birch removal in open areas to be drawn up and carried out (with stumps treated) no area to have birch older than four years.

Scrub programme for remaining areas to be updated and implemented.

Bracken to be controlled by cutting, rolling or spraying; scrapes and peat cuttings created to make small pools.



4.1.4 Grassland

Apart from small patches of acid grassland (covered under 4.2.3. above), the main area of grassland in Burnham Beeches is the Main Common that has been sown and previously managed for recreation. Although this gives the impression of a recreation area as one enters the Beeches the current mowing regime for this area is designed to maximise conservation value as well as recreation.

Paths are only cut before 30 June; the southern and eastern sides are cut on a three year rotation. Some verges along roadsides are mown to ensure good sightlines for traffic and visitors crossing roads. The mowing regimes may need to be altered as the grazing area is increased and it would be desirable to alter the entrance from Beeches Road to create a better impression i.e. one more in keeping with the status of the site as a nature reserve.



Target: to manage the Main Common and verges at road junctions both for wildlife value and for recreation.

Achieved by: continuing to manage the Main Common and sightlines using the current mowing programme and guidelines in the Higher Level Stewardship (HLS) agreement until the grazing expansion is implemented, then review as necessary; trying to increase the nature conservation value; scrub control around Victory cross.

Explore simple options for the design of the entrance to Burnham Beeches to make it more welcoming and representative of a nature reserve by 2015.

4.1.5 Ponds

Of the three main ponds in the Beeches, two have concrete outflows that are not in keeping with their wildlife and nature conservation values. Any changes will however need to ensure that the structures are safe and do not make any significant alterations to the hydrological levels up stream of them. Both ponds had silt removed from certain areas over 15 years ago and, despite subsequent small scale removals this needs reviewing: more work may be required.

Both ponds regularly suffer from introductions of exotic species (terrapins and goldfish for example) and are at risk of colonisation by invasive plant species. All such species should be removed when found and the risk of future introductions reduced if possible.

Target: improve the visual, safety and wildlife qualities of the ponds.

Achieved by: surveying the outflows of Upper and Middle Ponds and carrying out any improvement works necessary and possible; drawing up a plan for silt and vegetation removal and carry this out; ensuring agreement of Natural England for any changes; removing any exotic species and carrying out publicity campaigns to try to prevent further introductions.

4.1.6 Maintaining habitats through grazing

Wood pasture, heathland and mire all need to be grazed in order to get them into favourable condition and then maintain them. Livestock have been reintroduced to Burnham Beeches in the last 20 years and low density grazing with cattle, ponies and pigs now takes place on 43 hectares of the Reserve.

As stated earlier, the benefits of grazing can clearly be seen in the habitat structure and the positive responses of key plants and

*71% want to see
as much of
Burnham Beeches
as possible grazed*
~2009 public consultation~

animals; the livestock have also been popular with the public and the more open structure that they create is an attractive landscape to walk through that feels safer to visitors.

The aim within the next 10 years is to expand this pastoral landscape across the whole of the Beeches, perhaps increasing the number of cattle/ponies to a maximum of 40. This will also require a review of how the livestock are managed, and there may be options for meat production. As the area grazed increases, more roads will be drawn into it, enabling traffic calming measures to be incorporated. The separate document 'Restoring the Pastoral

*85% want cattle grids
installed on roads*

~2009 public consultation~

Landscape at Burnham Beeches' gives more details.

Target: fulfil wood pasture guidelines in Higher Level Stewardship agreement.

Achieved by: grazing current wood pasture areas; looking after stock & adhering to guidelines concerning supplementary feeding etc.

Target: expand the area currently grazed to create a pastoral landscape across Burnham Beeches.

Achieved by: implementing the actions outlined in 'Restoring the Pastoral Landscape at Burnham Beeches'; reviewing success via grazing impact assessments.



4.1.7 Actions for individual species

As a general principle the management of Burnham Beeches tries to concentrate on habitats rather than individual species. However, there are situations when work does need to be targeted at species. This may be to encourage certain key species or to discourage the growth of invasive/introduced species that threaten the survival of native ones.

Target: no non-native and/or undesirable plant species within Burnham Beeches.

Achieved by: removing all turkey oak, Japanese knotweed, goldenrod and other undesirable species (including aquatics) as they are discovered.

Target: remove larch plantation at Towerwood and restore to native species or those that could be tested for their positive response to climate change.

Achieved by: felling trees and replanting or letting natural regeneration happen.

Target: promote the growth and survival of BAP (see p.16) and certain key species (junipers, *Sorbus thuringiaca*, hazel dormouse, *Zygodon forsteri*, keeled skimmed dragonfly) by checking and, where necessary, periodically carrying out positive management.

4.1.8 Recording, monitoring & research

Throughout our work it is important to record actions that are carried out and to evaluate the success of techniques undertaken. In addition long term monitoring is especially valuable because of predicted changes in climate that may have profound implications for our species and habitats.



Burnham Beeches fulfils an important role because it is already a contributor to many national monitoring programmes: the data gathered informs not only the work carried out on the reserve but also work across the country. Research projects contribute to the information available about Burnham Beeches and can influence activities beyond the Beeches too.

Examples of desirable projects include studying the impacts of pollard restoration and grazing on other organisms, studies of the pollards and those on key species such as grey squirrels and wood ants. The inventory of species is currently well advanced but there will be a need for a rolling programme of review in future years.

Information about Burnham Beeches can be requested by members of the public and, in addition there is an obligation on local authorities to provide biological information. Much of this is held at Burnham Beeches on a RECORDER database.

Target: continue long term monitoring of key attributes.

Achieved by: undertaking actions outlined in the 'Monitoring and Research Plan' and revising this review every 3 years; continuing to be a part of the Environmental Change Biodiversity surveillance network; continuing to assist with monitoring projects carried out in relation to development and linked to appropriate assessments; continuing to encourage research projects when suitable subjects or opportunities arise; recording works carried out, especially those related to HLS grants.

Target: ensure species information is up to date and disseminated as required.

Achieved by: casual recording of species information; commissioning specialist surveys for key species/groups; keeping RECORDER up to date as far as possible; regularly exchanging data with local records centre.



Target: reduce any negative impacts of wood ants as far as possible.

Achieved by: evaluating the impact of wood ants on the other wildlife at Burnham Beeches and carrying out any recommended actions.



Target: avoid damage to key species and recording plots.

Achieved by: maintaining up to date operational maps to inform practical work featuring key monitoring points (such as lichen quadrat locations) as well as static rare species and broader areas of interest.

Target: keep abreast of climate change issues and impacts on Burnham Beeches, mitigate or adapt where possible.

Achieved by: keeping a watching brief on work carried out elsewhere, including the City of London Climate Change Adaption Plan; commissioning any relevant projects and experiments relating to Burnham Beeches.

4.1.9 Buffer land

Buffering can help reduce the impacts of landscape fragmentation. This may be achieved by acquiring land on the fringes of Burnham Beeches (and which also may be used in other ways, such as layback land for grazing animals) or influencing neighbouring landowners to manage their land with nature conservation objectives in mind.

It is also important to continue and strengthen the close dialogue with planning authorities and other bodies whose decisions might have an impact upon Burnham Beeches



Target: comment on local planning issues that have the potential to negatively affect the Beeches and encourage those that reduce the fragmentation of green spaces around Burnham Beeches.

Achieved by: monitoring and responding to all planning applications that might have an impact upon Burnham Beeches, either alone or in combination and seeking decisions that secure the long term vision for Burnham Beeches; contributing actively to the local Core Strategy and similar documents; taking every realistic opportunity to help create buffers for Burnham Beeches.

Target: work with partners towards a network of green spaces linking Burnham Beeches to the wider countryside.

Achieved by: working with other organisations.



4.2 Objective 2: People

To encourage the sustainable use of Burnham Beeches for the recreation and enjoyment of the public; to promote public involvement and foster greater understanding of the reserve.

4.2.1 Access and recreation

Burnham Beeches is visited by people from all over the world and remains an important part of the City of London's network of green open spaces accessible to the people of London.

Surveys have shown that the majority of visits are made by local people living within 10 miles; it is an important part of the Buckinghamshire green spaces. It has been estimated that over 500,000 visits are made each year and at least 34% of visitors have one or more dog.

What Do You Like Most?
"Amount of land to explore and sometimes get lost in!"
2009 public consultation

Burnham Beeches will always be a place for quiet, informal recreation. Although it is not, for example, an appropriate place to have a formal playground, some facilities are provided to enhance enjoyment. Access for the less able is also encouraged.



Target: ensure an accurate count of annual visitor numbers are obtained (information used to guide access strategies).

Achieved by: automatic car counters and calibration every 10 years through manual counts and checks.

Target: establish levels of visitor satisfaction.

Achieved by: a questionnaire every five years (if no other public consultation is held) and actions taken from it where appropriate; Greenstat or a customised alternative.



It is important that visitors enjoy the time they spend in the Reserve, but it is also important that their impact is as light as possible. The actions of some visitors can detract from the enjoyment of others if not carefully managed.

Target: service key visitor needs.

Achieved by: café open at least 360 days per year; toilets well maintained and open at least 360 days per year; car parks on Lord Mayor's Drive and outside the Stag to be well maintained; entrances and gates to be well maintained and providing clear information.

Target: ensure that Burnham Beeches is perceived to be clean and well presented.

Achieved by: providing and servicing recycling bins in most popular areas;

encouraging people to take their litter home; encouraging recycling; removing fly tipping; picking up litter weekly and when found. Employing a specialist part-time member of staff to lead on waste clearance and recycling issues.



Target: produce an access strategy.

Achieved by: reviewing access strategies at other sites and ensuring it includes:-

- ♦ ideal visitor numbers,
- ♦ erosion control,
- ♦ access restrictions or honey pots,
- ♦ maintenance of access infrastructure,
- ♦ improving access for cyclists, horse riders and carriage drivers,
- ♦ site opening and closing,
- ♦ visitor counts,
- ♦ byelaw enforcement and links to the interpretation,
- ♦ transport and dog strategies,
- ♦ creating opportunities for donations.

Use Green Flag criteria if possible.

Target: encourage the use of Burnham Beeches by the less able.

Achieved by:

- ♦ maintaining easy access paths in good condition;
- ♦ providing and maintaining benches; encouraging and promoting the use of the 'Tramper';
- ♦ administering the 'zapper' access to the car free zone.

Target: limit erosion by visitors wherever necessary.

Achieved by:

- ♦ surfacing key paths using gravel from the site quarry and maintaining in good condition;
- ♦ use of dead hedging or other barriers around sensitive areas such as old trees and maintaining these in good condition;
- ♦ maintaining bridges and boardwalks;
- ♦ encouraging the use of tarmac roads for walking/cycling;
- ♦ continuing the focus for visitor services on the Main Common area as a 'honey pot';
- ♦ investigating the feasibility of a study on the carrying capacity of Burnham Beeches.

Target: reduce car crime and antisocial behaviour and limit the impact of car parks.

Achieved by: reviewing car park locations and gate closing times other than at Lord Mayors Drive; liasing with police.

Target: limit as far as possible the negative impacts of dogs on other visitors and on the reserve.

Achieved by:

- ♦ carrying out research and consultation to keep up to date with best practice and legislation;
- ♦ enforcing and regularly reviewing the dog strategy including - providing and servicing dog poo bins, encouraging responsible dog ownership, implementing new initiatives, considering more dog free areas;
- ♦ reviewing legislation regarding dog fouling;
- ♦ surveying to monitor progress.

Target: investigate ways of making the byelaws more relevant to the 21st century.

Achieved by: evaluating the issues/problems; investigating the procedure to review byelaws (and implementing if necessary); rewrite into plain English; hold annual refresher for staff.

Target: prevent all removal of fungi except for scientific study.

Achieved by: implement the fungi picking policy and update regularly.

4.2.2 Interpretation, education and promotion

The popularity and location of the reserve presents an ideal opportunity for informal interpretation and formal education. In the past, methods of interpretation have included guided walks, events and formal talks. Improved technology means that new methods can be tried, including literature available on the website and by email, audio trails and tactile boards.

The interpretation provides information to visitors; it does not aim promote the reserve to wider audiences because a substantial increase in visitor numbers would be neither sustainable for the site nor manageable with the current level of facilities.

One easily overlooked but invaluable aspect of interpretation is the regular contact between staff and visitors: a regular staff presence offers both reassurance and a point of contact for many people. Targetted information is also essential to support and back up specific projects.

Target: produce information and interpretation relevant to the needs of both visitors and the reserve.

Achieved by: implementing the interpretation strategy and reviewing every 5 years. Note: the strategy contains key projects to improve signage, publications, community projects and educational use using appropriate technology.

Target: maintain the information point as a focal point for visitors, providing information and literature about Burnham Beeches and informing/updating visitors on current issues and opportunities.

Achieved by: maintaining information point in good working order; providing up to date information; reviewing/redesigning every 7 - 10 years.

Target: up to date, relevant on-site information always available

Achieved by: maintaining signs and notice boards at entrances, car parks and other key places in good condition; ensuring all information is correct.

Target: up to date and relevant literature always available.

Achieved by: leaflets and fact sheets designed and printed; on site leaflet dispensers stocked; available from website and office.

Target: regular information updates on activities and issues at the Beeches for visitors and interested parties

Achieved by: up to two newsletters per year; monthly updates posted on site and online.

Target: Rangers to be accessible, approachable and to regularly engage with all sectors of visitors to give positive message as well as, where appropriate, challenging misuse of the site.

Achieved by: a minimum of 4.5 days visible patrol/availability each week; 24 hour call out facility for public; operational manual to ensure consistent response.

Target: at least 12 low key events held at Burnham Beeches each year (guided walks, etc); 1 - 2 medium events (lantern making, tree dressing etc).

Achieved by: organising and promoting by staff.

Target: improve the information available to schools and encourage environmental awareness by young people in and around Burnham Beeches.

Achieved by: producing an education pack or equivalent available from website; ensure that a system is in place to record which groups use it; supporting, where possible, visits by youth groups.



4.2.3 Community involvement

In recent years Burnham Beeches has benefitted considerably from volunteers contributing many hours and helping with a wide range of projects. Many of the projects that volunteers undertake would not otherwise be possible.

The Beeches is highly valued by local residents; it is important that it is considered a part of the local community as this fosters better appreciation and care. Regular consultation with the community ensures people are well informed about key issues.

Target: support at least 5,000 hours of volunteer work per year.

Achieved by:

- ♦ promoting volunteer activities;
- ♦ holding regular work parties;
- ♦ encouraging work experience students;
- ♦ producing and publicising a list of 'jobs vacant' for volunteers;
- ♦ holding community events;
- ♦ implementing the volunteer strategy.

Target: ensure at least one activity per month is relevant and attractive to the teenage age group.

Achieved by: involving groups such as Skill Force, Duke of Edinburgh, Scouts and Eagle Scouts.

Target: continue to engage with the local community.

Achieved by:

- ♦ holding at least 3 meetings of the Burnham Beeches Consultation Group each year and review membership of group at regular intervals;
- ♦ taking opportunities to publicise issues relevant to Burnham Beeches at local events such as Parish Council meetings;
- ♦ creating opportunities for the public to meet staff and learn about the Beeches.



4.2.4 Burnham Beeches Transportation Strategy (BBTS)

Produced in conjunction with Buckinghamshire County Council (BCC), the transportation plan aims to encourage sustainable travel to Burnham Beeches, reduce the impacts of the traffic on roads through the reserve and to facilitate the expansion of conservation grazing scheme.

*What Do You Like Most?
"Exploring the roads and paths now free from cars"
~2009 public consultation~*



Target: minimise the impact of cars and motor vehicles on Burnham Beeches.

Achieved by:

- ♦ continuing to work with BCC regarding transportation to deliver the BBTS Action Plan;
- ♦ reviewing and, where necessary, revising both Strategy and Action Plan;
- ♦ ensuring that conservation grazing issues are fully reflected within the Strategy and Action Plan;
- ♦ ensuring Burnham Beeches is included in Local Transport Plan v3;
- ♦ reviewing car access including car park surfaces, drainage and capacity.

4.3 Objective 3: Estate assets and legal issues - To fulfil all legal obligations and to maintain estate structures in good condition.

4.3.1 Historic features

There are three scheduled ancient monuments (SAMs) associated with Burnham Beeches that need to be conserved, as well as several ancient wood bank systems and some more modern artefacts dating from the Second World War. Hartley Court Moat and Seven Ways Plain Hill fort both consist of banks and ditches and it is important to ensure that these are not damaged in any way and that all tree regeneration on banks is prevented. The Pound is a simple brick structure in need of some simple repairs. A full 'walk over' survey of the Beeches to locate other archaeological features would be desirable. The trees planted in the past by Lord Mayors and other dignitaries need to be clearly marked on a map and checked at regular intervals for maintenance. A book listing other designated trees and memorial features is also maintained.

Target: to restore the Pound to good condition.

Achieved by: applying for HLS and carrying out appropriate repairs to Pound using a specialist contractor.

Target: to maintain all SAMs in good condition.

Achieved by: ensuring no habitat work carried out on SAMs has a negative impact and, where possible, carrying out positive management such as tree clearance; liaising as necessary with English Heritage.

Target: identify other parts of Burnham Beeches that may be important for archaeology.

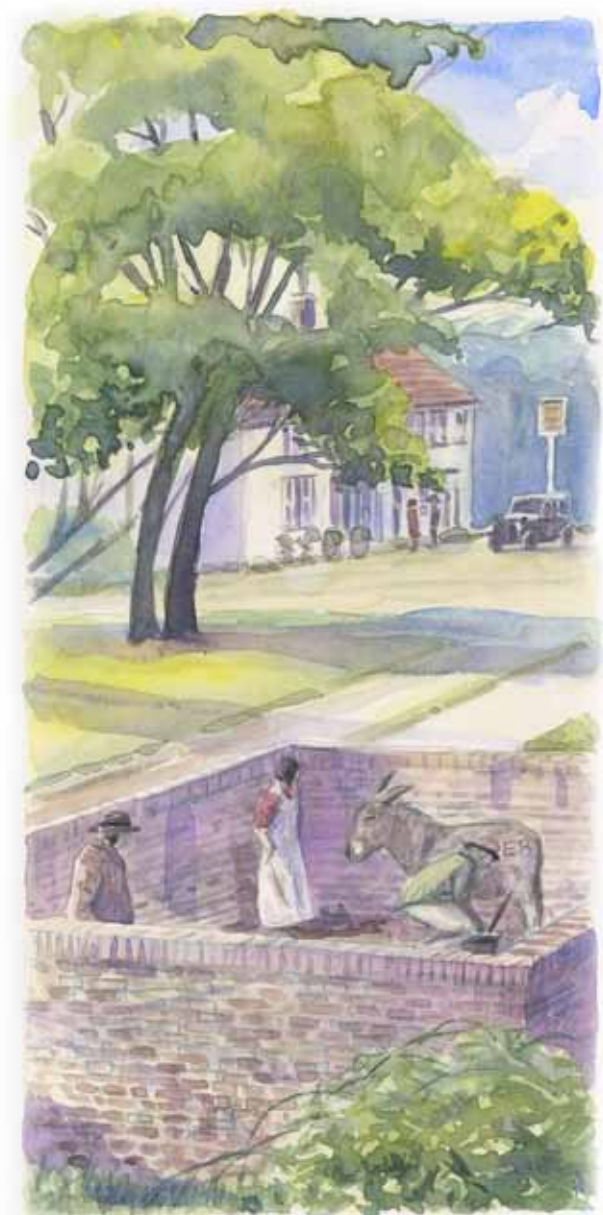
Achieved by: completing a 'walk over' archaeological survey and, where possible, carrying out recommendations from it.

Target: maintain a good archive of photographs, pictures and historic objects.

Achieved by: setting up a database to catalogue items and designating a person responsible for managing it, ensuring all objects are stored in good condition; acquiring new pictures as available.

Target: all ceremonially planted trees and memorial features to be cared for.

Achieved by: maintaining ceremonial book and maps; rolling programme of inspection for Lord Mayor's trees; review of all trees and other features every 10 years.



4.3.2 Tree safety

Tree safety is a legal obligation and all inspections and subsequent work must be carried out within the required time span. The tree safety policy gives detailed information on how this must be achieved.

Target: ensure all tree safety issues are identified and dealt with effectively.

Achieved by: ensuring all tree safety surveys and subsequent work is carried out on time as required by annually reviewed Burnham Beeches tree safety policy (according to City of London standards).



4.3.3 Bats

All bats and their roosts are protected. It is necessary to carry out inspections of all trees prior to any surgery or felling to ensure compliance with the law. General bat surveys should be carried out to ensure that the best information is available about where and how bats are using Burnham Beeches. Carry out surveys before work on trees and make improvements to bat habitat where possible. See the bat policy for more information.

Target: to prevent any harm to bats or their roosts.

Achieved by: implementing the bat policy.

4.3.4 Fencing and gates

Regular maintenance of infrastructure such as fences, gates, cattle grids, water troughs and associated equipment is required to keep livestock enclosed and healthy. All gates should be safe and appropriate for use.

Target: to ensure all livestock infrastructure is appropriate and in good condition.

Achieved by: regular checks and updating when necessary.



4.3.5 External accreditation

Reviewing the success of our work is not only important to ensure that the management remains of high quality. It is also important that we continue to lead the way in sustainable practices.

Target: retain Green Flag and Green Heritage awards annually.

Achieved by: applying for Green Flag or a similar benchmark each year; completing Corporate Sustainability Audit system as per the agreed timetable (or applying for equivalent accreditation) and implementing the associated improvement plan.



4.3.6 Health & Safety

Target: ensure all health and safety obligations are complied with.

Achieved by: completing the City of London audit as per the agreed timetable and implement the associated improvement plan.



4.3.7 Illegal access

Target: to prevent illegal encroachment.

Achieved by:

- ♦ ensuring boundaries are secure;
- ♦ providing clear contact details and ensuring a timely and effective response to incidents;
- ♦ maintaining ditches and banks in good condition;
- ♦ ensuring estate boundaries are clearly determined (achieved via grazing plan);
- ♦ ensuring all wayleaves and licences are up to date.

4.3.8 Finance and Income

The City of London provides funding for the management of Burnham Beeches largely from its own private funds, the **City's Cash**. At the time of writing there are significant pressures to make savings and it is anticipated that, for the period of this plan, revenue can meet only part of the site's projected annual running costs. The success of much of this management plan depends on the ability to identify and secure significant external funding to match or exceed any savings required by the City of London.

In a recent consultation 58% of respondents said they had not contributed any money to Burnham Beeches but 70% preferred the continuation of voluntary car park donations as the best way forward.

Action: meet annual savings requirements and meet/exceed income targets set by the Director of Open Spaces' annual budget for the site.

Achieved by:

- ♦ identifying and making savings as required;
- ♦ identifying and applying for appropriate grant aid;
- ♦ developing fund raising initiatives and encouraging donations;
- ♦ reviewing car park donation machines;
- ♦ allowing filming under strict guidelines.

4.3.9 Buildings

There are many buildings that are part of the Burnham Beeches Estate. In addition to the office and the café/information point complex there are also seven staff lodges and associated barns. These need to be maintained to the standards required by the City of London for the public and staff.



Target: maintain all buildings and structures to a corporate standard.

Achieved by: working with the City Surveyor's Dept to obtain and implement the 20 year plan of works according to the responsibilities set out in the Service Level Agreement.

Target: reduce the environmental footprint of the estates built infrastructure.

Achieved by: implementing findings of the Sustainability Audit System.

4.3.10 Utilities

Any maintenance or replacement of underlying pipe work for water, gas and other utilities will need careful management to minimise damage to the Beeches. It is essential that habitat and other work do not inadvertently damage underground services.

Target: to ensure the precise location and details of all utility lines are known and maintained to the correct standard.

Achieved by: locating, marking on maps and liaison with relevant utility companies.



4.3.11 Geology/Hydrology

The hydrology of Burnham Beeches has been well studied in the past because of the gravel quarry just to the south at East Burnham. While the quarry is still functional the operator has a responsibility to monitor ground water levels in and adjacent to Burnham Beeches and ensure there is no negative impact. The results are discussed at the regular gravel liaison meetings attended by City staff.

Water quality and quantity may be issues of concern in the future.

Target: no significant avoidable harmful changes to the hydrological regime.

Achieved by: ensuring consultation and participation in hydrological issues related to the quarry and taking expert advice if and when necessary.

4.3.12 Emergency planning

It is essential that plans are in place to deal with unexpected emergencies, including fires.

Target: ensure emergency plans are available for instant use.

Achieved by: review at least every 3 years.

4.3.13 Other legal obligations

The legal status given by the SSSI and SAC status means that Natural England needs to give permission for actions not specifically detailed in the management plan. Any plans or projects that may cause a significant adverse impact to the site are subject to an

Appropriate Assessment (whether they are carried out by the City of London or a third party).



Target: to ensure all legal requirements are fulfilled.

Achieved by: meeting with Natural England, the police and other relevant authorities, and contributing information where appropriate.

Target: to ensure no preventable harm to the habitat and species protected in Burnham Beeches.

Achieved by: working with Natural England to ensure monitoring is carried out and work commissioned (where appropriate) to achieve this.

5.1 Our Ten Year Work Programme

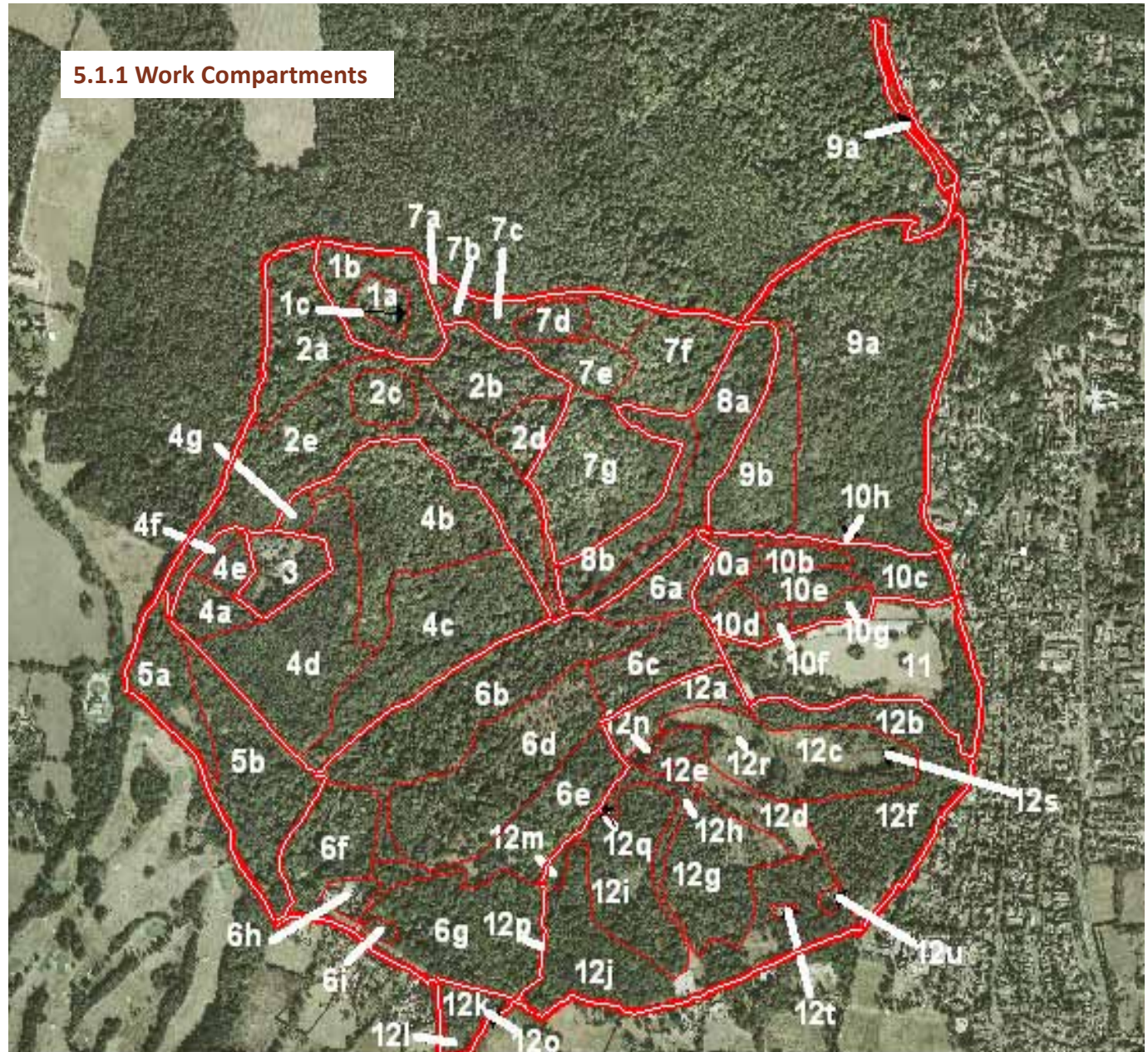
This section details the works that will be carried out to achieve the aims and objectives of this management plan.

The site is divided into compartments, shown on the aerial map opposite. The tables of projects, on pages 44 - 47, detail where work will be carried out in each year of the management plan.

The map below shows details of the heathland and mire restoration programme. Much of this has already been carried out, as illustrated by the stippled areas.

The table that follows on pages 44 - 47 gives information about the major projects to be undertaken at Burnham Beches in the next ten years. More details are available in staff working documents held in the office. There are several other aspects that are integral to both the planning and then carrying out of the work.

The Open Spaces Department Business Plan (BP) is a document produced by the City of London listing the key projects for the Department and for each individual open space. The Beches has grant funding from Natural England in the form of Higher Level Stewardship (HLS funded); this gives an area payment for some habitat types and also money for some specific projects. Projects linked to the business plan and those with HLS funding are highlighted in the table.

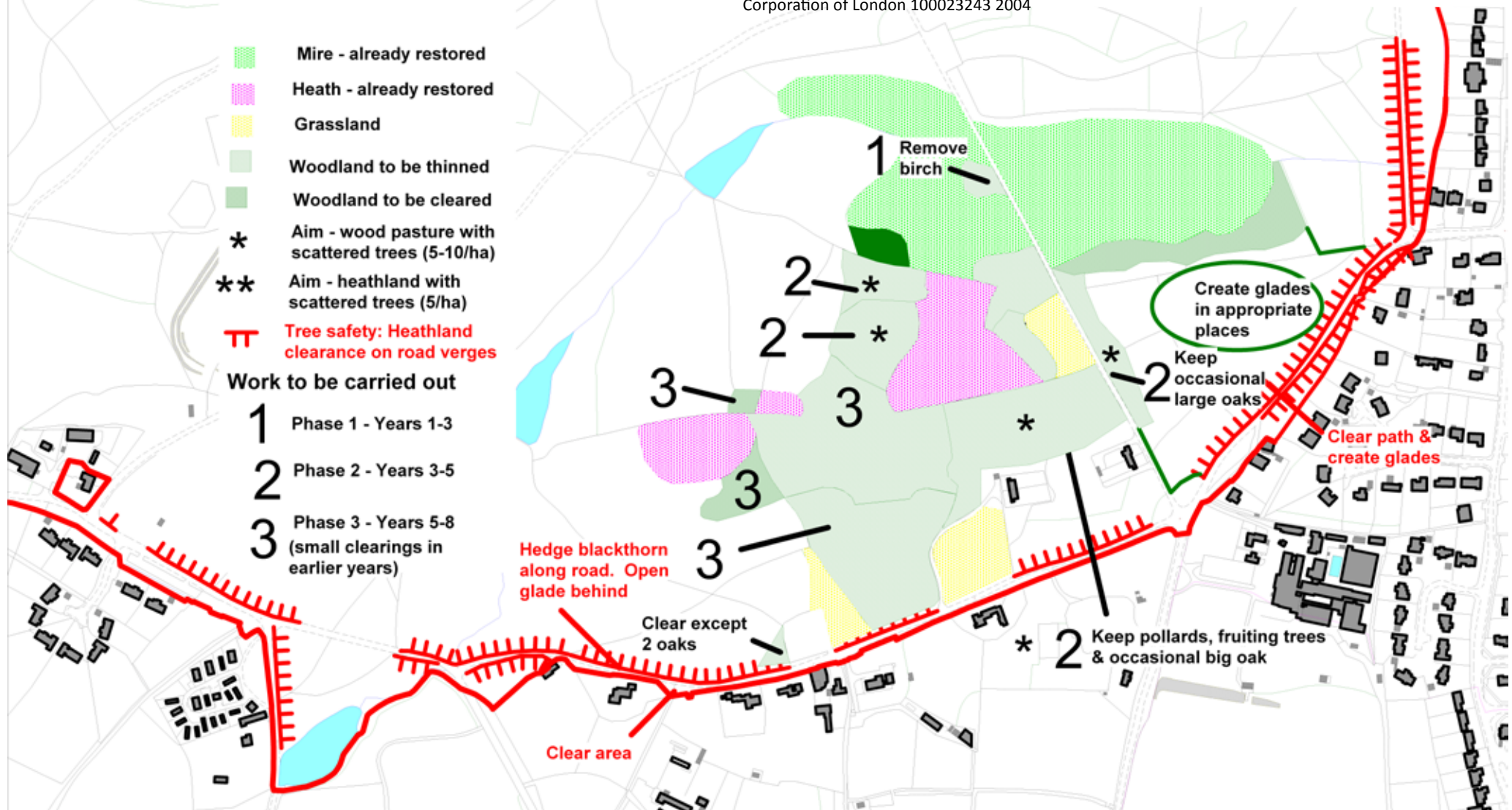


5.1.2 Planned heathland and mire restoration work, 2010 - 2020 (map also illustrates areas already restored)

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Corporation of London 100023243 2004



Projects in brown have a separate written plan: please refer to these for a detailed project breakdown and annual project planning.

BP - Business plan projects 2009-10;

HLS - projects funded by a Higher Level Stewardship grant

* - projects funded or part funded externally

The numbers under each Year indicate the priority level of each project:

1 - Essential

2 - Highly Desirable

3 - Desirable

Numbers in white on dark background show when a project will be focussed on for review

Objective 1: Conservation			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Code	Project	Compartment	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1.1	Old pollard work programme BP (HLS funded)	1,2,5,6,9	1	1	1	1	1	1	1	1	1	1
1.2	Experiments for rejuvenating old trees	Whole site		2	1	1						
1.3	Squirrel control	Whole site	1	1	1	1	1	1	1	1	1	1
1.4	Create new pollards	Whole site	1	1	1	2	2	2	2	2	2	2
1.5	Young pollard rotational cutting	Whole site	1	1	1	1	1	1	1	1	1	1
1.6	Wood pasture restoration Seven Ways	6d		3	3	2	2	1	1			
1.7	Identify key wildlife trees	Whole site	2	2				3				
1.8	Dead wood survey	1,2,4,5,6,7,8,9		3	2	2						
1.9	Create habitat piles & veteranise trees	Whole site	2	2	2	2	2	2	2	2	2	2
1.10	Create new area of oak coppice	7	2				2					
1.11	Investigate restoration of beech coppice	2						3	2			
1.12	Hazel coppice	8	2		2		2		2		2	
1.13	Rhododendron & Azalea clearance (HLS funded)	Whole site	1	1	2	2			2			2
1.14	Age structure of beech trees	1,2,4,5,6,7,8,9	2	2								
1.15	Heathland restoration											
1.15a	Phase 1 Remove woodland belts on heathland	12	2	2	2							
1.15b	Phase 2 Trees on heath to mire	12			2	2	2					

Objective 1: Conservation			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Code	Project	Compartment	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1.15c	Phase 3 Thin trees Stag to Juniper Common	12g					2	2	2	2		
1.15d	Thin trees roadside, Beeches Rd to Dell car park	6,11,12	2	2	2	2	2					
1.16	Scrub clearance, rotational cutting & review	Whole site	2	2	1	2	2	2	2	2	2	2
1.17	Bracken control (HLS funded)	1,6,9,12	2	2	2	2	2	2	2	2	2	2
1.18	Heather regeneration & peat cutting for small pools	12	3	2	3	3	3	2	3	3	3	2
1.19	Mowing programme (sightlines & Common)	11 (Whole site)	2	2	2	2	2	2	2	2	2	2
1.20	Improvements to entrance to BB/improve wildlife value	11	3	2	1	2	3					
1.21a	Improvements to Upper & Middle ponds - physical BP	12n, 12m	3	2	1							
1.21b	Improvements to Upper & Middle ponds - biological	12n,12m		3	2	3						
1.22	Graze wood pasture & husband stock (HLS funded)	Whole site	1	1	1	1	1	1	1	1	1	1
1.23	Expand grazing area BP (HLS funded)	Whole site, Off site	1	1	1	1	1	2	2			
1.24	Remove undesirable plant species											
1.24a	As discovered	Whole site	3	2	3	3	2	3	3	2	3	3
1.24b	Larch plantation	4e								3	3	3
1.25	Encourage growth of BAP & desirable species	Whole site	2	2	2	2	2	2	2	2	2	2
1.26	Biological monitoring											
1.26a	Lichen monitoring	6,12	1	1	1	1	1	1	1	1	1	1
1.26b	Dust monitoring (sticky pads & Frisbee) *	6,12	1	1	1	1	1	1	1	1	1	1
1.26c	Traffic counts *	5,9,12	1	1	1	1	1	1	1	1	1	1
1.26d	Diffusion tubes (NOx and NH ₄) *	6,12	1	1	1	1	1	1	1	1	1	1
1.26e	Rothamsted light trap *	6h	2	2	2	2	2	2	2	2	2	2

5.2 Work Programme 2010 - 2020

[illegible]

Objective 1: Conservation			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Code	Project	Compartment	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
1.28	Research Projects											
1.28a	Zygodon	Whole site		2				2				
1.28b	<i>Full report on vegetation monitoring</i>	Whole site	2					2				
1.28c	<i>Bryophytes survey</i>	Whole site	2									
1.28d	<i>Coleoptera survey</i>	Whole site		2	2							
1.28e	<i>Diptera survey</i>	Whole site	2	2	2							
1.28f	<i>Pond/dragonflies survey</i>	Whole site	2	2								
1.28g	<i>Lichen survey</i>	Whole site		2	2							
1.28h	<i>Fungi survey</i>	Whole site			2				2			
1.28i	<i>Spider survey</i>	Whole site		2	2							
1.28j	<i>Mammals and dormice survey</i>	Whole site					2	2				
1.28k	<i>Flowering plant survey</i>	Whole site				2	2					
1.28l	<i>Bird survey</i>	Whole site					2	2	2			
1.28m	<i>Other invertebrate survey</i>	Whole site						2	2	2		
1.28n	<i>Wood ants</i>	Off site	2	2								
1.28o	<i>Genetics of beech trees</i>	Off site		2	2	2						
1.29	Climate change	Off site	2	2	2	2	2	2	2	2	2	2
1.30	Buffer land	Off site	2	2	2	2	2	2	2	2	2	2
1.31	Planning applications	Off site	1	1	1	1	1	1	1	1	1	1
1.32	Linking BB to other open spaces (green arc etc.) BP	Off site	2	2	2	2	2	2	2	2	2	2

Objective 2: People			Year 1	2	3	4	5	6	7	8	9	10
Code	Project	Compartment	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
2.1	Visitor counts	Whole site	1	2	2	2	2	2	2	2	2	1
2.2	Customer satisfaction questionnaire	Whole site	2	2	2	2	1	2	2	2	2	1
2.3	Café & toilets open & in good condition	11	1	1	1	1	1	1	1	1	1	1
2.4	Car parks well maintained	Whole site	1	1	1	1	1	1	1	1	1	1
2.5	Entrances & gates well maintained	Whole site	1	1	1	1	1	1	1	1	1	1
2.6	Remove all litter & maximise recycling	Whole site	1	1	1	1	1	1	1	1	1	1
2.7	Maintain paths & bridges	Whole site	2	2	2	2	2	2	2	2	2	2
2.8	Carrying capacity	Off site				3	2	3				
2.9	Review car park locations & closing times	Off site, Whole site	2	2		2	2					
2.10	Encourage access by less able	Whole site	2	2	2	2	2	2	2	2	2	2
2.11	Manage dog walking activities	Whole site, Off site	1	1	1	1	1	1	1	1	1	1
2.12	Produce access strategy	Off site	2	2	1							
2.13	Implement fungi policy		2	2	2	2	2	2	2	2	2	2
2.14	Community engagement											
2.14a	<i>Byelaws - enforcement</i>	Whole site	1	1	1	1	1	1	1	1	1	1
2.14b	<i>Byelaws - operation manual</i>	Off site	1									
2.14c	<i>Byelaws - clarification</i>	Off site		1	2							
2.15	Public events		2	2	2	2	2	2	2	2	2	2
2.16	Newsletters & monthly updates		2	2	2	2	2	2	2	2	2	2
2.17	Signs & noticeboards		1	1	1	1	1	1	1	1	1	1
2.18	Information point		2	2	2	2	2	2	2	2	2	2
2.19	Schools pack				3	2	2					
2.20	Implement interpretation strategy BP	Whole site	2	2	2	2	2	2	2	2	2	2
2.21	Accessible & approachable staff	Whole site, 99	1	1	1	1	1	1	1	1	1	1
2.22	Encourage volunteer input	Off site	1	1	1	1	1	1	1	1	1	1
2.23	Encourage youth activities	Off site, Whole site	2	2	2	2	2	2	2	2	2	2
2.24	BB Consultation Group & other local groups	Off site	2	2	2	2	2	2	2	2	2	2
2.25	Deliver transportation strategy & integrate to grazing BP	Off site, Whole site	1	1	1	1	1	2	2	3	3	3
2.26	Review car access, parking, surfaces, drainage & capacity	Off site, Whole site		1	1							

Objective 3: Estate Assests and Legal Issues			Year 1	2	3	4	5	6	7	8	9	10
Code	Project	Compartment	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
3.1	Restore pound to good condition (HLS funded)	Off site	2	2								
3.2	Maintain SAM's in good condition	1, 6	1	1	1	1	1	1	1	1	1	1
3.3	Walk over archaeological survey	Whole site	2	2								
3.4	Collect & catalogue historic objects & pictures	Off site	3	3	2	2	3	3	3	3	3	3
3.5	Memorial features	Off site, Whole site	3	3	3	3	3	3	3	3	3	3
3.6	Tree safety	Whole site	1	1	1	1	1	1	1	1	1	1
3.7	Bat policy	Whole site	1	1	1	1	1	1	1	1	1	1
3.8	Fencing & gates	Whole site	1	1	1	1	1	1	1	1	1	1
3.9	Green Flag	Off site	2	2	2	2	2	2	2	2	2	2
3.10	Environmental sustainability audit	Off site	1	1	2	2	2	2	2	2	2	2
3.11	Health & safety obligations	Off site	1	1	1	1	1	1	1	1	1	1
3.12a	Wayleaves/licences - collect	Off site	2	2	2	2	2	2	2	2	2	2
3.12b	Wayleaves - Review existing & identify new	Off site		1	2							
3.13	Ensure boundaries are secure (ditches & banks etc.)	Whole site	2	2	2	2	2	2	2	2	2	2
3.14	Ensure financial security	Off site	1	1	1	1	1	1	1	1	1	1
3.15	Financial income strategy	Off site	1			1			1			1
3.16	Maintain all buildings & structures	Whole site	1	1	1	1	1	1	1	1	1	1
3.17	Reduce enviromental footprint of infrastructure		2	2	2	2	2	2	2	2	2	2
3.18	Map & protect all utility lines	Whole site, Off site	1	1	1	1	1	1	1	1	1	1
3.19	Hydrology stable	Whole site	1	1	1	1	1	1	1	1	1	1
3.20	Emergency plans	Off site	2	2	1	2	2	1	2	2	1	2
3.21	All other legal obligations fulfilled	Off site	1	1	1	1	1	1	1	1	1	1
3.22	Protect protected species & habitats from harm		1	1	1	1	1	1	1	1	1	1

Further documents relating to Burnham Beeches are available to view at the office.

Service

Corporation of London (Open Spaces) Act 1878

City of London Byelaws for Burnham Beeches

Open Spaces Business Plan



Conservation & history

Natural England conservation objectives

Citations for Site of Special Scientific Interest and Special Area of Conservation designation

List of 'operations likely to damage the site' drawn up by Natural England

Restoring the Pastoral Landscape at Burnham Beeches

Natural Area Profile for the Thames Lowland Basin (JCA 1114)

EPR Report about grazing

Biodiversity Action plan for Buckinghamshire

Nature of the City

Ecological surveys, reports and work programmes including old pollards, new pollards, deadwood, junipers,

Complete species lists for Burnham Beeches

Burnham Beeches during World War II

Burnham Beeches – a hidden history

Delivery

Open Spaces Annual Report

Annual work programme and project list

Burnham Beeches Health & Safety Plan

Bat policy

Dead wood policy

Volunteer policy

Interpretation Strategy (from autumn 2010)



Public interest

Burnham Beeches Fact Sheets on deadwood, fungi, cycling, wood pasture

3 Self guided trails

List of films shot in Burnham Beeches



Glossary

Ancient woodland: woodland that has existed since at least 1600.

City's Cash: income from investments that date back to the rebuilding of the City after the Great Fire of London, initially funded by tolls on merchants entering to trade within the City boundaries.

Coppice: a tree or block of trees cut once or more, close to ground level to obtain wood from the branches.

Ecosystem services: the goods (e.g. food, fibre and clean water) and services (e.g. water purification, pollination and climate regulation) which are provided by ecosystems. They sustain human well being.

Heathland: an area of vegetation characterised by heathers, on impoverished soils that is the result of thousands of years of exploitation by humans.

Herptiles: reptiles and amphibians.

Higher Level Stewardship (HLS) Scheme: grant aid to deliver significant environmental benefits in high priority situations and areas.

In favourable condition: a Site of Special Scientific Interest (SSSI) that meets with Natural England conservation objectives.

Mire: a wetland area with peaty soils.

National Character Area: there are 159 NCAs in the UK; each has a particular combination of physiographic, land use, historical and cultural attributes.

National Nature Reserve (NNR): designation for the best SSSI sites in England. Research and monitoring is promoted on NNRs.

Pollard: a tree that has been cut once or more, at a height of above 1.5 m to obtain a crop of branches.

Scheduled ancient monument (SAM): a structure listed by English Heritage as being of importance and hence protected.

Secondary woodland: woodland that has grown up on previously open land such as heathland or farmland; it lacks the overall diversity of undisturbed ancient woodland.

Site of Special Scientific Interest (SSSI): designation giving legal protection in order to conserve the best of the UK's wildlife and geological heritage.

Special area of Conservation: a designation for the best sites in Europe for nature conservation.

Wood pasture: please see text box on page 13.



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