CITY OF LONDON

Burnham Beeches & Stoke Common

Registered Charity

This is one of 14 green spaces managed by the City of London at little cost to the general public.

Burnham Beeches Management Plan 2020 - 2030

Burnham Beeches is a unique nature reserve and public open space owned and managed by the City of London Corporation.

It is a registered charity (number 232987) which receives the major part of its funding from the City.

Burnham Beeches is a precious remnant of an active wood pasture with ancient pollarded beech trees, a habitat that was once commonplace throughout the south of England but is now restricted to a small number of places. Situated in an increasingly urbanised landscape, we are working with local people at all levels to try to minimise the deterioration of the habitats and reduce the impacts of fragmentation.

The City of London Corporation is committed to managing Burnham Beeches in perpetuity to ensure that it remains a special place for generations to come.

A team of Rangers, a Conservation Officer and administration staff, 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.

Contents

Introduction

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 Beeches each year. Some people visit the nature reserve several times a week whilst others might come only once in their lifetime. Most visitors consider the Beeches to be a very special place and there is a strong sense of it being 'their' bit of countryside. Many, however, are unaware of just how significant the Beeches is for wildlife and of the bigger picture i.e. the need to actively manage the reserve in a manner that reflects traditional practice and takes an holistic view of the surrounding landscape.

Caring for the Beeches is much more than a matter of opening the gates, clearing the litter and mowing the grass. Each member of staff at Burnham Beeches is an expert, particularly in wood pasture and veteran tree management, conservation grazing and heathland restoration. They influence, and are influenced by, countryside management practice across the country and Europe. Each project is meticulously planned and researched to ensure it provides maximum benefit to the nature reserve and achieves a balance between our visitors and wildlife.

This new management plan aims to summarise why, when and how Burnham Beeches will be managed over the next 10 years. It builds upon the achievements of previous plans 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 nature reserve over the next decade.

The keystone of the 2010-20 management plan was the expansion of the conservation grazing scheme across the Beeches as part of the wood pasture restoration. The next 10 years are a bridge between the substantial heathland, mire and wood pasture restoration of previous plans and the development of on-going management practices to maintain these valuable habitats in good condition. More restoration is planned, but there will be a shift towards more staff and volunteer time being spent managing the previously restored habitats.

The key issues for the 2020-30 plan are focussed on connecting the most important habitats within the Beeches to help wildlife spread across the nature reserve as well as into the surrounding areas.

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.

Aspects of the management plan were presented in a public consultation exercise in October 2019 attended by over 900 people. All aspects of the plan received a high level of support. Our special thanks are extended to all those who helped to influence and produce this document.

Things we learnt in the last 10 years

- Several species of lichen, beetles, flies and moths new to the Beeches have been found, demonstrating the astonishing diversity of the nature reserve.
- The Main and Little Commons have some unexpectedly rare and interesting plants on them.
- Burnham Beeches was designated a Nationally Important Fungus Area and Important Plant Area.
- The nature reserve continues to be a stronghold for the rare moss, *Zygodon forsteri*.
- Burnham Beeches has more visitors per hectare than other sites of the same conservation status in the UK.
- Soils in areas with higher visitor pressure are richer in bacteria and poorer in fungi, indicating a decline in soil health.
- We have a better understanding of where our visitors come from and where they walk on the Beeches.
- DCOs/PSPOs have been highly effective and have significantly reduced anti-social behaviour on the reserve.
- Water catchments of the streams that flow into the Beeches have been clearly identified and mapped.

Burnham Beeches offers a unique mixture of habitats and wildlife. Careful management is needed to meet the needs of both recreation and conservation.

Achievements 2010-20: Habitat restoration and protection

Heathland/wood pasture restoration
Work in the previous management plan was delivered, with **12ha of the reserve restored to more open habitats**. This included selected clearance along the roadsides to restore wood pasture, reduce future tree safety issues and allow better access for visitors.

Grazing expansion
The area grazed was increased by nearly 400%, from 43ha to 165ha (75% of the whole nature reserve), providing a sustainable, environmentally-friendly way to manage the wood pasture of Burnham Beeches.

Invisible fences
Technological advances enabled us to graze120ha of this additional area **without installing more fencing or cattle grids**.

Looking after the old pollards
Approximately 50 trees were cut each year as well as halo clearance and smaller scale works; a new work programme was drawn up for the next 10 years.

Creating a new generation of pollards
Over 1,000 new pollards have now been created and approximately100 existing new pollards were cut each year.

Protecting rare species
A rare lichen was translocated from a dead tree to new host trees nearby.

Achievements 2010-20: Looking after visitors

Increasing visitor enjoyment
Dog Control Orders, subsequently converted to Public Spaces Protection Orders (PSPOs), were introduced. These require visitors to pick up all dog faeces and to keep dogs on leads in certain parts of the nature reserve.

Access for all
Work by volunteers and contractors on the easy access path and other paths across the Beeches reduced erosion and improved access for all visitors.

Explaining why the Beeches is so special
New interpretation and information boards were erected in key locations.

Events and public participation
Small and large events were carried out each year, including community picnics. The number of school visits has doubled since 2015.

Increased consultation
The Burnham Beeches and Stoke Common Consultation Group played a key role in many important aspects of site management, providing a way for members of the local community and local interest groups to be involved with decisions affecting the Beeches.

Green Flag & Green Heritage
Annual accredition in these prestigious national award schemes reflected the high management standards of the nature reserve.

Achievements 2010-20: Behind the scenes

Protecting the Beeches
A policy to better protect the Beeches from the impact of development was included in the Chiltern and South Bucks Local Plan 2036 that has been submitted for inspection.

Finance
Income generation increased, offsetting a decrease in central funding from the City of London. Car park charges were introduced at weekends and Bank Holidays.

Promoting our conservation work
The paper newsletter was replaced by an e-newsletter, cutting costs and saving resources. Regular updates are now posted on Twitter and Facebook.

Volunteers
Volunteers continued to support staff in many areas, providing the equivalent of an extra 3-4 staff members per year.

Pound restoration
Work to Scheduled Monument standards was carried out on the historic and protected **animal pound**.

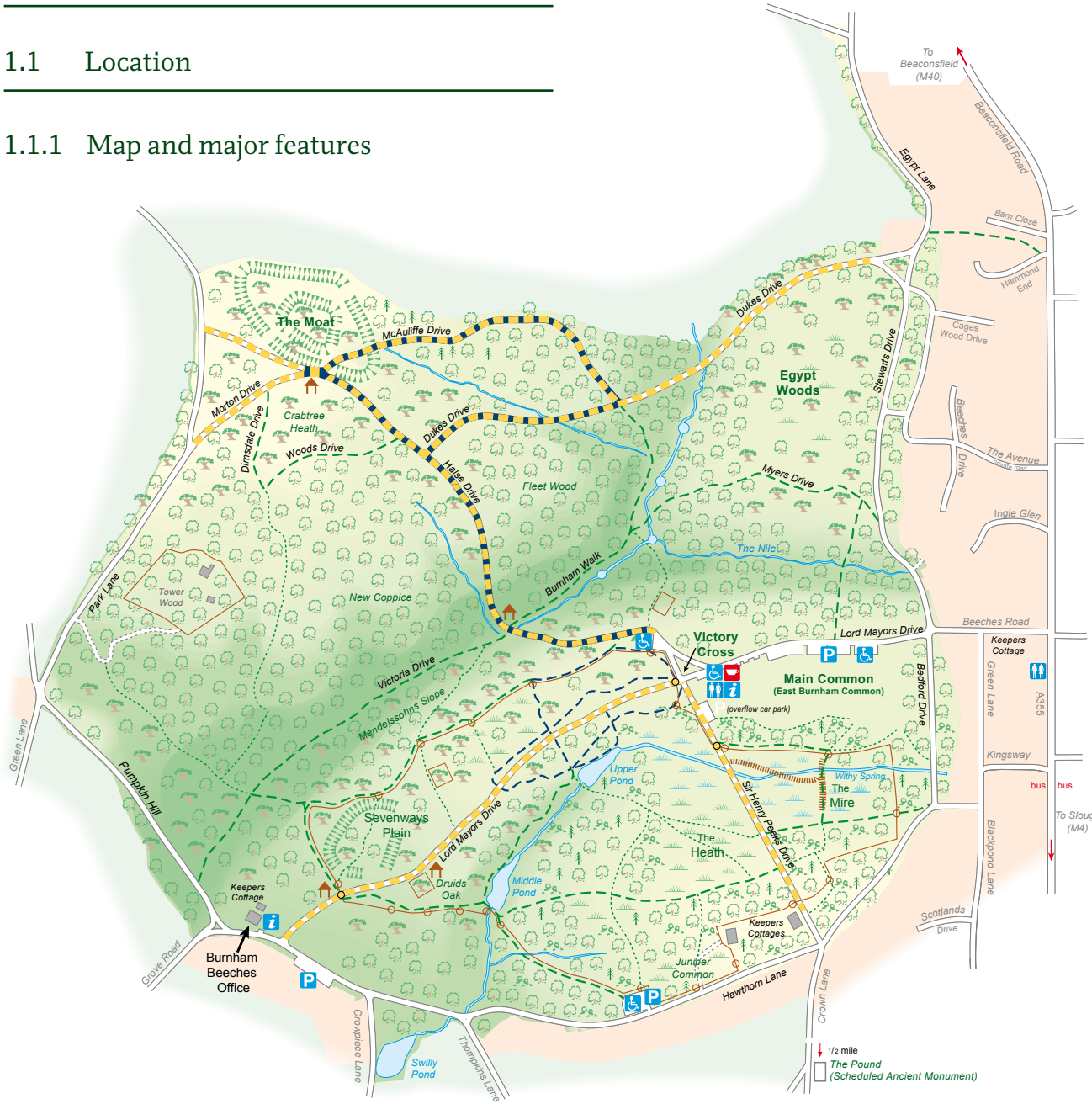
Monitoring
Monitoring included dust, hydrology, ground running invertebrates, butterflies, birds, vegetation and the impact of grazing.

Research
Research was carried out into visitor use, soils, tree health, and hydrology.

1.0 Site description

1.1 Location

1.1.1 Map and major features



Roads open to

- road
- road closed to all vehicles
- blue badge access available on request
- easy access gate & cycle grid

Paths only for

- track
- main footpath
- minor path
- easy access path
- fence
- boardwalk
- gate

Habitats and Features

- ancient woodland
- ancient pollards
- young woodland
- dry heath
- wet heath/mire
- open grassland
- stream
- swallow hole
- Scheduled Ancient Monument

Facilities

- car park (pay & display weekends and public holidays)
- blue badge parking
- Beeches Café
- toilets
- information point
- shelter

1.1.2 Location

Burnham Beeches is situated in South Buckinghamshire in the parish of Burnham, adjoining the village of Farnham Common. It covers 220 hectares.

1.2 Ownership and access rights

Burnham Beeches NNR is owned by the City of London which acquired it in several parts from 1880 onwards. The site was purchased under the Corporation of London (Open Spaces) Act 1878, therefore the public have open access to all areas subject to the byelaws. Under the Countryside Rights of Way (Crow) Act 2000 it is considered to be section 15 land.

1.3 Site status

Burnham Beeches was registered as Common 111 in 1967 under the Commons Registration Act; there are no Commoners today. It has been a Site of Special Scientific Interest[1] since 1951 and a National Nature Reserve[2] since 1993. In 2005 the Beeches was designated as a Special Area of Conservation[3], for its beech forests on acid soils. The SAC 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 considered integral to the character of the Beeches.

The boundary of the SSSI and SAC site is not the same as the City of London boundary. Swilly Pond is omitted but a considerable area belonging to the Portman-Burtley Estate and the National Trust is included.

[1] A Site of Special Scientific Interest (SSSI) is an area of land designated and protected for its habitats or species. These are the basic building blocks of nature conservation in the UK with other legal nature conservation designations based upon them.

[2] National Nature Reserves (NNR) were established to protect some of the most important habitats and species in the UK and to provide outdoor laboratories for research.

[3] A Special Area of Conservation (SAC) is a protected area designated under the Conservation of Habitats and Species Regulations (2017). It has the highest degree of protection of any nature reserve in the UK.

1.4 Financial situation

The City of London Corporation provides funding for the management of Burnham Beeches largely from its private funds. For the last 10 years there have been increasing pressures to make revenue savings and these are likely to continue. The City's revenue can now meet only part of the running costs for Burnham Beeches; the nature reserve is increasingly reliant on grants, car park payments and other sources of income.

The success of much of this management plan depends on the ability to identify and secure significant external funding to match any savings required by the City of London. Agri-environment grants help pay for habitat conservation work but the long term future of these grants is uncertain.

New sources of revenue will need to be explored in coming years: the passing of a new Open Spaces Act (2018) together with increased use of technology may open up some new avenues.

1.5 Physical features

The Beeches is geologically very complex. It is located on the Winter Hill gravel terrace and the surface layers are mostly material carried by melt water from the glaciers of the Devensian ice age. These rivers, made up of many small shallow channels, flowed across the whole area and deposited 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 areas of loess 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 resulted in a river terrace and these clear 'steps' in the landscape can be seen today. Under the surface deposits are the old Reading beds, derived from estuarine sands and gravels and under this is chalk, which comes close to the surface along Burnham Walk/Victoria Drive.

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

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

The small quarry near Victory Cross is designated as a Regionally Important Geological site and the strata and crossbedding of the sediments can be seen in the quarry face.

1.6 Cultural information

1.6.1 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' - an interweaving mix of commons and small woodlands with small irregular fields. Many of the commons and fields of South Bucks were rough heathland and there were many pools and ponds. Unusual for the area is the presence of the pollarded trees within Burnham Beeches.

1.6.2 Archaeology

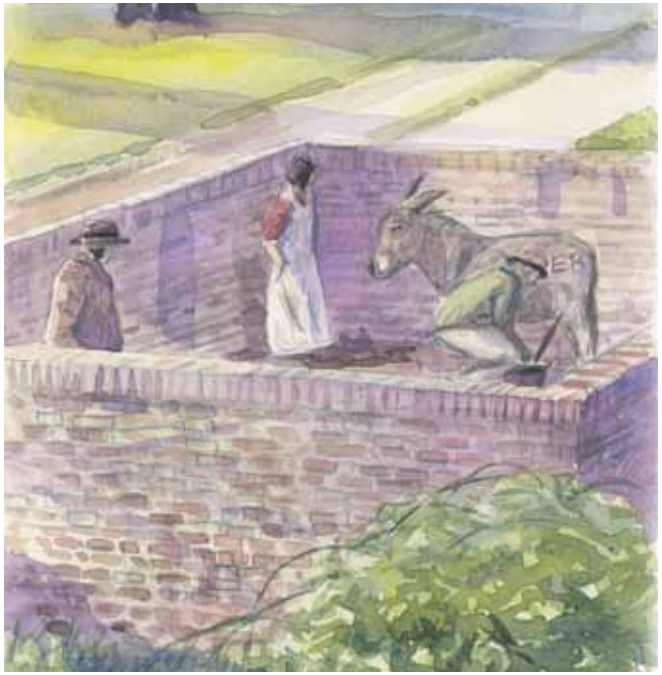
Burnham Beeches is considered to be ancient wood pasture containing some areas of ancient woodland, clearly bounded by wood banks dating from the 17th century. Most of the many pits and hollows in the woodland/wood pasture result from quarrying in the past.

There are three Scheduled Monuments:

East Burnham animal pound is separated from the Beeches and located on Crown Lane. 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). The City of London has repaired the pound several times in the last few years.

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 and Early Iron Age (eighth to fifth centuries B.C.). It may have been a permanent or temporary settlement but in the more recent past has been damaged by quarrying and war time activities.



Artist's impression of the pound in Victorian times.

The Chilterns Hillforts Project hosted by the Chilterns Conservation Board organised a community excavation of a bank and ditch running into Seven Ways Plain that a previous archaeological walk-over survey had indicated might also date back to the Bronze/Iron Age. This was clearly once a substantial feature, over 6.5 m wide and with a height of 1.8m from ditch bottom to bank top. Nothing conclusive was found to help work out how old the feature is: it may be an Iron Age linear earthwork but it may also be part of the boundary of a medieval deer park.

The Hillforts Project also carried out a LiDAR (light detecting and ranging) flight over South Bucks and it is hoped that the information gained will help with our understanding of the history and context of Burnham Beeches.

Community archaeological 'dig' on the bank and ditch running into Seven Ways Plain.

Local people gathered fuel from the Beeches and grazed their livestock under the pollard trees.

1.6.3 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 whole area was grazed with livestock until the 1930s.

An early visit by members of the Open Spaces Committee.

By the time the City of London acquired Burnham Beeches in 1880 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 travelling from London to see the famous trees. As the grazing declined, scrub and trees grew up, and the open aspect and easy access 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 and a camp for the men was built on Seven Ways Plain.

Following the War the Beeches again become an important area for recreation. It is now also managed for its high nature conservation value.

Photograph of Druids Oak, taken c. 1860.

1.7 Access and visitors

1.7.1 Visitor appeal

The Beeches is hugely popular, with visitors using it for informal recreation such as walking, dog walking and picnicking, and for children to play and explore. The most recent visitor survey (2015-16) estimated there were over 551,000 visits per year; over 83% of visits were by adults and over 50% arrived by car and parked in the car parks on Lord Mayor's Drive. A 2017 study showed that 75% of visitors live within 5.3km of the Beeches (although visitors from much further afield were not infrequent).

During the consultation for the management plan, 32% of people said the main purpose of their visit was to walk a dog. The 2015-6 visitor survey estimated that there were over 142,000 dog visits that year.

Other popular activities are cycling, horse riding & driving, running and bird watching, all of which are governed by the reserve byelaws. Cycling and horse-riding are permitted on the tarmac roads through the reserve, most of which are closed to cars.

More formal use of the Beeches is made by school groups and by recreation groups organising activities such as orienteering and cross-country running. The wooded landscape is popular with film makers; this raises income for the nature reserve but a strict code regulates what the film companies can do.

Easy-access paths make it easier for the less mobile to enjoy the nature reserve.

Burnham Beeches provides a tranquil safe space for countryside recreation.

1.7.2 Access provision

Most people come to Burnham Beeches on foot or by car. It is a short distance from a bus stop in Farnham Common village on a route between Slough and High Wycombe. The nearest railway stations are at Burnham and Beaconsfield.

Under the Open Spaces Act visitors can access the Beeches on foot at all times. The main car park is at the eastern end of Lord Mayor's Drive, accessible from Farnham Common. This, and other car parks, are shut at night to reduce antisocial behaviour. Access within the Beeches is restricted for most vehicles but the car-free zone is accessible to those with restricted mobility. A 'Tramper' (off-road buggy) is available for free loan from the office.

A network of surfaced paths allows easy walking and use of push chairs and wheelchairs in the area around Lord Mayor's Drive and to the ponds and café. There are no public footpaths across the Beeches but it is crossed by two long distance paths - the Beeches Way and the Shakespeare Way.

"Paths are well kept and managed."

"Lovely place for dog walks."

2019 consultation response

1.7.3 Visitor facilities and information provision

The café, information point and toilets are located in two attractive buildings near to the main parking area and Victory Cross; these are open every day. Interpretation boards at key points around the Beeches provide information about events, current issues and news. A sensory trail featuring tactile sculptures inspired by the Beeches is installed around the easy access paths.

The Burnham Beeches eco-café is managed by a licensee and aims to have a low environmental footprint.

Bins for dog faeces are located at major entrances and areas of high use. Public Spaces Protection Orders (map, p.80) are in place to ensure that a balance is maintained between the desires of dog walkers and those for whom dogs are not so popular. This requires that all dog faeces are picked up and that no more than four dogs are walked per person. In addition, the nature reserve is split into two parts: dogs must be kept on a lead in one part, and may be off-lead (provided they are under effective control and put on leads if requested by a ranger) in the other part. These regulations are enforced by the Ranger team and Fixed Penalty Notices are issued for non-compliance.

An e-newsletter provides visitors and others on the mailing list with regular information about current news and issues. Literature available to visitors from the information point and website includes self-guided trails and a range of fact sheets covering issues such as deadwood management, fungi and cycling at Burnham Beeches.

Rangers run an average of two events each month to help visitors learn more about Burnham Beeches. These include gentle nature rambles, more adventurous walks, 'meet the Ranger' sessions and family fun activities. Events are promoted locally, via the website and in a booklet that also includes important background information about the nature reserve.

1.7.4 Education and research

School and college groups regularly visit the Beeches to learn about management and conservation.

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 and dust monitoring. 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.

Volunteers carrying out invertebrate sampling.

1.7.5 Other estate features

Infrastructure on Burnham Beeches includes fences to contain the grazing animals and several shelters for visitors that date back to the early 20th century, some of which have been updated more recently.

A range of gates and cattle grids are installed on internal roads, entrances and main paths, largely to manage visitor access. Bollards in the car-free zone restrict vehicle access to easily accessible areas and there are a range of posts, banks, ditches and barriers to protect the nature reserve from vehicle damage.

A water pipe crosses the southern part of the Beeches and supplies the café area. Services such as electrical and telephone cables also run underground in several places and have been mapped.

Buildings consist of the information point, café and toilet block on the Main Common, the office and associated barns, and seven staff lodges.

1.8 Current use

Under the Open Spaces Act the requirement is for Burnham Beeches to be managed for informal recreation activities and for what we now term conservation. Given the popularity of the site and the number of visitors, care must be taken to ensure that recreation activities remain low key and do not result in damage to the nature reserve, and that there is minimal conflict between recreation and conservation.

Obligations of the status of Burnham Beeches as a SSSI, NNR and SAC, as well as other legal obligations such as the NERC (Natural Environment and Rural Communities) Act require positive management for nature conservation; this is supported by grant funding through Countryside Stewardship.

In the past the Beeches was an essential part of the local economy by providing fuel and grazing for livestock. Today, the local economy is boosted as the Beeches attracts visitors and employs staff.

> "Great facilities, café, toilets and fantastic open spaces and woodlands."
>
> 2019 consultation response

1.9 Biological features

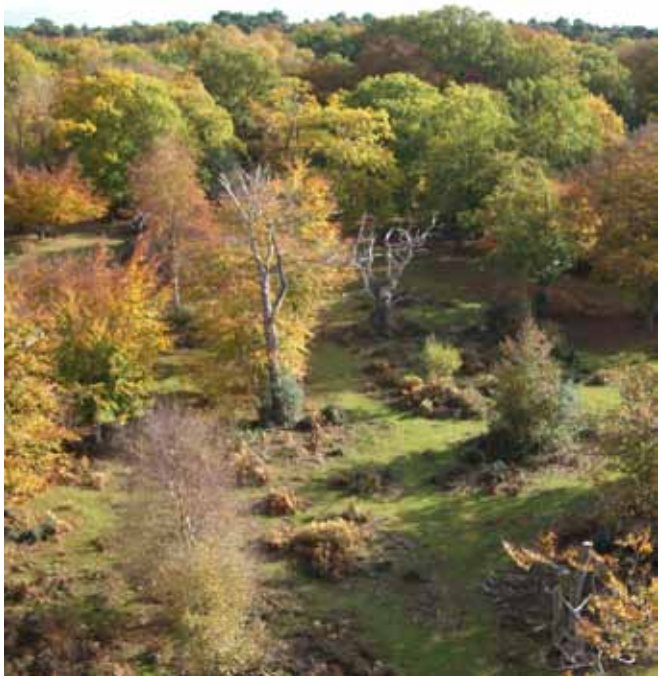
1.9.1 Communities and flora

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

Beech woodland

Within the northern part of Burnham Beeches are areas 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 like heather can be found. Mini-successions can be seen where trees have fallen over, 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, but the pollarded trees are the key reason for the designation.



Oak woodland

Although beech is the most abundant woodland type there are also areas of oak.

To the north this is mostly sessile oak (*Quercus petraea*) with an understory of bracken and holly; many of the oaks show signs of having been coppiced in the past.

Along Burnham Walk where the soil is more neutral, oak is found with hazel underneath. There are more spring flowers such as bluebell and wood sorrel in this area.

> "I love the autumn leaves. Great place for walking and being at one with nature."
>
> 2019 consultation response

Wood pasture

Land containing trees that is grazed with domestic animals or deer is referred to as wood pasture. The density of trees can be very variable, ranging from dense woodland to open grassland with scattered trees.

Grazing livestock are the key component in maintaining a varied structure over both large areas and at the small microhabitat scale. Many studies have shown that low density of grazing is beneficial to the majority of animals and plants that occur in woodland.

In the past much of Burnham Beeches was managed as wood pasture with the land under its trees probably mostly being heathland. Within the wood pasture there were areas where the trees were regularly pollarded.

Today, we value this habitat for its wildlife and recreational value and are working to restore it across much of the Beeches.

Pollarded trees

The ancient trees at Burnham Beeches developed in a wood pasture system which combined the grazing of livestock with pollarding. They support an enormous range of plant, animal and fungi species. Although most of the pollards in the nature reserve are beech there are some oak too.

In the Beeches the pollards were cut in the winter for wood, probably fuel for local use. Cutting took place every 15-25 years in a rough rotation and this repeated management allowed the trees to get much older than trees that have not been cut.

As of 2018 there were 299 old beech pollards and 78 old oak pollards alive (377 in total).

Pollarding

Pollarding is a management system where the trees are repeatedly cut for a product; it can be carried out on almost any broad-leaved tree species. The branches are pruned 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.

Heathland

Much of the land around the pollards, as well as a major part of the Beeches south of Lord Mayor's Drive was historically heathland. Restoration by tree felling over the last 30 years has given a flavour of the communities of the past.

The heather (*Callluna*) dominated community includes bushes such as dwarf gorse (*Ulex minor)*, broom (*Cytisus scoparius)* and juniper (*Juniperus communis)*; grasses and herbs like common bent (*Agrostis capillaris*), heath-grass (*Danthonia decumbens*), heath bed-straw (*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. In the future we envisage that much of the ground vegetation in the wood pasture will be heathland, so the two habitat types will in effect become inseparable.

Wet heath and mire

Where the water level is higher, mostly closer to the stream, the dry heath communities blend into wet heath and, in the wettest areas, into mire.

In the intermediate zones cross-leaved heath (*Erica tetralix*), rushes (*Juncus* species) and sedges (*Carex* species) are common. In the wettest areas the bog moss *Sphagnum* forms carpets which are interspersed with small pools and drier patches of cross-leaved heath or purple moor grass (*Molinia caerulea*).

Low levels of grazing help the mire by creating variations in structure and preventing it from drying out through the strong growth of purple moor-grass.

Open water

There are three ponds within the Beeches. Two hold water all year round and have a typical pond flora including white and yellow waterlilies (*Nymphaea alba* and *Nuphar lutea*), bogbean (*Menyanthes trifoliata*) and bulrush (*Typha latifolia*). The third, Swilly Pond, is seasonal and predominantly dry; it is characterised by grasses, including floating sweet-grass (*Glyceria fluitans*). Several small streams flow through the woodland and the moat holds water in late winter but has very few plants in it.

Hartley Court Moat.

Grassland

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

The Main Common and grass verges were probably seeded in the past and then mown. Grazing has recently been restored to the Little Common and parts of the Main Common which should help increase its conservation value over time. Rare plants seen in this area in the last few years include hoary cinquefoil (*Potentilla argentea*), sand spurry (*Spergularia rubra*), sea mouse-ear (*Cerastium defusum*) and lesser cudweed (*Filago minima*).

Cattle grazing on LIttle Common, alongside the main entrance to Burnham Beeches.

A varied plant structure benefits wildlife

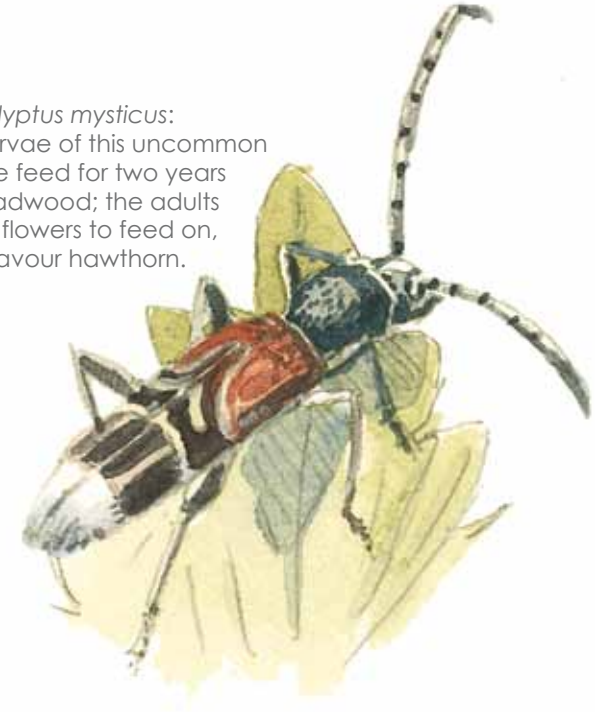
The management plan frequently refers to the use of grazing to create and maintain a varied vegetative structure. This means a mixture of plants of differing heights, density and species, providing a mixture of fine and coarse leaves. It will vary throughout the seasons and is also dependent on the grazing pressure.

Structural variation on a small scale allows a wide range of plant species to grow, including both those that require open, exposed conditions with lots of sunlight and those that prefer some shade and higher moisture levels.

This variation helps animals too. Invertebrates have many different needs, such as open areas to bask in or tall plants on which to build webs. Many species need more than one type of microhabitat in the course of their life, such as different places to feed and 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.

1.9.2 Rare species and wildlife under threat

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 RDB (Red Data Book) species have been recorded: these are species that fulfil international criteria for being rare, threatened or vulnerable in the UK and is an exceptional number for a nature reserve of relatively small size like Burnham Beeches. There are also numerous species that are considered rare or special locally.



Anaglyptus mysticus: the larvae of this uncommon beetle feed for two years in deadwood; the adults need flowers to feed on, and favour hawthorn.

Saproxylic invertebrates

A saproxylic species is one that depends on dead or decaying wood in order to live. Some feed on the wood, others use it as a retreat or hunting surface.

Old pollards are home to a wide range of saproxylic species because they have abundant dead and decaying wood in a variety of different moisture and light conditions. Saproxylic species found on beech 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 and beech tends to have more flies, but many different invertebrate groups may be represented.

The best surveyed invertebrate groups in Burnham Beeches are beetles and flies. A good number of the scarcer British saproxylic species are found, almost all associated with the pollards or decaying wood.

Characteristic species include the beetles *Quedius microps*, *Quedius situs* and *Stenicmus godarti*. The latter has also been found at Windsor and Epping Forest but is missing from other potentially suitable sites. The fly *Rainiera calceata*, which has a larva that lives in decaying wood, is only known from seven places in the UK. The list of fungus gnats contains more than 250 species, comparable to the New Forest which is 80 times larger than Burnham Beeches.

Saproxylic fungi

The main agents causing wood decay are fungi, some of which are rare and threatened. Burnham Beeches is the joint second most important site in Britain, and eleventh in Europe, for beech wood continuity fungi. It is now considered an 'Important fungus area' i.e. the 'site holds significant populations of rare fungal species which are of European or UK conservation concern'.

Notable species include the 'tiered tooth' (*Hericium cirrhatum*), the fruiting bodies of which have been found on branches cut from old pollards as part of the restoration work, and *Fomitopsis pinicola*, found on decaying beech and birch. Brackets of the endangered oak polypore (*Buglossoporus quercinus*) have been found on a couple of old oak pollards. Fungi feeding on decaying wood and leaves on the ground include the saffron-drop bonnet (*Mycena crocata*), a typical beech woodland species.

Fomitopsis pinicola - red banded polypore.

Tooth fungi (stipitate hydnoids)

As well as wood decay species, another very important group of fungi are those that are mycorrhizal on plants: these fungi help the plants take up nutrients and minerals. Many are common and abundant but the stipitate hynoid group are all rare. Five of the possible six species of these have been found in Burnham Beeches in recent years, the other has not been seen since 1958.

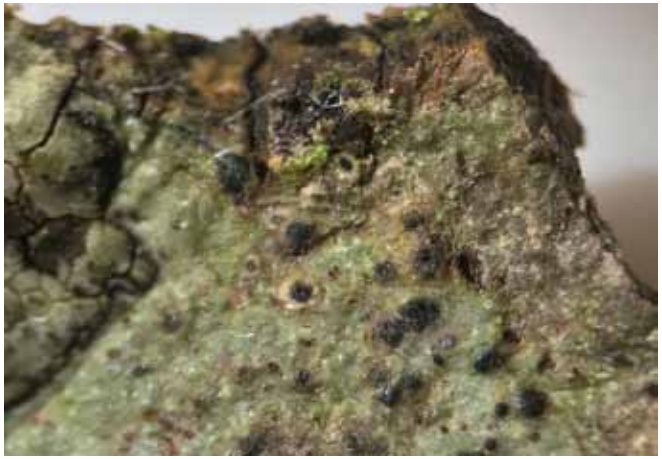
Mosses

Burnham Beeches is one of few British sites that supports Forster's knot hole moss (*Zygodon forsteri*). This endangered species lives on beech tree roots where they rise above the ground and develop a pool of water, as well as in rain tracks on the trunks. In addition, several species of the bog moss *Sphagnum* are found in the mire areas.

Zygodon forsteri is only found in two other places in Britain.

Epiphytic lichens

Although long known to support the rare beech-specialist *Pyrenula nitida* (classified as vulnerable), which had survived on two ancient beech trees, the known lichen interest of the site was until recently relatively limited. Recent visits by specialists added *Bacidia incompta* (classified as vulnerable) to the site list and also found significant lichen interest on veteran beech pollards concentrated on Mendelssohn's Slope. Their finds included *Pyrenula nitidella* and three species classified as vulnerable (*Bacidia circumspecta*, *B. incompta* and *P. nitida*) which are all qualifying features for SSSI status. Further survey is likely to find more species of interest. Collectively, this mixture of species indicates a significant relic oceanic beech lichen assemblage at the nature reserve.



Pyrenula nitidella was thought to be extinct in Britain until recently.

Tree hole-using birds and bats

The large numbers of holes and hollows in the old trees create perfect homes for tree-nesting birds and bats.

All three British wood-peckers are found on the nature reserve as well as many other typical hole-nesting species. Six bat species have been recorded, some just feeding but others roosting. All bat species and their roosts are protected by law so it is important to ensure that careful survey work is carried out before any tree work.

Invertebrates reliant 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 flowers for pollen or nectar as adults and the open habitat created by grazing allows such flowers and flowering scrub to thrive better than in dense woodland.

Bog plant communities

Restoration work on the heath and mire has resulted in several plant species re-appearing that had not been seen in the Beeches for many years. These have not been re-introduced - they have come from viable seeds in the soil that were only able to grow when the conditions changed and became suitable for them.

Examples include bog pimpernel (*Anagalis tenellum*) and oblong leaved sundew (*Drosera intermedia*). In addition, the combination of damp soils and disturbance from grazing enables some typical south Buckinghamshire species to thrive. Carpets of the bog moss *Sphagnum* in the mire areas have many tiny animals and plants living alongside the moss. More obvious examples of specialist heathland plants are the junipers, currently growing and regenerating well.

Bog pimpernel has a strong honey-like fragrant smell and grows on bare wet soil.

Reptiles and amphibians

Burnham Beeches has good populations of adders, grass snakes, common lizards and slow worm. These thrive in the more open habitats of the southern area. They require good hibernation sites and rough overgrown low vegetation interspersed with warm sheltered spots for basking. Interconnected microhabitats are especially important for reptiles. It is uncommon for this many of the UK species of reptile and amphibian to be found in a single site

Toads, frogs and three species of newt (palmate, smooth and occasional great crested newts) live in the ponds.

Reptile and amphibian numbers are declining in the UK.

Biodiversity in crisis

The UK is one of the most nature-depleted countries in the world. Biodiversity has plummeted due to the destruction of wildlife and wildlife habitats by agriculture, roads, housing, pollution and climate change. It is more important than ever that we look after nature reserves like Burnham Beeches.

- In 1966 there were 40 million more birds in the UK than there are today.
- Numbers of the most endangered species in the UK have halved since the 1970s.
- One in 10 species in the UK is now threatened with extinction.
- Moths have declined by 88% and butterflies by 76% since 1970.
- Approximately one plant species is lost per county per year and the rate of loss is accelerating.
- Despite government policies and actions, 150 out of 250 'priority species' for nature conservation are still declining in number.

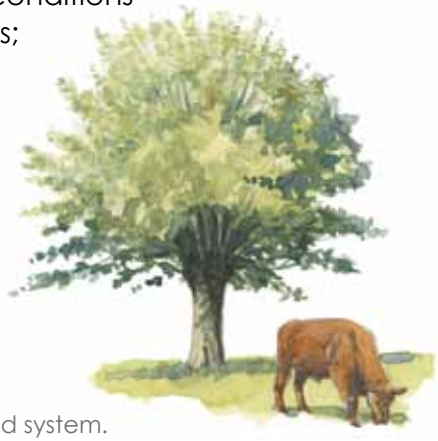
State of Nature reports (2013 and 2016); Our Vanishing Flora (2012).

2.0 The need for management

2.1 The importance of managing the pollarded trees

Areas with ancient beech pollards are rare. In Britain there are just two sites with over 100 such trees and those in Burnham Beeches are particularly fine examples. Worldwide, only Romania and the Basque Country have more than just a small handful of beech pollards and their climates mean that many of the species associated their pollards are different to those found here.

Pollarded beech trees can live for over 400 years rather than the more normal 250 or so for this species. Their age and shape due to cutting creates a unique habitat for many plants, animals and fungi that are not found on younger trees. Rainwater and fungi slowly break down the dead wood, creating ideal conditions for invertebrates; changes in the bark support species of moss and lichen not found on younger trees.



A tree pollarded regularly in a grazed system.

Once the process of pollarding has started it must be continued. Trees uncut for many years develop very large and heavy branches and this has happened in Burnham Beeches. The last time the pollards were cut for their wood was over 200 years ago; futhermore, after grazing stopped in the 1930s many new young trees grew up around the old ones. This caused the pollard branches to reach up high for light, in addition to growing larger in girth.

By the 1980s many of the old pollards were becoming very unstable and falling over or falling apart. In addition, there was no new generation of pollards.

In the seventeenth century there were an estimated 3,000 pollards in Burnham Beeches. By 1990 this had declined to 550 and by 1999 more than eight trees were dying each year. Staff at Burnham Beeches began a programme of restoration work and developed techniques that are now used internationally.

Restoring pollards is a new science: techniques have been refined over the last 30 years but the learning process continues. More trees are now cut from a MEWP (Mobile Elevated Work Platform) although some still require climbers when they are difficult to access. Working on the ancient trees is slow specialist work requiring skills that are very different to cutting trees in most other situations; it is costly, but essential.

In 2018 there were 377 living veteran pollards. The rate of tree loss has slowed from 1.99% to 1.39% per year over the last 30 years but we believe it should, ideally, be below 1.3% for the population to be sustainable. Despite all our careful work, trees continue to be lost because some are simply unable to maintain sufficient growth to survive.

Our aim is to keep these old pollards alive as long as possible to protect the associated plant, animal and fungal communities while we develop new pollards to be the veterans of future that can provide a suitable habitat.

A 'lapsed' pollard. The branches are now tall and heavy. Younger trees grow around it because grazing has stopped.

The weight of these tall heavy branches makes the old tree vulnerable to wind damage. This is what our work tries to prevent.

2.2 Importance of grazing

Grazing was a fundamental force shaping the Beeches for centuries but over a 60 year period without grazing it became increasingly wooded and less biodiverse, with the remaining open areas isolated within dense woodland.

Grazing was reintroduced in 1992 and is critical for ensuring the long term, sustainable management of the nature reserve. The range of habitats and species that make Burnham Beeches unique result from its historic management as a working wood pasture.

Grazing livestock help maintain a more varied vegetative structure (p.16) than mowing over both large areas and at the small microhabitat scale.

Grazing also reduces habitat fragmentation. The reintroduction and subsequent expansion across the nature reserve has connected and expanded isolated clearings, reaping benefits for the biodiversity of Burnham Beeches.

Plants are now growing that have not been found here for over 80 years. The seeds were left in the soil and still viable, but they needed the open light conditions and varied ground surface produced by the livestock. After clearance, the subsequent pulse of 'weedy' woodland trees like birch are kept in check so a diverse mosaic of plant species and structures can be created benefitting many invertebrates. Tree regeneration is not completely stopped; shrubs, brambles and dead wood protect some seedlings that are able to grow into oak and beech trees.

Species such as juniper grow and regenerate better in these environments, as can already been seen. The dappled shady environment with heathy clearings is favoured by a wide range of invertebrates and there is a whole new habitat for the specialist plants and animals that rely on herbivore dung.

Grazing is a sustainable, cost-effective, low pollution way to restore the wood pasture. As well as supporting nature conservation, grazing also delivers clear benefits to visitors. In addition to being an attraction in themselves, the livestock have opened up the landscape, created better views and improved access.

2.3 Climate change

Climate change is causing higher temperatures and more extreme weather events. Projections suggest that beech and oak trees may decline in health whilst others such as rowan and whitebeam may fare better. This might result in a more scrubby and open woodland with lower tree canopies. Heathland communities are predicted to change to a more grass-dominated community.

Managing Burnham Beeches in the face of these uncertainties presents a challenge. Actions to boost the resilience of the nature reserve include increasing structural diversity (through grazing), creating pollards from a wider range of tree species, monitoring changes in tree health and vegetation, working to reduce local habitat fragmentation and carrying out research projects to provide more information.

Trees and other natural vegetation provide 'ecosystem services'. They produce oxygen and absorb pollution and carbon dioxide. Slow growing, longer lived trees store more carbon than younger trees. Open semi-natural habitats are also valuable: heathland and acid grassland soils store, on average, more carbon (87-88 tons of carbon/ha) than deciduous woodland (70t Cha-1), although there is less in the vegetation.

2.4 Fragmentation, pollution and other threats

Development in the south east is adversely affecting the Beeches and other local natural areas. Once a rural landscape, it is now largely urban. Increased housing density puts pressure on water availability and there is more air, light, noise and water pollution. More and larger cars add pollution from exhausts and tyres and erode the road verges.

The impact on the Beeches of visitors and the effects of pollution, changes in ground water and climate change is already apparent. Trees and other key plants at Burnham Beeches are under increasing stress, with the older trees being particularly vulnerable.

Fragmentation

Fragmentation is a major threat to wildlife throughout the UK. Housing, roads and agriculture have reduced the land available for wildlife and broken up the remaining areas. The populations of plants and animals trapped on these 'islands' are too small to be resilient to the stresses of climate change, pollution and of general erosion caused by the high numbers of people living nearby. Locally, our aim is to link the remaining small areas, especially biodiverse 'hot spots' such as Burnham Beeches and other local SSSIs, to maintain viable populations of a broad range of native species. It is vital that the City of London works with neighbouring landowners to try to reverse fragmentation and also to provide additional recreation areas where possible.

We are also working to reduce fragmentation within the the Beeches itself. We have closed the internal roads to traffic and are restoring the wood pasture. Grazing is helping the different habitats to blend into one another, making it possible for wildlife to move more easily within the nature reserve and into neighbouring areas.

Immediate threats to the Beeches

Trees are long-lived and apparently robust organisms, but those at Burnham Beeches are facing multiple stresses that are only likely to become worse in future years. The old trees are remarkably fragile and vulnerable to problems like compaction and nutrient enrichment.

Grey squirrels strip the bark from the trees, reducing the leaf area available for food production as well as weakening the stem of younger trees causing them to fall.

High nitrogen levels from pollution adversely impact the mycorrhizal fungi that aid tree growth and help protect them from diseases. The likelihood of damage by pests and diseases such as *Phytophthora* is increasing. Climate change is projected to make the area warmer and to increase the incidence of droughts, which are particularly detrimental to beech trees.

Increases in the local population and higher car use has led to more visitors to the Beeches. Projects undertaken together with South Bucks District Council and Natural England as part of the process of developing the SBDC Local Plan have helped inform managers about the impact of recreation pressure.

This has shown, for example, that the soils in areas with high visitor numbers have different fungi to bacteria ratios than those with lower numbers and that some of the trees in these areas have declined in health in the last 30 years.

The increased footfall causes soil erosion and compaction, negatively impacting the roots of the trees by making them less able to take up water and more unstable. As a result, beech trees, (even relatively young ones) in the Beeches are declining in condition. Acknowledgement that additional houses in close proximity of the nature reserve will lead to additional visitors has been accepted and this requires mitigation in the local plan.

Many of these factors are beyond our control so it is important that we act to reduce those stresses that we can influence e.g. measures to relieve trampling pressure, squirrel control, bio-security measures and raising visitor awareness of the cumulative effect of their actions.

2.5 Visitor enjoyment and enhancing appreciation of the nature reserve

It is vital that all visitors feel welcome, valued, safe and enjoy their visit to Burnham Beeches. It is also important to encourage visitors to help look after the Beeches, either by actively volunteering or by making sure they don't damage the nature reserve.

The current level of visits has potential to cause immense damage if not carefully managed and one challenge is to help people understand the cumulative damage caused by the impact of many small actions, such as taking short cuts.

Dog walking is a popular activity and most dog owners now ensure their pets are well-behaved and kept under effective control. Analysis from the 2015 -16 visitor surveys showed that of the 551,000 visits made to the Beeches that year, 34% of visits have one or more dog although less than 10% of the visitors bring a dog with them. This activity has the potential to interfere with the enjoyment of other visitors and to harm the reserve itself. Although the number of incidents has fallen dramatically since the introduction of PSPOs, rangers still have to deal with incidents of dogs not being under effective control; a minority have injured wildife. Furthermore, some owners are still not picking up their dog's faeces: this is causing a build up of undesirable nutrients and other chemicals on the nature reserve, and potentially introducing disease. All dog urine is adding unwanted nutrients to the soil, in effect adding fertilizer and favouring plant species that quickly dominate communities, such as the heathland, that need low nutrient levels.

These effects may be minimised by ensuring that dog walkers are aware of the issues and act responsibly. PSPOs are helping too: the amount of dog faeces found in the dogs-on-lead area has reduced by 97%, (equivalent to several tons less each year).

Burnham Beeches is valued for providing a green and tranquil oasis in the midst of busy lives and in contributing to health and well-being of local people. Climate change will make shady places like the Beeches ever more important for rest and respite.

Increasing numbers of people are likely to be living within easy reach of the nature reserve in forthcoming years. The challenge will be to accommodate their need for green space and love of Burnham Beeches without destroying those aspects that they come to see.

"Beautiful place for our daily dog walk."

"Ideal for wearing out young children!"

"It's a magic place."

2019 consultation responses

3. 0 A vision for Burnham Beeches

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.

Burnham Beeches, 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 and 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 local green spaces, so that the local community can walk, cycle or ride safely.

Outstanding habitats maintained by grazing

Burnham Beeches is an attractive and varied landscape, rich in wildlife. It is an intricate mix of open woodland, heathy and grassy areas and dense woodland. Livestock graze across the nature reserve under pollarded trees of all ages.

Neighbouring fields provide additional land when grazing numbers on-site need to be reduced. The wood pasture system has a high conservation value and may also be a sustainable source of fuel and food for the local community if this does not conflict with the needs of wildlife.

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 reserve without detracting from its natural character. The Beeches is a safe place for informal recreation and there are opportunities to learn about the past, present and planned future of the Beeches in a variety of different ways.

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.

> 98% of respondents supported the overall long-term vision for Burnham Beeches.
>
> 2019 consultation response

3.2 A 10-year vision

A 500 year vision seems a long way in the future but is a single generation for the ancient trees. This management plan is a another step along the path. We aim to build on the achievements of previous plans by completing the majority of restoration work and moving conservation management work towards a maintenance phase.

The projects detailed in the following section focus on five main areas.

- **Grazing**, as the key to sustainable wood pasture restoration and management.
- Ensuring **continuity of habitat** for the rare and threatened species associated with the veteran trees, including pollard management to prolong the life of existing veteran trees and creating and managing a new generation of ancient pollards.
- Working to **connect Burnham Beeches to the wider natural landscape** to increase the resilience and biodiversity of wildlife in the local area.
- Managing the negative impact of high visitor numbers to **reduce stresses** on the trees and other components of the nature reserve.
- Information and interpretation to help others **understand why Burnham Beeches is such a fragile and special place**, and to raise the profile of Burnham Beeches as a world-class nature reserve.

4.0 Objectives and methodology

The actions in the 2020-2030 management plan aim to create a robust, biodiverse nature reserve as the next step to achieving the 500 year vision.

The targets and actions outlined here will be monitored throughout the plan and adjusted as needed. 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 the following three objectives.

Objective 1: Biological

To restore and maintain the key habitats of Burnham Beeches to favourable condition as part of a landscape scale network.

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 nature 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: Biological

To restore and maintain the key habitats of Burnham Beeches in favourable condition as part of a landscapescale network.

The elements of Burnham Beeches are interdependent: habitats and species cannot be managed in isolation. In general, the stronger the nature reserve 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 majority of Burnham Beeches is managed as a wood pasture system. Its two key elements are the pollarded trees and the heath/grassland and mire communities growing beneath. Although their management is described separately, these systems are intertwined.

Overall wood pasture management, p.33-37.

Pollard management, p.27-31.

Heath and mire management, p.32-33.

Management through grazing, p.39-40.

4.1.1 Pollarded trees and associated species

Old pollards

Our aim is to keep the old pollards alive as long as possible to protect the associated plant, animal and fungal communities.

Trees need regular inspections and pruning to reduce the weight of the branches. When cutting, care is taken to leave enough foliage to keep the tree alive whilst still removing enough wood to stop the heavy branches tearing the tree apart or causing it to fall over.

It is also essential to ensure each tree receives enough light. As the height of the crown is reduced, more surrounding young trees may need to be removed.

First stage of restoring an old pollard. Young trees close to the pollard are cleared. The height and weight of the branches are reduced by a small amount.

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.

The small clearings (halos) around each pollard start to join up over time, and grazing helps this become more open. Care needs to be taken that the environment around the old trees doesn't change too quickly: a sudden change in wind flow leaves trees susceptible to high winds or drought.

The pollards have been cut several times in recent years and most are much lower in height than they were 30 years ago. However, despite detailed attention, many are increasingly fragile and need additional help. Some trees have been propped and tethered to prevent them falling over and fences are used round some of the more delicate ones.

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

Some lapsed pollards can't be fully reduced. Restoration cuts have to be made much higher because there are no leaves lower down.

Work on many of the old trees is funded by the Countryside Stewardship grant which has additional obligations that must be adhered to. For example, brash cut from old trees must not be burnt.

Burnham Beeches is currently a beacon of expertise on ancient wood pasture and it is recognised internationally as a source of expertise for veteran tree management and conservation. To maintain this, staff need to keep abreast of developments elsewhere and apply them when appropriate.

A detailed 10 year work programme was drawn up in 2018 that is used to produce an annual veteran pollard plan of work. Each old tree has its own management plan that takes into account its specific needs: for some this means substantial work, for others it is just occasional checks. The work programme details which year each tree needs to be worked on and what needs to be done. For example:

Tree number 1462 Beech.

Year 3: cut young birch and holly from under the tree.

Year 8: high clear branches on beech to south. Reduce lateral branch on tree to the west by 3-4m. Pole thin upper branches.

Annually: cut bracken from around tree with volunteers.

Notes: cut from access platform.

Target: old pollard work programme to be carried out (see separate plan); approximately 30-50 old pollards to be worked on every other year with additional smaller scale works as required. Work will include pruning, clearing surrounding vegetation, shallow mulching, removal of wood ant nests and creating dead hedges to deter access.

Achieved by:

- carrying out the work programme and updating when required; checking all trees for emergency work every two years;
- flexible working to respond to weather conditions that might adversely impact results.

Restoration pruning work.

Target: ensure the techniques used are the best and most relevant possible.

Achieved by:

- keeping at the forefront of knowledge regarding work on old trees;
- further experimental work (not usually on the old trees) to evaluate the potential of techniques e.g. as outlined in the 2011 literature review;
- evaluating management options;
- sharing results of experimental work.

Target: reduce squirrel damage on pollards to a minimum.

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

Putting mulch around one of the old pollards suffering from trampling on the roots by people.

Reducing stress on the old trees

- Slow and careful clearance of competing trees and shrubs.
- Gradual pruning reductions, removing as little foliage as possible.
- Mulching with wood chip to ameliorate soil damage.
- Management of desire lines, e.g. emphasising main paths and moving/blocking paths developing within the root protection areas.
- Reducing vehicle movements within root protection areas (see p.67) and using low impact vehicles where possible.
- Removing wood ant nests from tree bases to stop them removing decaying wood that might be structural.
- Controlling grey squirrels at certain times of the year to reduce bark stripping.
- Using brash as a dead hedge or holly/bramble as a living hedge around trees to prevent damage by livestock or people.
- Enforcement of PSPOs to reduce dog waste deposited near trees.
- Informing visitors about the consequences of their actions e.g. in creating desire lines, direct damage to trees by climbing etc.

New pollards

New pollards are created to provide continuity of habitat and historical context for the future and, ultimately, will replace the old pollards.

In the last 35 years more than 1,000 new pollards have been created and tagged: the majority have been beech but other native species are represented too. The aim is to maintain at least 1000 new pollards in a regular cutting cycle of approximately every 10 years, as detailed in the work programme.

Many have now been cut two or three times and are starting to develop decay features and look like 'proper' pollards. As with the old pollards, it is essential to make sure these have enough light. Squirrel damage has the potential to have a significant negative impact on these trees and some trees have been badly damaged or killed.

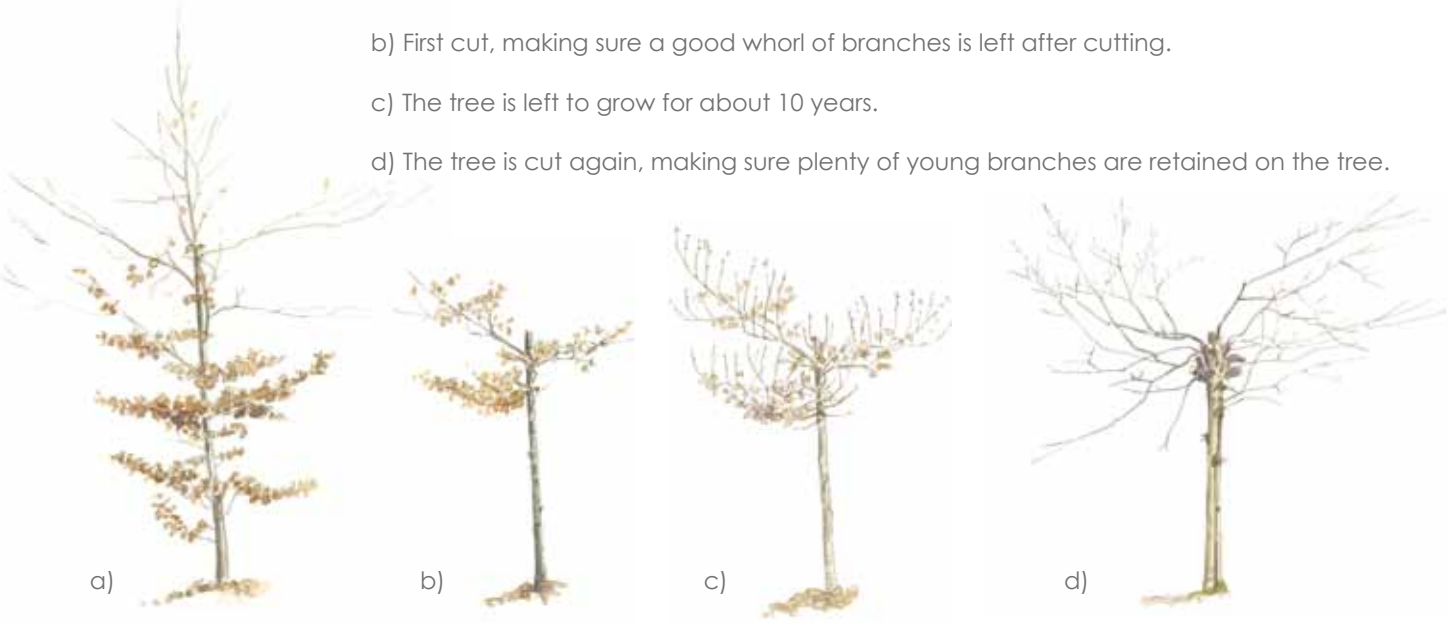
As the pollards get older and larger their productivity will increase. The wood cut from them at present is already too great to be left as habitat piles. Provided enough decaying wood is retained for wildlife, finding a market for this small diameter wood has the potential to support the local economy. Opportunities for interpretation through historical uses such as charcoal making should also be explored.

a) Young beech tree.

b) First cut, making sure a good whorl of branches is left after cutting.

c) The tree is left to grow for about 10 years.

d) The tree is cut again, making sure plenty of young branches are retained on the tree.



Young pollards are cut from the ground where possible, using a pole saw (a chainsaw on a long pole).

After two - three cuts the new pollard starts to develop good habitats such as decaying wood and water pockets.

Guidelines for pollard work

Preparatory work for the old pollards should take place between September and December. This will mainly involve clearing younger trees around them. Cutting should take place in January and February; if the previous summer has been dry, work may be delayed for a future year.

Young pollards should be cut in the winter, between September and the end of February, to comply with the obligations of the Countryside Stewardship grant. Beech and oak should be cut to leave a whorl of branches after the first cut; some branches all around the bolling should be left in subsequent cuts to avoid substantial dieback or (in oak) to reduce the impact of mildew damage.

Due to the demands of the work programme the old and new pollards should, in general, be worked on in alternate years, along with any emergency work required. All trees should be surveyed for bat roosts before any work is carried out.

Large pieces of wood from the pollard work should be left close to the trees or made into habitat piles. Smaller brash should be chipped or burnt on the burning platform if work on the specific tree is not covered under the Countryside Stewardship grant. Some brash can be used for dead hedging to reduce compaction around the roots of trees by deterring access; this should be placed around the tree in a ring but away from it; brash should not be placed over exposed roots.

Piles of dead wood should be constructed from surplus wood (for example from halo clearance); these should be as large and solid as possible and located, where possible, away from heavily visited areas or out of sight to reduce the risk of disturbance once the pile is established. No freshly cut or dead wood should be removed after 1 May. Full details are given in the dead wood policy.

Target: ensure that there is a minimum of 1000 'new' pollards, from the range of species represented at Burnham Beeches, to become the old pollards of the future.

Achieved by: creating new pollards as part of other tree clearance work and ensuring there are replacements for any that die; all new pollards will be tagged, recorded and positions mapped.

Target: cut all new pollards regularly to keep in cutting cycle.
Achieved by: carrying out the work programme and updating it when required.

Target: excess wood cut from the new pollards to be used off site if possible, without reducing the habitat value.
Achieved by: exploring a market for the small-scale wood cut.

Target: identify and retain all trees (i.e. not just pollards) with good habitat or high aesthetic value, unless subject to over-riding safety issues.

Achieved by:

- visual and bat assessments carried out prior to any work on the tree;
- modifying work as needed to ensure no unecessary loss of wildlife/aesthetic value.

93% of those surveyed thought the proposed management of pollards was appropriate.

2019 consultation response

Dead wood

Keeping a large amount and varied types of dead wood within Burnham Beeches is essential.

Saproxylic species are one of the most important species suites in Burnham Beeches and the reason for the European SAC designation. Many of these 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.

Target: Burnham Beeches to have at least an estimated 40m^3 of dead wood on the ground and more than 50 standing dead trees over 40cm per hectare.

Achieved by: carrying out a survey every 10 years and ensuring more dead wood is retained if necessary.

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 otherwise be felled (e.g. for safety reasons) to be veteranised where appropriate.

Intervention such as propping is done to try to stop old pollards from falling down.

Standing decaying wood like the remains of this long dead pollard oak is important for wildlife.

4.1.2 Heathland and mire

For convenience a distinction has been made in the plan between the mire and heathland and the wood pasture (4.1.3). In reality, they should blend into one another and we will be managing the area as a whole rather than as separate habitats.

The southern part of Burnham Beeches was formerly an open landscape, but lack of grazing from around 1920 until the 1990s resulted in growth of secondary woodland over most of it. Clearance to restore the open aspect on either side of Sir Henry Peeks Drive has been carried out in a series of stages over the last 35 years. As a result, a range of rarer species have reappeared from seed within the soil and are now growing well.

Today we no longer rely on the products that our ancestors obtained from wood pasture (e.g. bracken for bedding or birch branches for brooms) so we need to emulate the routine removal of these elements. Small-scale management, as described on p.38, will therefore still be needed to stop bracken, birch and other scrub becoming dominant and maintain the desired mix of open areas and scrubby patches under and around the pollards.

On-going management will maintain a diversity of all sucessional stages. Grazing (p.38) underpins this but does not, for example, prevent the new growth of trees.

Scrub will be encouraged along the edges of the open areas to provide habitat for many species of birds, mammals and invertebrates; this will need regular cutting to prevent it developing into woodland. Other animals, including many reptiles and invertebrates, will benefit from the mix of scrub and warm sunny open areas.

The mechanical and manual work required will include:

- cutting scrub such as birch or holly that is growing too tall or too dense;
- cutting pathways through brambles to allow the livestock to penetrate into them and break them up;
- keeping holly in check without losing the characteristic feel of the landscape by removing the tops from clumps of holly which have grown out of reach from the livestock;
- creating scrapes and hollows by hand;
- bracken control.

Target: manage the heath/mire system to create the ideal compositon of ground vegetation as follows.

Ideal dry heath composition
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)

Ideal wet heath/mire composition
>10% *Sphagnum*
No upper limits set for rushes, sedges and other desirable plants
<30% purple moor grass
<5% bracken
<5% bramble
<5% birch

Scrub on the mire limited to between 1% and 5% of vegetation, in other more open areas it should generally be less than 15%. It should be varied in structure and with no more than 15% of the same age.

Achieved by: annual programme for birch removal in the mire area; stumps treated as needed; no area to have birch taller than 3m; bracken to be controlled by cutting or spraying; scrapes and peat cuttings created.

Guidelines for heathland and mire maintenance

Bracken control should take place in July/August after a check of the area for late ground nesting birds.

Weed wiping of scrub should only be done if there are no other options. If needed, it should be done in June (when it is most effective) with great care; particular care should be taken to avoid ground nesting birds.

Manual clearance of young regenerating birch and other woody species can either be carried out between the beginning of September and the end of February or in mid-summer (August). Any summer clearance should avoid disturbing nesting birds with second broods.

Scrapes to remove the top layer of turf can be carried out at any time of the year; deeper, shallow pools should only be created in the winter months. The locations of pools and scrapes should be chosen to ensure that no rarer plants are negatively impacted.

4.1.3 Wood pasture

Our vision for Burnham Beeches is that it is a wood pasture system. Within this are core areas of pollarded trees where the ground vegetation is dominated by species characteristic of those of acid grassland and heathland.

This type of habitat is dynamic and shifting. It is characterised by multiple transitions, between tall and short vegetation, light and shaded areas, warm and cool places, all happening at both large and small scales. Connectivity is also extremely important with tree dominated areas contiguous, relatively tree-less areas interconnected, and the intermediate dappled shade providing the 'glue' between them all. The habitat is continually changing but the essential elements, trees, grazers, scrub and ground flora remain consistent.

The tree and scrub density is varied but is typically such that tree roots extend throughout the area, helping to bind the soil and allowing the trees to function as a group. However, tree cover is low enough that there is a ground cover of plants, typically those of open habitats, along with patches of flowering scrub and bracken.

Scrub is particularly valuable for birds, especially summer migrants. At low density scrub helps provide sheltered warm areas. However, when very dense it is less desirable as it shades out the ground flora and helps make areas dark and cold.

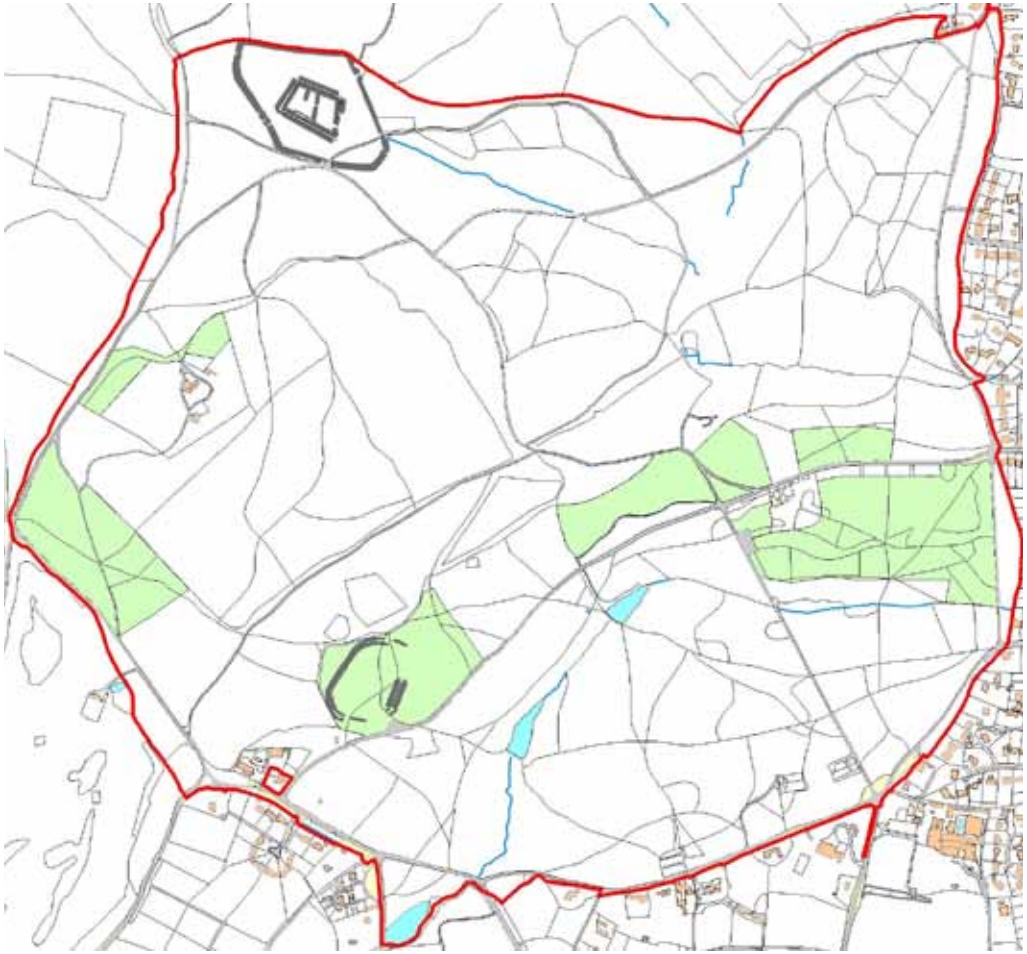
> 92% of those surveyed agreed plans for wood pasture restoration were appropriate.
>
> 2019 consultation response

This management plan period will see the completion of work to restore much of the Beeches to the wood pasture landscape described on p.15, benefitting a unique range of plants and animals. It is anticipated that the work will require a mixture of different methods. Some can be carried out with staff/volunteers but others may require large machinery.

Volunteers are essential to help with labour intensive jobs such as removing young birch.

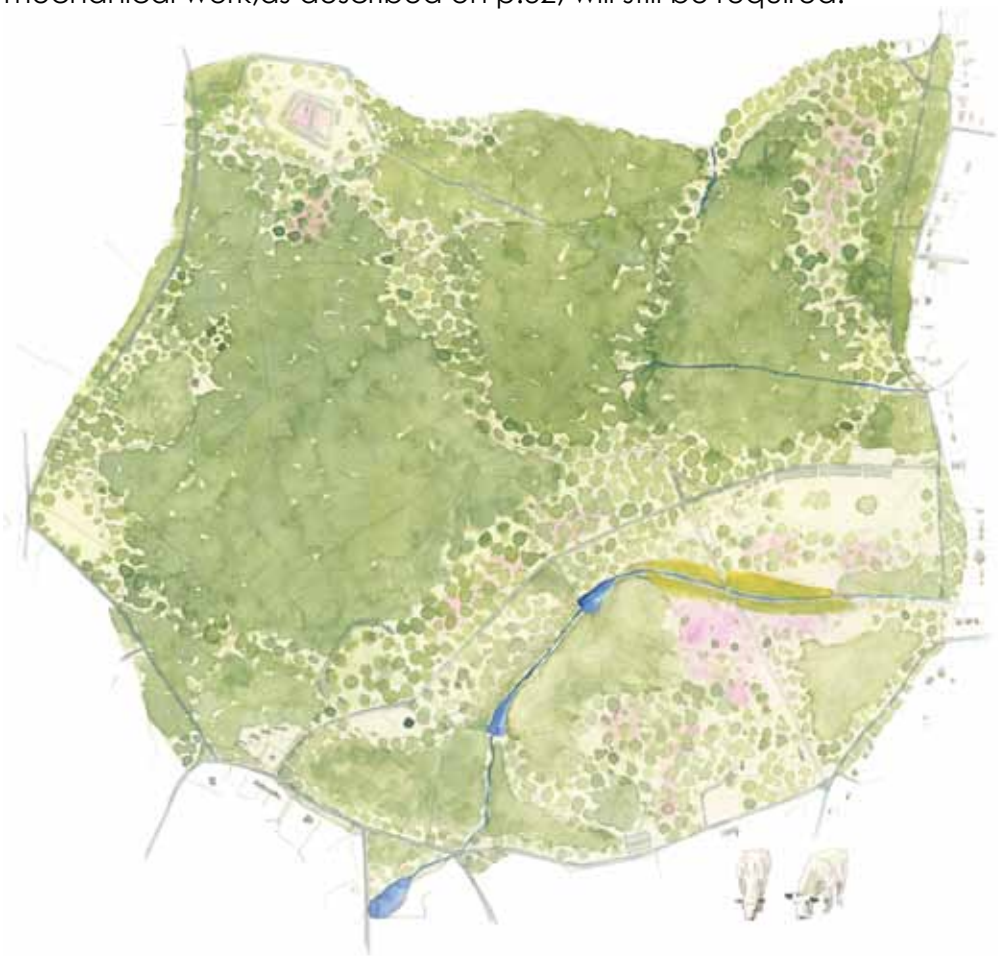
Target: restore a more open wood pasture to the areas illustrated on the map.

Achieved by: selected tree and scrub removal and pollarding.



Areas where wood pasture restoration (shown in green) will be carried out as funded by the Countryside Stewardship grant. Crown copyright and database rights 2019; OS 100023243; Geoinformation Group 2013.

Once several years have passed after the trees have been felted to restore the wood pasture/heathland areas, and instant re-growth of birch has been prevented, the aim is for the grazing livestock to drive the system, (section 4.1.5). This should allow natural processes to take place and the structure to be dynamic and varied. However, the density of grazing animals will not completely prevent the development of scrub and woody plants and manual and mechanical work,as described on p.32, will still be required.



Map of Burnham Beeches giving an indication of the desired tree density across the nature reserve.

Guidelines for clearance as part of wood pasture restoration

The aim of tree felling in the areas highlighted on the map is to produce dappled shade. This will not be clear felling. As an approximation this may be equivalent to 100-450 trees per hectare. It will require a mixture of work by hand or with large machinery. Tree felling and major mechanical work should be carried out between the beginning of September and the end of February; small bushes may be cut, if needed, in mid-summer (August) by volunteers and staff.

All blocks of trees should 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 dead wood should be kept, ideally stacked to make future work easier. If needed, the deciduous tree stumps will be removed by grinding. All standing dead trees should be retained.

Initially it may be helpful to remove fewer trees: more trees can be removed at a subsequent time. Trees that should not be felled are those that:

- have or are likely to develop habitat features such as decay, water pockets, cracks etc;
- represent a range of species, including beech, oak, hornbeam, flowering trees (e.g. rowan, wild service, whitebeam), fruiting trees (e.g. apple, cherry plum), rare species for the Beeches (e.g. field maple, alder buckthorn) and those of special importance for wildlife (e.g. aspen);
- represent a range of age classes, from saplings to veteran (there is an age gap in the population of oak trees, so more young oaks should be retained, for example);
- are big for their species;
- are of a good shape and size to turn into young pollards (these should be pollarded);
- show an open form and/or attractive shape.

Opportunities to 'veteranise' trees should be taken where appropriate (e.g. where trees would otherwise be felled or reduced for safety reasons). This could include the creation of bird nest boxes and woodpecker holes, use of climbing spikes and initiation of decay through mimicking lightning strikes.

Ensure there will be scrub in the near future: do not automatically remove all scrub species when clearing. Scrub should make up no more than 15% of the wood pasture. It is important to keep levels of birch and other pioneer species of scrub very low in the first few years after tree felling by regular cutting. Once a sward of grasses, heather or other herbaceous plants has developed cutting can be reduced or ceased and the livestock will then largely maintain the landscape, although some scrub control will always be needed.

Management of wood pasture areas through grazing and occasional mechanical cutting aims to maintain a wide range of microhabitats for wildlife, such as those shown here.

a) flowering plants, including heather;
b) flowering scrub; c) birch scrub;
d) 3D structure; e) dung;
f) patches of bare ground;
g) brambles and close cropped lawn;
h) localised poached areas.

Soil disturbance - good or bad?

Small scale soil disturbance (e.g. by the pigs when they turn over the top layer of ground) can be valuable because it creates fresh bare ground and microhabitats. Reptiles like to bask on bare patches of ground and long dormant plant seeds may germinate once they are exposed to the light. Heathland management regularly involves creating scrapes (man-made areas where the top layer of turf has been removed) to encourage the growth of heather; this mimics historical turf cutting for fuel.

However, soil disturbance is less good for trees, especially old trees like our pollards, and can add to the stresses that they face. Staff avoid moving vehicles across the root protection areas of the old trees unless absolutely necessary.

In addition, not all soil disturbance is equal. Trampling by people compacts the soil and forces out the air in it which is needed for healthy soils and good root growth; it also flattens plants. In contrast, horses and cows (in low numbers) punch holes in the top layers, exposing lower layers and making mini holes/pools.

Erosion of the soil also occurs in the Beeches and is usually caused by heavy footfall. This is also detrimental to trees as it removes the soil that they rely on for water, nutrients and of course that they are also anchored in.

Localised trampling by livestock can encourage some rare plant species and provides habitats for invertebrates.

92% of those surveyed thought our approach to managing soils was correct.

2019 consultation response

Burning platform

When we burn wood cut during habitat work, we use a burning platform to avoid damaging the soil. This raises the fire above the ground and, although there is a quick burn of the vegetation underneath, the fire does not impact on the soil. We use different platforms depending on where we are working. A skip is used for most work, with high sides so material does not fall out; a small wheeled platform or a single use one made on site from logs and corrugated iron sheets is used in sensitive areas such as the Scheduled Monuments. The ash left after burning must be removed from the nature reserve. It is also very important (especially when using the larger skip) that the location of the platform and the route taken to get it into place does not damage the soil or the root protection areas of the old trees.

Target: no damage to soils through burning during habitat works.

Achieved by: using a burning platform for all fires on the reserve. Ensure method is appropriate for the job, avoid damage when moving the burning platform and use additional protection underneath as required.

4.1.4 Main Common area

Apart from small patches of acid grassland (section 4.2.3) the main area of grassland in Burnham Beeches is the Main Common. This was sown many years ago and more recently has been the focal area for recreation.

The aim of much of the work in the last 10 years has been to improve the area for wildlife and give an impression of a grazed wood pasture for visitors as they enter the reserve.

Several rare plants have been found in this area in recent years, highlighting the importance of managing this area for nature conservation. Under the last plan, a mowing regime was designed for the Common to both maximise conservation value and facilitate recreation. Only paths were cut before 30 June and the back and eastern sides were cut on a three-year rotation. In the last 10 years the Little Common, north of Lord Mayor's Drive, has been brought into the grazing regime. In addition, the young pollards along the car park banks have been cut regularly.

During the last year of the 2010-20 plan, grazing was trialled on part of the Main Common. This area is under wood pasture restoration as part of the Countryside Stewardship Scheme grant (see map p.34).

The aim is for grazing to continue on the Main and Little Commons, excluding the car parks and an area around the café. Trees in the clumps on the main grassy area could be pollarded if they are appropriate shapes. Over time, the grazing will make the area less uniform and the clumps will become less discrete. Placing of large pieces of dead wood from adjacent wood pasture restoration work onto the common may also help scrub to develop.

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

Achieved by: grazing the majority of the Main Common; cutting banks and sightlines outside the grazed area the minimum required to fulfil safety and CSS grant requirements.

4.1.5 Maintaining habitats through grazing

As stated previously [section 2.2], the wood pasture, heathland and mire need to be grazed in order to reach and maintain favourable condition. Low-density grazing by cattle, ponies and pigs has been reintroduced to Burnham Beeches in several phases over the last 30 years.

The cornerstone of the 2010-20 management plan was to expand the area grazed, which increased from 43 to 165ha. Initially it had been proposed to do this by installing cattle grids on the roads through the Beeches, but the development of invisible fence technology allowed a cheaper and easier option to be trialled.

The grazing system now consists of a 43ha traditional post and wire fenced area and several loops of invisible fencing as well as a large central area bounded by the loops. Some of these loops cross public highways, allowing grazing on both sides of the road. The invisible fences are currently only used for cattle. Animals are moved between the different areas during the grazing season as required and we sometimes use traditional electric fences to graze or exclude smaller areas.

"Lovely to see animals in this environment - seems in keeping."

2019 consultation response

In 2019, 12 cattle and ponies were used on site; this number will probably be increased as the quality of pasture improves but is unlikely to exceed 25. High density of grazing causes soil to be degraded and trees to be badly damaged as the livestock strip the bark. Grazing intensity will ideally vary from year to year to benefit specialist plants and invertebrates and accommodate differences in weather conditions (which impact on growth of the plants the livestock eat). Generally summer grazing is best for the habitats within the Beeches and, while the main grazing season is likely to remain as May to November, it may extend beyond this, depending on need. Pigs are useful in turning over the soil in certain areas but cannot be used on the historic monuments and must be used with care around the roots of the old trees.

The benefits of grazing can clearly be seen in the habitat structure and the positive responses of key plants and animals. In addition, the livestock have 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.

> 91% of those surveyed agreed the proposals for grazing are appropriate.
>
> 2019 consultation response

Day to day management of livestock

The livestock are checked every day and, now that the grazing area has increased, it is sometimes hard to find them. Options for tracking the animals using GPS collars should be explored; this may also allow better information to be gathered about where they spend time and therefore identify what they are eating. It may be desirable to introduce a scheme for volunteers to check the livestock, as is used when they are off the Beeches grazing neighbouring nature reserves.

At certain times of the year, livestock management is particularly labour intenstive. We may wish to develop a team of volunteers who could help, for example, with moving fencing or stock.

The livestock at Burnham Beeches are at present owned by the City of London but there may be options for future management involving third parties.

Medium term plan for grazing

While the aim of the last plan was to see livestock roaming across a large unfenced area, there are traditional fences still in place: invisible fence technology is still quite new and the fenced area is a useful refuge if problems arise. Furthermore, it is useful in the restoration phase to have the flexibility to be able to concentrate animals inside or outside specific areas, which is also done using conventional electric fences. Technology is constantly changing with new options being explored by others grazing similar sites.

The decision on which fencing system to use will be made in the next 10 years. In the interim, minor adjustments (e.g. when older fence sections of fence replacing) can be made that will increase the grazed area. The priorities are to:

- graze more of the Main Common (using invisible fences or traditional electric fence);
- move the fence from the north side of Coronation and Juniper Cottages to the south side, adjacent to the road;
- move the fence on the east side of Sir Henry Peeks Drive further south and closer to the road;
- graze the area between the Main Common and the existing fence;
- move the fence between the Stag car park, Middle Pond and Lord Mayor's Drive closer to the road;
- graze the triangle at Egypt;
- graze the Swilly Pond area;
- use electric fences to graze outside the highways;
- explore options to graze various small areas e.g. outside The Small House.

We may also trial using hedges or scrub to prevent road access.

Long term plan for grazing

The long-term vision remains to graze as much of Burnham Beeches as possible, including our land on the outside of the public highways. This will allow the whole of the nature reserve (SSSI, SAC and NNR) to be managed in the most appropriate way and create a greater sense of place for visitors.

This presents challenges, primarily the risk of traffic incidents where the reserve is crossed by roads. The use of rumble strips, 'gateways' and signage have already been used, and more traffic management systems could be trialled. The use of cattle grids may be necessary, perhaps combined with invisible fences. The decision on the best mix of fencing systems will be decided in the lifespan of this management plan.

Ideally the livestock will still include cattle and ponies, with pigs in certain areas in the autumn months.

Target: fulfil wood pasture requirements in CSS agreement.

Achieved by:

- grazing current area through the use of traditional and invisible fencing;
- adjusting grazing levels to ensure compliance with targets in grazing impact assessment;
- preventing damage to historic monuments and veteran trees by livestock;
- husbanding stock, keeping records and adhering to guidelines concerning supplementary feeding and medication (e.g. no routine wormers, and livestock will be removed from the reserve for medication);
- no cutting after grazing unless required for control of specific species.

Target: expand the area currently grazed to around 95% of the Beeches.

Achieved by: modification of existing fence lines and invisible fences.

"The removal of physical fencing is a wonderful thing for the appearance of the woodland and the sense of freedom it gives. Thank you!"

2019 consultation response

4.1.6 Woodland

Management of Fleet Wood and New Coppice (two blocks of semi-natural ancient woodland) will continue, as in recent years, to use minimum intervention, allowing the natural woodland process to continue with minimum disturbance.

The remnants of old beech and oak coppice stools and the presence of remnant hedges on old wood banks indicate these were actively managed the past. Restoration of the ancient coppice is likely to be difficult because of the condition of the stools, so starting new adjacent areas may be more productive.

It is uncertain if the hazel along Burnham Walk was formally coppiced or if the stools are naturally developed. A coppice regime attempted here in the past had limited success so this has been discontinued; grazing will help to maintain the network of clearings left by the coppice work. The soil type in this area encourages a different range of plants to those found elsewhere.

Natural regeneration of beech is generally good within the Beeches but few oaks reach the sapling stage, although there are often seedlings. Gaps in the age structure of both species could be addressed by the veteranisation of larger trees in the future, if needed, and by protecting seedlings during episodic periods of regeneration.

Target: create a new trial area of oak coppice.

Achieved by: scrub management on McAuliffe's Drive and cutting oak saplings of suitable height to create coppice. For first few years, protect using methods that are effective against deer and rabbits.

Target: explore the feasibility of creating/ restoring beech coppice stools or hedge banks and trial if appropriate.

Achieved by: researching work carried out in other parts of the UK, identifying suitable locations for small scale trials and monitoring the response.

Target: area along Burnham Walk to be left as naturally developing woodland with minimal intervention.

Achieved by: cutting of occasional hazel stems and maintaining dead/live hedges around swallow holes.

"I love the autumn leaves. Great place for walking and being at one with nature."

2019 consultation response

4.1.7 Ponds

A review of the Top and Middle Ponds in 2016 recommended a range of practical work to improve their conservation value that included regular small-scale tree clearance to maintain the edges in dappled shade, and more substantial silt removal using contractors with large machines (at significant cost). Major silt removal, using contractors, was last done in 1994, although there has been small scale work since.

Both ponds have suffered from introductions of exotic species (terrapins and goldfish for example) and are at risk of colonisation by invasive plant species.

Top and Middle Pond have concrete outflows that are not particularly good for nature conservation but changes to improve this would be very expensive. A minor leak to the dam of Middle Pond requires repair but, as this is not urgent, will only be repaired when funding has been sourced. If any changes are done it is important to ensure that there are no significant alterations to the hydrological levels upstream of the dams.

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

Achieved by:

- following the pond management plan including annual cutting of trees overhanging Upper and Middle ponds and using contractors with specialist machinery to remove silt, ideally off site, or onto non-sensitive areas;
- regular volunteer tasks to keep a channel open after silt removal;
- removing any exotic species and carrying out publicity campaigns to try to prevent further introductions.

93% of those surveyed thought the management of ponds was appropriate.

2019 consultation response

Swilly Pond is a natural swallow hole. In recent years the pond has rarely held large amounts of water for long and the growth of trees is encroaching it. Ideally the area around the pond should be grazed but logistically this is quite difficult to achieve.

Target: Swilly Pond to be managed in the most appropriate way for wildlife.

Achieved by:

- carrying out better recording of water flows, taking cores to look at the seed bank, trialling silt removal through scrapes, especially on the western side and pollarding willows in rotation to reduce shade while still keeping a barrier between the pond and the road.
- drawing up a longer-term plan for management, likely to include scrub management, silt removal and grazing.

4.1.8 Actions for individual species

As a general principle the management of Burnham Beeches concentrates on habitats rather than individual species but sometimes work has to be more targeted, either to encourage key species or to discourage invasive/introduced species that threaten the survival of native ones.

Although regularly controlled in agricultural systems, it is not appropriate to remove ragwort at Burnham Beeches. The levels are not of concern to the grazing livestock and many invertebrates are reliant on ragwort.

Nests of oak processionary moth (OPM) have not yet been recorded in the Beeches, but it is spreading from the London area: nests are likely to be found soon. The caterpillar stage of this moth can have serious impacts on human health due to the irritating hairs which cause rashes and breathing difficulties. Large numbers of caterpillars may also heavily defoliate oak trees which can cause additional stress on the ancient pollards. Contractors will be needed to remove the dense silken 'nests' of caterpillars; spraying is an option but will be avoided if possible due to the impact on other moth species; it will require consent from Natural England.

"An incredibly important site biologically."

2019 consultation response

Target: no non-native species.

Achieved by:

- removing turkey oak, Japanese knotweed, goldenrod, rhododendron and other undesirable species (including aquatics) as they are discovered;
- drawing up a plan for control of OPM if/when necessary (accepting that complete elimination may not be possible/desirable).

Target: maintain balance between conservation of wood ants and their impacts on other organisms.

Achieved by: removing nests where they occur close to houses or the café/toilet area, south of Lord Mayor's Drive and within live pollards; translocating nests to aid conservation of species at other sites; reviewing the impact of wood ants at Burnham Beeches.

Wood ants are uncommon, but they are also active predators of caterpillars and other invertebrates, some of which may be rare. Management aims to balance encouraging the wood ants to flourish with ensuring they do not harm the populations of other species.

Target: promote the growth and survival of certain key species e.g. juniper (shown below), *Sorbus thuringaica*, *Zygodon forsteri*, *Pyrenula nitida*, keeled skimmer dragonfly, adders, lesser spotted woodpecker etc.

Achieved by: checking and periodically carrying out positive management; keeping aware of and encouraging initiatives to aid recovery of species as needed.

4.1.9 Recording, monitoring and research

Knowing what rare and threatened species live in Burnham Beeches is essential for us to plan management works to ensure that they benefit from our work and are not adversely impacted. This can be challenging: many of these species are small and/or hard to find or identify.

Moss training day.

It is now over 25 years since the last major inventory work was carried out and some groups have never been surveyed other than as part of short field meetings. There has been recent work on the plants but it would be helpful, especially for invertebrates, to repeat some of the surveys. This may be a particular challenge in the current financial climate.

As habitat restoration progresses and areas change, the associated fauna and flora will also change. Throughout all our work it is important to record actions that are carried out and to evaluate the success of techniques used. In addition, long term monitoring is especially valuable because it also provides data showing how species and habitats are being affected by climate change that can be used to inform mitigation and response measures.

Burnham Beeches contributes to many national monitoring programmes: the data gathered informs not only the work carried out on the nature reserve but also across the country. Research projects add to the information available about Burnham Beeches and can influence activities beyond the Beeches too. Biological information is held on a RECORDER database.

Examples of desirable projects include studying the impacts of pollard restoration and grazing on other organisms, the pollards themselves and key species such as grey squirrels and wood ants. There is a need for a rolling programme of inventory work.

Target: understand better the impact of our habitat restoration work on rare and threatened invertebrates.

Achieved by:

- projects to inform the management process on key groups, in particular invertebrates such as spiders, beetles and flies, including updated inventories;
- periodic monitoring of specific plant species.

Target: continue long term monitoring of key attributes.

Achieved by:

- undertaking actions outlined in the 'Review of Monitoring' and revising this review every 10 years;
- continuing to be a part of the Environmental Change Biodiversity 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 the CSS grant.

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

Achieved by: casual recording of species information and commissioned 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 (e.g. lichen quadrat locations) as well as static rare species and broader areas of interest (e.g. reptile hibernacula and summer feeding areas).

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; commissioning projects and experiments relating to Burnham Beeches where relevant.

Above: sorting and identfying invertebrate samples.

Far left: bat monitoring.

Left: dust and ammonia monitoring.

Managing for the influence of climate change

It is projected that climate change could substantially change Burnham Beeches. As outlined in section 2.1 this could result in different tree species becoming dominant and a different ground vegetation. Managing with this in mind is difficult because of the unpredictability and potentially quick time scales compared with the life cycle of our 500 year old trees. The best options, as we understand them at the moment, have been included in the management plan under the relevant sections. These include:

- creating pollards from a wider range of tree species than beech and oak, including whitebeam, hornbeam, holly and willow;
- being flexible about the composition of the ground vegetation that develops in the wood pasture;
- retaining a higher density of beech trees on the north facing Mendelssohn's Slope, the part of the Beeches most likely to remain cooler and moister for longest;
- trying to reduce stress on trees from causes over which we have some control;
- creating and maintaining mosaics of shaded and open habitats that are blended so species are better able to move across the area;
- working with others to make better connections across the wider landscape and to develop habitat that is suitable for the species found in Burnham Beeches;
- ensuring that recognition is given to the contribution of the nature reserve to carbon sequestration through the soils and vegetation of semi-natural habitats as well as trees.

"I walk a lot in the Beeches and notice many people seem disengaged with nature/ surroundings ... help people and in in particular children to engage with the Beeches - using their imaginations, not relying on pre-prescribed activities ."

2019 consultation response

Climate change presents a threat to the beech trees.

Reptiles and amphibians are threatened by habitat loss and fragmentation.

Bees and many other insects are being affected by agricultural and garden pesticides.

4.1.10 Buffer land

The major long-term threat to the Beeches is that it will become an isolated island within a sea of urbanisation and intensively managed land. A well connected landscape is more resilient to external threats and species are more able to thrive if they can move around a larger area and are not restricted to a small piece of land. Buffering can help reduce the impacts of fragmentation. This may be achieved by acquiring land that will act as a buffer to Burnham Beeches (and which may also 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 the close dialogue with planning authorities and other bodies whose decisions might have an impact upon Burnham Beeches.

Target: work with neighbouring landowners to enhance the management of land adjacent to the Beeches, making it better for biodiversity.

Achieved by: taking every realistic opportunity to help create buffers for Burnham Beeches; working with neighbouring landowners to try to improve their land for nature conservation.

Target: increase awareness in the local community of the dangers of fragmentation and loss of biodiversity.

Achieved by: informing the public of the importance of this work.

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; lobbying local councils to ensure compliance with the Habitats Regulations with respect to development.

Nature-friendly patches of long grass, scrub, flowers and/or ponds in neighbouring gardens will help wildlife spread out of Burnham Beeches and into the surrounding area.

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 nature reserve.

4.2.1 Access and recreation

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

Surveys have shown that 90% of visits are made from within 10km of the Beeches; it is an important part of the Buckinghamshire green spaces. 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 activities of some visitors can detract from the enjoyment of others if not carefully managed, as well as having inadvertent adverse impacts on features of nature conservation importance.

As noted in section 2.5, a lot of dogs are brought to Burnham Beeches each year, and this has a big impact on other visitors and wildlife. Many nature reserves do not allow dogs, or only allow them on leads, and this could be a long term aspiration.

Work carried out during the process of producing the SBDC local plan has acknowledged that recreation pressure is likely to increase as more houses are built in the area around Burnham Beeches and that the increase would be detrimental to the habitats that are protected under the SAC legislation. Mitigation is planned in partnership with City of London officers.

The vision is for Burnham Beeches to be a place for quiet, informal and responsible recreation. Although it is not an appropriate place to have a formal playground, some facilities are provided to enhance enjoyment. Access for the less able is also encouraged. Regular small-scale events such as guided walks help people to understand more about the nature reserve and the occasional bigger event is helpful as long as it does not compromise the conservation value of the nature reserve.

Target: ensure an accurate count of annual visitor numbers is obtained; use this information used to guide access strategies.

Achieved by: automatic car counters and calibration every 10 years through manual counts and checks (unless carried out as part of other projects).

Target: establish levels of visitor satisfaction.

Achieved by: a questionnaire every five years (if no other public consultation is held) and taking any appropriate actions.

Visitor count, 2015.

Target: service key visitor needs.

Achieved by: café to be open at least 360 days per year; toilets to be well maintained and open at least 360 days per year; car parks to be well maintained; entrances and gates to be well maintained and provide clear information.

Target: ensure Burnham Beeches is clean and well presented.

Achieved by:

- reviewing litter bin provision and removing bins where possible;
- providing and servicing recycling bins in necessary locations;
- encouraging people to take their litter home;
- encouraging recycling;
- removing fly tipping;
- picking up litter weekly and as found;
- reviewing the potential for using PSPOs for enforcement of other activities such as littering;
- employing a specialist part time member of staff to lead on waste clearance and recycling;
- encouraging volunteer litter pickers.

Target: limit erosion and other damage by visitors.

Achieved by:

- encouraging the use of existing tarmac roads for walking;
- surfacing key paths using local gravel and maintaining in good condition (whilst retaining some natural path edges for bees and wasps that require exposed bare ground for nesting);
- using dead hedging or other barriers around sensitive areas such as old trees and maintaining in good condition;
- focusing visitor services on the Main Common area as a 'honey pot';
- maintaining the easy access path network in good condition and installing edging;
- raising visitor awareness of erosion issues;
- keeping cycling and horse riding to tarmac roads;
- consider using temporary fencing to allow areas to recover from trampling;
- maintaining bridges and boardwalks in good condition;
- trying to avoid letting easy access path material wash into Top Pond;
- introducing and implementing a no BBQ policy.

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' including weekend use if feasible and seeking grants to replace it when necessary;
- administering the 'zapper' access to the car free zone.

Target: keep car crime and antisocial behaviour to a minimum.

Achieved by: reviewing car park opening and closing times; liaising with police as required.

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

Achieved by:

- encouraging responsible dog ownership including highlighting to dog owners the impact of dogs not under effective control;
- research and consultation to keep up to date with best practice and legislation regarding dogs on nature reserves and dog fouling;
- maintaining infrastructure relating to PSPOs for dog related activities;
- three year review of PSPOs for dog activities and proposing alterations if necessary; renewing, including public consultation, as legally required;
- reviewing the provision of dog bins and dog bags; withdrawing the service if considered desirable or required by budget cuts and then ensuring good publicity and clear enforcement;
- implementing new initiatives;
- consider extending the dogs on leads area to reduce dog fouling and/or considering more dog free areas;
- surveying to monitor progress.

Target: produce an access strategy.

Achieved by: reviewing those for other sites and ensuring it includes -

- ideal visitor numbers,
- erosion control,
- access restrictions or 'honey pots',
- maintenance of access infrastructure,
- site opening and closing,
- visitor counts,
- ranger duties including byelaw and PSPO enforcement and links to the interpretation,
- transport and dog strategies.

Information gained from the LiDAR flight may help in assessing abundance of desire-lines. Green Flag criteria should be used if possible.

64% of non dog walkers and 27% of dog walkers agreed there should be areas where dogs are not allowed, to protect wildlife.

"I think there should be wildlife only areas, no dogs or people. A completely protected area."

2019 consultation responses

Erosion caused by visitor footfall.

Fungi confiscated from fungi pickers.

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

Achieved by: implementing the byelaws and fungi picking policy, and updating regularly.

Target: investigate ways of making the byelaws more relevant to today.

Achieved by: evaluating issues/problems and clarifying what can and cannot be dealt with under the byelaws; investigating the procedure to review byelaws (and implementing if necessary); rewriting the byelaws into plain English; holding an annual refresher for staff.

Target: widen uptake, acceptance and awareness of bio-security issues.

Achieved by: maintaining, regularly revising and implementing bio-security policy; promoting this to visitors; informing neighbours about the impact of dumping green waste.

93% of those surveyed agreed with proposals to help people enjoy the Beeches.

2019 consultation response

4.2.2 Interpretation, education and promotion

The popularity and location of Burnham Beeches presents an ideal opportunity for informal interpretation and formal education about the history and management of the nature reserve. This should be aimed at those who have the most impact now and those who will have an impact in the future. Any promotional work should not aim to increase visitor numbers.

Purpose of information and interpretation

- To help people enjoy their visit.
- To foster respect from visitors and others for nature conservation and cultural values.
- To promote responsible behaviour from visitors through clear messages about what is acceptable and what is not.
- To educate visitors so that they have a better understanding of their impact on the nature reserve and the wider environment.
- To inspire visitors to use Burnham Beeches sensitively and understand the concept of cumulative impact.
- To promote the role of the City of London in the protection and management of Burnham Beeches.
- To encourage financial support.

Key messages

- Burnham Beeches is a special place.
- It is a nature reserve, and the plants, animals and fungi that make it special are only still here because it is carefully looked after.
- There is nowhere else quite like it – it's amazing!
- Nature is important to all of us, we wouldn't survive without it.
- There are many threats to wildlife in general and the Beeches in particular.
- The City of London Corporation funds and maintains the Beeches (which is a registered charity) using staff who are skilled at what they do.
- This is of direct benefit to both local people and the wider world.
- Visitors and others can help us to keep Burnham Beeches special.
- All visitors need to respect the nature reserve to ensure it thrives.
- People can help by financially supporting the nature reserve.

Target groups

All visitors should be offered key information about the Beeches to aid their visit e.g. map, information about car parking, the unique and special nature of the reserve and PSPOs.

Regular users who walk every day or every week do not always appreciate the conservation status of the reserve or the consequences of their actions. Information could address, for example, how cutting the corner between paths erodes the site.

Interpretation material should be produced for **children of school age** i.e. primary and secondary schools, families and teenagers.

The perception that the Beeches is not visited by **the Slough community** has affected how it is valued by the neighbouring local authority. In addition, more urban residents may be less comfortable walking in natural areas.

The Beeches is one of the furthest points from the City and is therefore one of the least visited by the **City of London staff and members.** Ensuring that their understanding of the issues around the management of the Beeches is important in ensuring financial and other support.

The **Burnham Beeches and Stoke Common Consultation Group** helps with difficult decisions regarding management and access as well liaising between City of London staff and the wider community. Keeping the group up to date on key issues is valuable for all.

One to one contact

A regular staff presence offers both reassurance and a point of contact for many people. Face to face conversations are an effective way to target and deliver key messages to visitors but are frequently under-valued.

The use of 'pop-up' information in unusual places to reach visitors on their regular walks (raising issues about desire lines etc.) is something to explore.

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;
- Rangers to use a weekly two hour patrol and weekend shifts to engage positively with the public;
- targeted pop-up activities focusing on specific issues;
- 'Meet the Ranger' sessions, via the events programme.

Right: 'Meet the Ranger' sessions are an effective way to increase awareness and understanding of our work.

Discovering the reserve

Having basic information, like maps, available on site or for download is essential. A range of additional information is available in print and online including fact sheets on key issues and a historical trail. There is also a tree trail aimed at professional tree workers.

The Hillforts Project is likely to investigate options using augmented reality in 2020.

The sensory trail was installed in 2007 together with a soundtrack that could be downloaded from the website. The soundtrack is no longer available; some of the sculptures are deteriorating and need renewing.

The priorities for written interpretation and information are:

- information about the main facilities;
- additional information for visitors;
- information for people desiring more detailed information e.g. for school/ university projects;
- specific information for specialists.

> "Your maps and trails are very useful!"
>
> 2019 consultation response

Target: up to date and relevant literature and interpretation always available.

Achieved by:

- provision of map and fact sheets; producing new and updated versions as required;
- stocking on-site leaflet dispensers; leaflets also available from website and office;
- production of filming trail to include information about why the special nature of the Beeches attracts filming and why it is so heavily restricted;
- assisting the Hillforts Project with production of interpretation around the scheduled monuments, including augmented reality if appropriate;
- production of a new self-guided trail or augmented reality app focussing on nature conservation issues and/or an introduction to Burnham Beeches trail;
- investigating the production of a guidebook or comic book aimed at teenagers and producing if considered viable;
- obtaining funding for, updating and re-launching the sensory trail;
- promoting and maintaining the Historical Trail and Professional Tree Trail;
- considering a health/wellbeing trail, e.g. based around 10,000 steps.

On-site information needs to be well placed and managed to ensure that key messages reach visitors.

Information and interpretation signs

In the last 30 years a large number of signs have been put up in the Beeches. Information signs include those that are legal requirements (e.g. explaining to visitors about car parking and PSPOs), the large black Corporation boards and temporary signs (e.g. warning livestock are on site). Others offer interpretation and information about particular features of the Beeches. These include the permanent information panels, such as those at the pond and moat, and temporary signs used to explain management work that is going on. Small boards on gates, fences and by the permanent signs are used to publicise activities, projects, plans and news.

Target: only use signs that achieve a purpose; ensure these comply with best practice e.g. clear, concise English and legally compliant.

Achieved by:

- keeping information boards in good condition with accurate and up to date information;
- using temporary signs (including those about grazing) before and during the relevant habitat work;
- ensuring Corporation boards are safe and replacing if appropriate;
- ensuring all signs are clean, well-written and well-maintained.

Café area and information point

The zone around the café is a focal point for visitors. It presents a fantastic opportunity to inform and influence visitors.

The small information point has a permanent display and interactive activities, notice board, a bird box camera, leaflets and fact sheets. It was designed to be largely unmanned but is not particularly welcoming; regular visitors probably rarely enter. The displays are now 12 years old and need to be updated but this needs financial resources that are currently not available.

Target: up to date and relevant on-site information always available; opportunities taken where possible to inform people about key issues.

Achieved by:

- making full use of the café area to provide information;
- reviewing, updating and maintaining the information point (including applying for funding);
- exploring ways for volunteers to help visitors;
- exploring options for students to develop design and technology solutions;
- exploring options for a pop-up information hub.

Activities and events

The Rangers organise events in the Beeches ranging from gentle wildlife walks to large open days, art events and 'Meet the Ranger' drop-in sessions. There are many interesting and enjoyable ways to deliver key messages and opportunities to link with the popularity of green spaces for health and wellbeing.

The type and location of large events must be carefully considered. Events that simply use the Beeches as a venue can be popular, but the majority should aim to interpret the Beeches as a place of natural and historical significance. Promotion will be needed to ensure these are a success but the potential for increased damage through wear and tear by high visitor numbers must be considered.

Formal talks off-site to groups such as societies and clubs can be a good way to deliver accurate information to a large group and correct any misperceptions, particularly about contentious issues. Attendees can become important advocates for the Beeches. In addition, there is also merit in a slow 'drip-feed' of information that will feed into the wider community and become accepted as the norm.

Visits by City of London Members and Officers are an opportunity to promote the value of the Beeches and highlight challenges facing the reserve, helping informed decisions to be made that support the management plan.

Target:

- ensure events are enjoyable, well organised and easy to attend;
- demonstrate that people from Slough use and benefit from the reserve.

Achieved by:

- mantaining an easy to use booking system;
- gathering feedback from activities and using to help plan future events.

Target: use activities and events to deliver key messages to target groups.

Achieved by:

- an events programme that has 20-30 low-key events such as guided walks, 'Meet the Ranger' sessions and half-term trails;
- hosting or facilitating one to two larger events each year with defined objectives to support conservation aims;
- investigating new events for specific target groups, such as young adults and those less comfortable with visiting a nature reserve/open space;
- hosting health and well-being events such as Simply Walk and exploring new options;
- promoting events and information through a variety of different media, including annual events programme, and investigation of new methods to reach target audiences;
- adherence to the events policy and being mindful of the impact of events when drawing up the events programme;
- at least six talks to clubs and societies per year, within a radius of 10 miles from Burnham Beeches but extending further for natural history or other specialist groups;
- hosting visits from Members and Officers;
- exploring options for events that link to public transport.

Schools

Schools need to get the most from their visit whilst making a small footprint on the nature reserve.

With current staffing levels it is rarely possible to give a bespoke service and, although children are a target group for interpretation, the emphasis has to be on providing the most information with the least cost and staff time.

Where it is possible to work directly with schools it is important that a variety of schools benefit and not just the same small few. While it is tempting to help those who have staff with an active interest, those without this expertise may benefit more.

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

Achieved by:

- producing and promoting educational material via the website; recording which groups use it;
- supporting where possible visits by schools and youth groups;
- maintaining a licence system for all school groups and keeping records of those who visit.

Keeping people up to date on our activities and issues (websites and social media)

Disseminating accurate and up to date information about plans and projects at the Beeches is important. Although not all local residents visit the Beeches regularly, they still influence plans and projects: the monthly updates on site noticeboards are not enough.

The expensive paper newsletter has been replaced by an e-newsletter that is available online and sent to those on our mailing list, but, again, this is only read by those who are looking for it. The local parish magazines and equivalent documents are read by a wider cross section than regularly visit the Beeches.

Social media is an increasingly important method of getting messages across and raising awareness. Currently the Beeches is on Facebook and Twitter but not Instagram. Videos (or links to them) circulated on social media can be used to showcase our work.

The web pages need to be kept up to date with information relevant to visitors.

> "I disagree with the statement that the Beeches does not have a playground. The Beeches IS a playground. It's amazing!"
>
> 2019 consultation response

Targets:

- up to date information available on and off site;
- regular information updates on activities and issues at the Beeches for visitors and local residents;
- regular messages about the impact of visitors and how they can change their behaviour in small ways to make a difference.

Achieved by:

- regular contributions to local parish magazines and equivalent;
- sending positive and informative messages at least five times weekly on a variety of social media platforms (combining posts when possible to maximise reach with minimal effort);
- promoting social media to ensure increasing numbers of followers/likes or equivalent;
- monthly updates on the central website and on-site notice boards;
- keeping web pages up to date;
- producing short videos and circulating on social media.

Monitoring the effectiveness of interpretation

In order to ensure that the key messages are clearly received and acted upon it is important to monitor the impacts of the interpretation. This should be done more frequently than the 10-yearly consultation for the management plan production.

Target: ensure messages delivered through interpretation are clearly understood and that they bring about a change in behaviour.

Achieved by: devising a monitoring system to regularly evaluate the success of interpretation.

4.2.3 Community involvement

Many of the projects at the Beeches would not be possible without the help of volunteers. They already provide many hours of help, primarily through the Thursday and monthly weekend practical tasks, a Tuesday eco-team and administrative help, but more are always needed. New roles could be to provide information or greet visitors at weekends or be 'livestock lookers'.

Burnham Beeches is highly valued by local residents and 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 and site management.

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

Achieved by:

- holding an annual review meeting to plan tasks and produce an annual task plan;
- holding regular work tasks;
- increasing volunteers by promoting activities, a yearly autumn recruitment drive, producing a list of 'jobs vacant' for volunteers and encouraging work experience students;
- widening the range of volunteer tasks;
- training volunteer leaders;
- assessing volunteer satisfaction regularly and addressing issues through the management plan review.

Target: continue to be an active part of the local community.

Achieved by:

- holding at least two meetings of the Burnham Beeches Consultation Group each year and review membership of group at regular intervals;
- publicising issues relevant to Burnham Beeches at local events such as Parish Council meetings;
- engaging with the Parish Councils over production of the neighbourhood plans;
- creating opportunities to promote Burnham Beeches to local people;
- writing to new residents to welcome them to the Beeches and make them aware of the special nature of the site and how they can help to look after it.

4.2.4 Liaison with other public open spaces

Burnham Beeches is one of several local nature reserves, commons and country parks. Changes (e.g. an increase in car park charges) or experiences (e.g. site incursions, invasive species) at one may impact others. Regular liaison between sites is important and, in addition, some resources may be shared, potentially reducing costs. Shared information can also be helpful.

Target: maintain good working relationship between site managers of other local countryside sites open to the public.

Achieved by: a quarterly formal meeting and regular contact at Ranger and managerial level.

4.2.5 Public roads through Burnham Beeches

Several public highways pass through the Beeches, dissecting and eroding habitats, causing pollution, destroying the tranquillity and making it unsafe for visitors to walk and cycle along the roads. Using opportunities such as County transportation strategies and Local Development Plans every attempt should be made to effect a positive impact on these roads and the traffic traveling along them. Encouraging sustainable travel to Burnham Beeches, and surrounding areas should be done where possible.

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

Achieved by: working with Buckinghamshire Council, other local authorities and developers to reduce traffic flow and speed through the Beeches.

40% of respondents came to Burnham Beeches more than once a week.

69% of respondents arrived by car.

2019 consultation response

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 Monuments associated with Burnham Beeches that need to be conserved, as well as several ancient wood bank systems and various smaller structures; some of these date from the Iron Age and others are more modern, such as those dating from the Second World War.

Hartley Court Moat and Seven Ways Plain hillfort consist of banks and ditches and both have old pollards on them. These need to be managed as described in section 4.1.1 but younger trees should be discouraged to prevent future damage. Keeping an open aspect to these monuments is beneficial for the management and also helps visitors to appreciate them.

The Pound is a simple brick structure requiring regular maintenance.

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. A book listing other designated trees and memorial features is also maintained.

Target: improve and protect the moat and maintain it in good condition.

Achieved by:

- laying terram to protect banks where the second access point has been made;
- preventing damage to the banks by deterring young trees from growing; ensuring habitat work does not have a negative impact;
- carrying out positive management such as tree clearance where possible, but ensuring felling does not adversely impact species such as lesser spotted woodpacker;
- liaising with Historic England.

Cattle grazing at the moat.

Target: maintain the hillfort as open wood pasture whilst keeping the existing veteran trees.

Achieved by:

- tree and scrub clearance as outlined in the plan that will be produced as part of the Hillforts Project and removing scrub at intervals afterwards;
- protecting banks from damage by grazing livestock;
- liaising with Historic England.

Target: maintain the Pound in good condition.

Achieved by:

- controlling weeds on the ground and climbers on the walls each year;
- repairing small scale damage as it occurs;
- liaising with Historic England.

Target: ensure no unnecessary damage to other features of historic interest.

Achieved by:

- grazing risk assessment each year;
- blocking desire lines as needed;
- avoiding unnecessary signs and other structures near features;
- avoiding damage by habitat work.

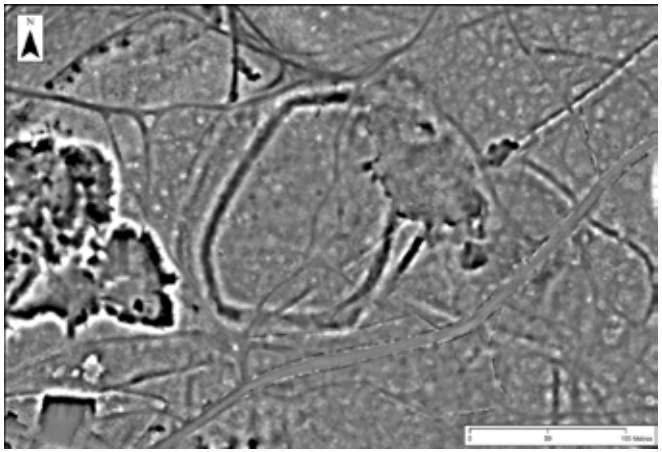
Target: maintain a good archive of photographs, pictures and historic objects.

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: care for ceremonially planted trees and memorial features.

Achieved by: maintaining ceremonial book and maps; rolling programme of inspection for Lord Mayor's trees.



LiDAR image of Seven Ways Plain hill fort. The area to the left shows the remains of quarrying. Copyright Chilterns Conservation Board.

4.3.2 Geology/Hydrology

The hydrology of Burnham Beeches has been well studied because of the gravel quarry just to the south at East Burnham: whilst this is working, 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 circulated to interested partners and any concerns raised with the Mineral Planning Authority (Buckinghamshire Council).

The small quarry near Victory Cross is a regionally important geological site.

Target: no avoidable harmful changes to the hydrological regime.

Achieved by: consultation and participation in hydrological issues related to the quarry and taking expert advice as needed.

Target: maintain the quarry in the Beeches in good geological condition.

Achieved by: removing vegetation as required.

"I think wildlife safety is paramount."

2019 consultation response

4.3.3 Bats and other protected species

All bats and their roosts are protected in law: all trees must be inspected before any surgery or felling. Surveys should also be made before any work on trees and improvements made to bat habitats wherever possible. In addition, general bat surveys should be carried out to ensure that the best information is available about where and how bats are using Burnham Beeches. Full details are given in the bat policy.

Target: prevent any harm to bats, their roosts, or other protected species.

Achieved by: implementing the bat policy; ensuring the needs/legislation regarding other protected species like great crested newts are taken into account when carrying out habitat work.

4.3.4 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 (whether they are carried out by the City of London or a third party) that may cause a significant adverse impact to the site are also subject to a Habitats Regulations Assessment and potentially also an Appropriate Assessment.

Grants such as CSS also have obligations that have to be met.

Target: fulfil all legal requirements.

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

Target: ensure no preventable harm to protected habitats and species.

Achieved by:

- working with Natural England to ensure appropriate monitoring and work;
- carrying out Habitats Regulations Assessments and applying for SSSI consent and derogations as needed.

4.3.5 Tree safety and sightlines

Tree safety is a legal obligation and all inspections and subsequent work must be carried out within a required time span as detailed in the tree safety policy.

Some verges along roadsides are mown to ensure good sightlines for traffic. This should continue but there is no need to mow unless necessary. Mowing regimes may need to be altered as the grazing area is increased. In some places, sightlines need to be maintained by cutting scrub rather than grass.

Target: identify and deal with all tree safety issues.

Achieved by: carrying out tree safety surveys, and subsequent work, to City of London standards as required by annually reviewed policy.

Target: clear sightlines on public and internal highways.

Achieved by: work programme outlining which junctions need grass cutting and where scrub clearance is necessary; carrying out annually.

4.3.6 Health and safety

Target: comply with all health and safety obligations.

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

4.3.7 Fencing, gates, cattle grids

Regular maintenance of infrastructure associated with the livestock is required. This includes fences, invisible fence systems, gates, cattle grids, water troughs and all associated equipment. All gates and cattle grids should be safe and appropriate.

Gateways should be accessible and ditches and banks maintained to prevent unwanted encroachment by vehicles.

Target: keep all livestock infrastructure and vehicle gateways functional and in good condition.

Achieved by: regular checks; new water troughs, cattle grids etc. as required.

> "I think you do not make enough noise about what you do for people here."
>
> 2019 consultation response

4.3.8 Illegal access

Target: prevent illegal encroachment and ensure ditches, banks and posts prevent damage to the reserve by vehicles.

Achieved by:

- regular inspections and repairs to secure boundaries;
- providing clear contact details and responding effectively to incidents;
- maintaining ditches and banks in good condition;
- keeping estate boundaries clearly determined;
- keeping wayleaves and licences up to date.

Staff and volunteers carry out a wide range of maintence work to keep the Beeches safe and to a high standard. L-R: clearing leaves from tarmac roads; clearing storm damage; cleaning gates.

4.3.9 Buildings, roads and furniture

The Burnham Beeches estate includes an office, the café/information point complex, staff lodges and a number of barns.

The internal roads are surfaced with tarmac and need to be kept to a suitable standard, as do culverts where roads, or major paths, cross streams.

Gates at entrances and car parks and furniture such as bollards and posts 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 high standard.

Achieved by: working with the City Surveyor's department to update and implement the cyclical work plan according to the responsibilities set out in the Service Level Agreement.

4.3.10 Utilities

Any maintenance or replacement of underlying pipework for water, gas and other utilities requires careful management to minimise damage to the Beeches. It is also essential that habitat and other work does not damage underground services.

Target: ensure the location and details of all utility lines are mapped, kept up to date and easily available.

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

Target: prevent any harm to Burnham Beeches during works on utility lines and associated infrastructure.

Achieved by: liaising with companies and City Surveyor's to ensure due care and diligence.

4.3.11 External accreditation

Reviewing the success of our work ensures that the management remains of high quality and that we continue to lead the way in sustainable practices.

Target: retain Green Flag and Green Heritage awards annually.

Achieved by: applying for accreditation and meeting the standards for performance.

"I am appalled that you have to spend so much money on removing litter. It's a sad reflection on the value people put on this free resource."

2019 consultation response

4.3.12 Finance and income

The background financial climate as outlined on p.8, is likely to require difficult decisions to be made about the provision of some services. Increased income generation can potentially offset some of the need for savings, but the current level is unlikely to be sufficient.

Charging for filming activities and certain events and encouraging donations already takes place. Charging for licences for people who are using Burnham Beeches for commercial gain will be introduced. Existing systems, such as the supporter's badge and legacies, should be better marketed.

Changes to the car park charging structure is likely over the life of this plan. Increasing car park income by attracting more people to Burnham Beeches is not an option because the existing number of visitors is already damaging the fabric of the nature reserve.

Target: continue to implement projects to raise money that do not compromise other legal obligations.

Achieved by:

- charging for use of the car parks, maintaining the payment and enforcement systems; reviewing charges and payment methods as needed;
- charging for commercial activities on the site;
- encouraging regular donations;
- legacies;
- enforcing wayleaves and other licences.

Action: meet annual budget requirements and meet/exceed income targets set by the City Corporation's 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;
- allowing filming under strict guidelines and where it does not harm the conservation objectives (see filming policy for details).

4.3.13 Emergency planning

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

Target: keep emergency plans available for instant use.

Achieved by: review at least every three years.

Holly being cleared, chipped and saved for mulch.

4.3.14 Being mindful of the impact of our activities

The management of Burnham Beeches aims to maintain and improve the conservation and historic value of the nature reserve, and ensure visitor enjoyment. However, these actions also have the potential to cause negative impacts.

All contractors working in the Beeches follow a bio-security protocol to reduce the chance of invasive species and diseases being introduced.

A sustainable fleet and plant management plan has been drawn up to help reduce environmental impacts while providing the minimum amount of machinery required to deliver the services described in this management plan in a safe and effective manner.

Disposing of waste is a challenge and we try to adhere to the hierarchy of reduce, reuse, recycle. Tailoring our activities to reduce waste and be energy efficient is done where possible and many of the buildings are designed with energy efficiency in mind: for example, some have photovoltaic cells for electricity generation. Litter from the Beeches is sorted and recycled and some green waste, such as wood chip is composted for mulch. Dog faeces are not currently composted but this may be possible in the future.

Target: reduce the environmental impact of vehicle use.

Achieved by:

- following the protocol on p.67;
- exploring options for weather proofing the Polaris to keep people and equipment dry;
- leaving the MEWP out overnight when working on site;
- producing a map showing the only paths suitable for vehicles without low impact tyres;
- considering if other paths would benefit from wood chip for added protection.

Target: reduce the environmental footprint of other activities.

Achieved by:

- following the bio-security policy;
- regular review of activities;
- exploring options for composting dog faeces.

Target: keep the environmental impact of the office to a minimum.

Achieved by: photo-voltaic panels; keeping water, paper and power use to a minimum.

Protocol to minimize soil compaction and erosion by staff, volunteers and contractors

Wherever possible vehicles should not be driven off the tarmac roads.

- The tarmac roads or main tracks should always be used in preference to driving off-road. There is a clear priority of use from tarmac roads to the main tracks (Victoria Drive/Burnham Walk) to smaller tracks and no track.
- Vehicles should not be driven off-road to reduce travel time or take a shorter route.
- Vehicles should not be driven around gates or removable bollards to save time.
- Extreme care should be taken when turning corners with larger vehicles to avoid path edge erosion and 'wear and tear' on woodland or grassland areas.

If off road travel seems unavoidable, staff should consider:
a) if the journey is really necessary and b) whether the type of vehicle is appropriate.

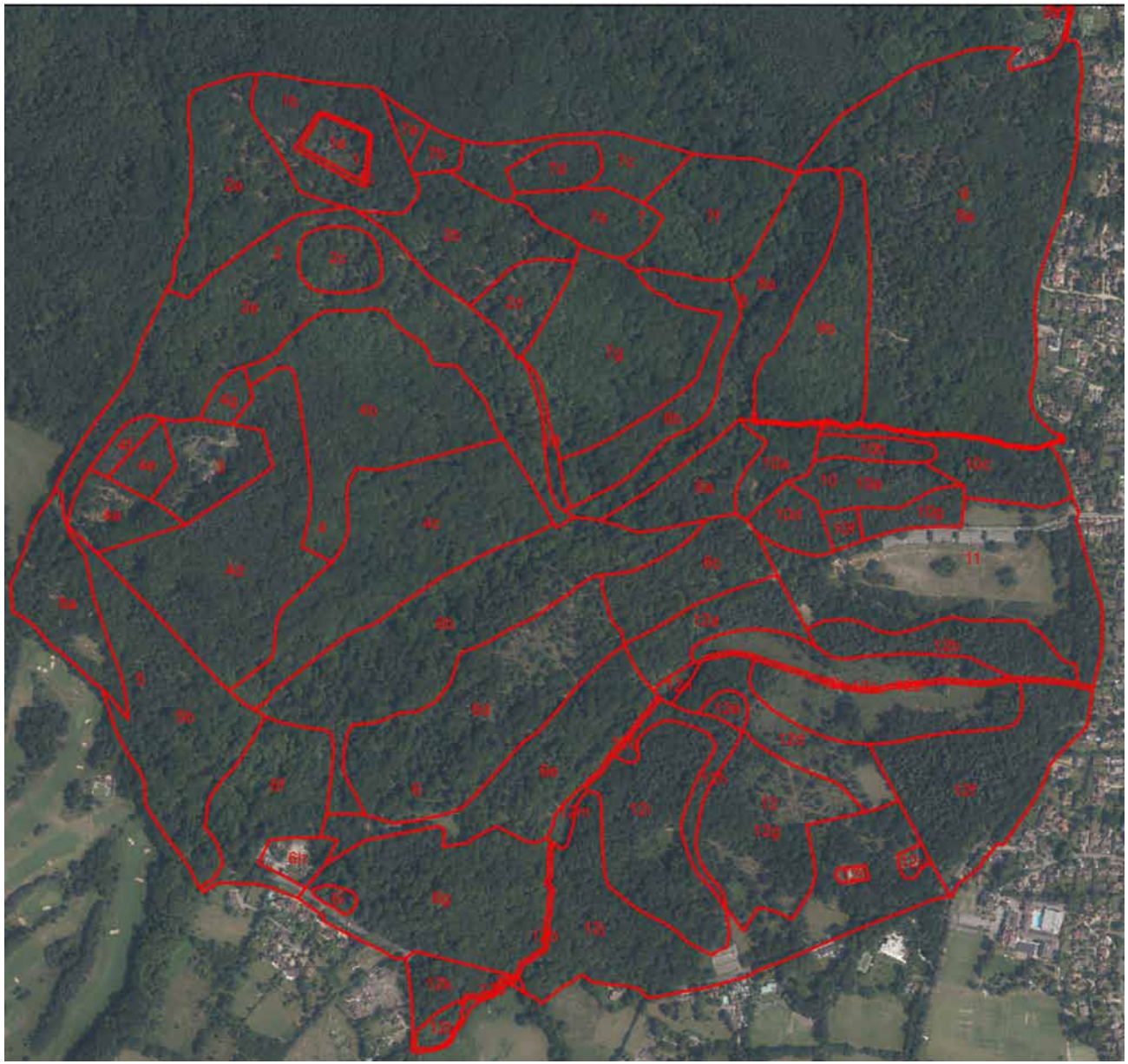
- Staff, volunteers and contractors should consider the position of things they will have to go back to and make sure these are in easy reach of a road or main track.
- Smaller vehicles should be used where possible. Light vehicles with low ground pressure tyres are always better because they compact the soil less than heavy vehicles with normal tyres.
- Corners between surfaced paths should not be cut, either on foot or when in a vehicle.
- Staff and contractors should be aware of the ground conditions and select routes to avoid sensitive species.
- Driving within the root protection area of veteran trees (15 x the tree diameter) should be avoided if at all possible, especially in vehicles that are not low impact.

5.0 Work programme 2020-2030

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

The table on pages 69-79 summarises when the major projects will be undertaken at Burnham Beeches in the next 10 years. These tables also detail where work will be carried out in each year of the management plan according to the site compartments which are shown on the map. An annual plan and details of each project further guide the work.

Other documents steer our work too. For example, the Open Spaces Department Business Plan is a City of London document listing the key projects for the Department and each open space. This aims to enrich people's lives by enhancing and promoting access to ecologically diverse open spaces and outstanding Heritage assets across London and beyond. The Beeches has grant funding from Natural England in the form of a Countryside Stewardship Scheme Agreement. This gives an area payment for some habitat types and also money for some specific projects.



Burnham Beeches compartment boundaries and numbers

	OBJECTIVE 1: Conservation		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Code	**Pollards and wood pasture**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.1	Practical work on old pollards **(CSS)**	1, 2, 5, 6, 9	1	1	1	1	1	1	1	1	1	1
1.2	Quick check on old pollards	1, 2, 5, 6, 9	1		1		1		1			1
1.3	Revise old pollard work programme	1, 2, 5, 6, 9									2	1
1.4	Install, replace and check cables/props	1, 2, 5, 6, 9	1	1	1	1	1	1	1	1	1	1
1.5	Old pollard techniques and research	Offsite/whole site	3	3	3	3	3	3	3	3	3	3
1.6	Create new pollards **(CSS)**	Whole site	2	2	2	2	2	2	2	2	2	2
1.7	Young pollard rotational cutting **(CSS)**	Whole site	3	1	2	1	2	1	2	1	2	1
1.8	Revise young pollard work programme	Whole site									2	1
1.9	Young pollard experimental plots	5, 9, 12	3	3	3							
1.10	Explore options for using wood from young pollards	Whole site		2	3	2	3	2	3	2	3	2
1.11	Dead wood survey	1, 2, 4, 5, 6, 7, 8, 9		3	2	2						
1.12	Create habitat piles and veteranise trees	Whole site	2	2	2	2	2	2	2	2	2	2
1.13	Wood pasture restoration **(CSS)**	2, 5, 6, 10	2	1	2	1	2	1	2	1	2	1
1.14	Wood pasture restoration triangle at Victory Cross	10	2	2								
1.15	Burning platform	Whole site	2	2	2	2	2	2	2	2	2	2
1.16	Scrub rotational cutting and review	Whole site	2	2	2	2	2	2	2	2	2	2
1.17	Bracken control	Whole site	2	2	2	2	2	2	2	2	2	2
1.18	Heather regeneration and peat cutting	12	3	2	3	3	33	2	3	3	3	32
1.19	Mowing of wood pasture/scrub	11 (whole site)	1	1	1	1	1	1	1	1	1	1

Work programme years run from 1 April to 31 March. Each numbered row is associated with a detailed work plan. Projects part-funded by the Countryside Stewardship Scheme grant are marked **(CSS)**; the grant also requires the management of wood pasture and ponds to fulfil specific critera.

Projects are categorised as: **1** - essential; **2** - highly desirable; **3** - desirable

White numbers show when a project will be focussed on.

	OBJECTIVE 1: Conservation		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Code	**Grazing**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.20	Graze wood pasture and husband stock	Whole site	1	1	1	1	1	1	1	1	1	1
1.21	Expand grazing area	Whole site	2	2	2	2	2	2	2	2	2	2
1.22	Review of grazing areas, fencing and methods	Whole site		2	1	2						
1.23	GPS collars	Whole site	3	2	2	2	3	3	3	3	3	3
1.24	Explore options for livestock volunteers	Whole site	2	2	2	2	2	2	2	2	2	2
Code	**Woodland management**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.25	Create new areas of oak coppice	7		3	3	2	2					
1.26	Investigate restoration of beech coppice	2					3	3	2			
1.27	Hazel coppice	8 (and all)	3	3	3	3	3	3	3	3	3	3
Code	**Ponds**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.28	Middle Pond dam	12m	2	2								
1.29	Upper and Middle Ponds - large scale silt removal	12n, 12m	3	2	2							
1.30	Upper and Middle Ponds - bank work	12n, 12m	3	2	3	2	3	2	3	2	3	2
1.31	Upper and Middle Ponds - silt removal by volunteers	12n, 12m	3	2	3	2	3	2	3	2	3	2
1.32	Swilly Pond - improve wildlife value	12l	2	2	2	3	3	3	3	3	3	3
Code	**Species management**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.33	Encourage desirable species	Whole site	2	2	2	2	2	2	2	2	2	2
1.34	Squirrel control	Whole site	1	1	1	1	1	1	1	1	1	1
1.35	Oak processionary moth	Whole site	1	1	1	1	1	1	1	1	1	1
1.36	Wood ants	Whole site	2	2	2	2	2	2	2	2	2	2
1.37	Non-native animals (Glis glis, terrapins etc.)	Whole site	2	2	2	2	2	2	2	2	2	2
1.38	Undesirable plants	Whole site	2	2	2	2	2	2	2	2	2	2

	OBJECTIVE 1: Conservation		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Code	**Biological monitoring and research**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.39	Review of monitoring and handbook	Off site	1				2					2
1.40	Monitoring for Countryside Stewardship Scheme	Whole site	1	1	1	1	1	1	1	1	1	1
1.41	Vegetation plots and annual report	4, 6, 8, 12	2	2	2	2	2	2	2	2	2	2
1.42	Grazing impact assessment	Whole site	2	2	2	2	2	2	2	2	2	2
1.43	Beech tree health	Whole site	2	2	2	2	2	2	2	2	2	2
1.44	Adder assessment	Whole site	2	2	2	2	2	2	2	2	2	2
1.45	Monitoring grazing on rare plants	Whole site	2	2				2	2			
1.46	Fixed point photographs	Whole site	3	3	3	3	3	3	3	3	3	3
Project	**Monitoring of local development**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.47	Lichen monitoring	6, 12	1	1	2	2						
1.48	Dust monitoring	6, 12	1	1	2	2						
1.49	Traffic counts	5, 9, 12	1	1	1	1	1	1	1	1	1	1
1.50	Hydrology	6, 12	1	1	1	1	1	1	1	1	1	1
Project	**Long term monitoring and other national schemes**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.51	Diffusion tubes (ammonia)	6, 12	1	1	1	1	1	1	1	1	1	1
1.52	Bird transects	9	3	3	3	3	3	3	3	3	3	3
1.53	Butterfly transects	Whole site	2	2	2	2	2	2	2	2	2	2
1.54	Rothamsted light trap	6h	2	2	2	2	2	2	2	2	2	2
1.55	Weather station	6h	2	2	2	2	2	2	2	2	2	2
1.56	Phenology network	Whole site	3	3	3	3	3	3	3	3	3	3
1.57	Bat transects/survey	Whole site	3	3	3	3	3	3	3	3	3	3
1.58	LTMN surveys (soil and vegetation)	Whole site	3			3	3	3	3	3	3	3

Key to projects: **1** - essential; **2** - highly desirable; **3** - desirable **when a project will be focussed on**

	OBJECTIVE 1: Conservation		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Research projects**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.59	Zygodon	Whole site	2	2				2	2			
1.60	Wood ants	6, 11, 12	2	2								
1.61	Pyrenula	6a	2	2				2	2			
1.62	Other research projects	Whole site	3	3	3	3	3	3	3	3	3	3
Project	**Inventory work**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.63	Bryophytes	Whole site	2									
1.64	Lichens	Whole site	2								2	2
1.65	Flowering plants	Whole site				2	2					
1.66	Fungi	Whole site					2	2	2			
1.67	Coleoptera	Whole site		2	2	2						
1.68	Diptera	Whole site			2	2	2	2				
1.69	Spiders	Whole site	2	2	2							
1.70	Other invertebrates	Whole site								2	2	2
1.71	Mammals and dormice	Whole site					2	2				
1.72	Bird survey	Whole site					2	2	2			
Project	**Recording and keeping up to date**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.73	Record species sightings	Whole site	3	3	3	3	3	3	3	3	3	3
1.74	Biological inventoryrecorder	Off site	1	1	2	2	2	2	2	2	2	2
1.75	Operational maps	Off site	2	2	2	2	2	2	2	2	2	2
1.76	Climate change	Off site	2	2	2	2	2	2	2	2	2	2

	OBJECTIVE 1: Conservation		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Preventing the Beeches becoming isolated ecologically**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
1.77	Planning applications	Off site	1	1	1	1	1	1	1	1	1	1
1.78	Slough Borough Council	Off site	1	1	1	1	1	1	1	1	1	1
1.79	Buckinghamshire Council/Local Plan	Off site	1	1	1	1	1	1	1	1	1	1
1.80	Buffer, link and expand	Off site	1	2	2	2	2	2	2	2	2	2
1.81	Public roads	Off site	1	2	3	3	3	3	3	3	3	3

	OBJECTIVE 2: People		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**People and access**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.1	Visitor counts	Whole site	2	2	2	2	1	1	2	2	2	2
2.2	Maintain traffic counters	11, off site	1	1	1	1	1	1	1	1	1	1
2.3	Count visitors to information point	11	2	2	2	2	2	2	2	2	2	2
2.4	Customer satisfaction questionnaire	Whole site					2					
2.5	Café and toilets open and in good condition	11	1	1	1	1	1	1	1	1	1	1
2.6	Café - tenant/licences	11	2	1	2	2	1	2	2	1	2	2
2.7	Car park maintenance	Off site	1	1	1	1	1	1	1	1	1	1
2.8	Car park charging infrastructure	11, 6, 12	1	1	1	1	1	1	1	1	1	1
2.9	Car park charging infrastructure review	Off site	1			1			1			
2.10	Entrances and gates maintenance	Whole site	1	1	1	1	1	1	1	1	1	1
2.11	Review litter bin provision	Off site	2	2	2							
2.12	Remove all litter and maximise recycling	Whole site	1	1	1	1	1	1	1	1	1	1

Key to projects: **1** - essential; **2** - highly desirable; **3** - desirable **when a project will be focussed on**

	OBJECTIVE 2: People		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	*People and access contd.*	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.13	Support volunteer litter pickers	Off site	3	3	3	3	3	3	3	3	3	
2.14	Review PSPOs for other activities	Off site	2			2						
2.15	Easy access path - surface and walking tunnel	6, 12	2	2	2	2	2	2	2	2	2	2
2.16	Maintain paths	Whole site	2	2	2	2	2	2	2	2	2	2
2.17	Bridges and boardwalks	Whole site	1	1	1	1	1	1	1	1	1	1
2.18	Protect sensitive habitats	Whole site	1	1	1	1	1	1	1	1	1	1
2.19	Desire line plan of action	Whole site	1	2	2	2	2	2	2	2	2	2
2.20	Implement no BBQ policy	Off site	1	2	2	2	2	2	2	2	2	2
2.21	Encourage access by the less able	Whole site	2	2	2	2	2	2	2	2	2	2
2.22	Bench survey and repair	Whole site	1	1	1	1	1	1	1	1	1	1
2.23	Implement PSPOs	Whole site	1	1	1	1	1	1	1	1	1	1
2.24	PSPO: flag the poo	Whole site	1	1	1	1	1	1	1	1	1	1
2.25	PSPO: transects	Whole site	3	3	3	3	3	3	3	3	3	3
2.26	PSPO: enforcement	Whole site	1	1	1	1	1	1	1	1	1	1
2.27	Renew PSPOs	Off site	1	1	1	1			1			1
2.28	Provide dog bags/bins	Whole site	2	2	3	3	3	3	3	3	3	3
2.29	Review provision of dog bags and bins	Off site	2	2	2							
2.30	Licence for commercial activities	Off site	3	2	1	2	3	3	3	3	3	3
2.31	Consider more dog-free/dogs-on-lead areas	Off site	2			1			1			1
2.32	Keep up to date with issues re. dogs on nature reserves	Off site	2	2	2	2	2	2	2	2	2	2
2.33	Implement requirements of the Local Plan	Whole site	1	1	1	1	1	1	1	1	1	1
2.34	Produce access strategy/carrying capacity	Off site	3	3	1	1	3	3	3	3	3	3
2.35	Implement fungi policy	Whole site	2	2	2	2	2	2	2	2	2	2

	OBJECTIVE 2: People		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	*People and access contd.*	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.36	Byelaws - clarification	Off site	2	2	3	3	3	3	3	3	3	3
2.37	Byelaws - enforcement protocol	Off site	3	2	3							
Project	**Interpretation**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.38	Rangering	Whole site	1	1	1	1	1	1	1	1	1	1
2.39	Rangers/operational manual	Off site	2	2	2							
2.40	Rangers 1:1 with visitors	Whole site	2	2	2	2	2	2	2	2	2	2
2.41	Out of hours service provision	Off site	1	1	1	1	1	1	1	1	1	1
2.42	Public events - low key	Whole site	2	2	2	2	2	2	2	2	2	2
2.43	Public events - medium/large	Whole site	2	2	2	2	2	2	2	2	2	2
2.44	Investigate new events	Off site	2	2	1	3	3	3	2	2	1	2
2.45	Promote events	Off site	2	2	2	2	2	2	2	2	2	2
2.46	Events policy	Whole site	2	2	1	2	2	2	2	1	2	2
2.47	Talks	Off site	2	2	2	2	2	2	2	2	2	2
2.48	Committee visits/culture board	Whole site	1	1	1	1	1	1	1	1	1	1
2.49	Health walks	Whole site	2	2	2	2	2	2	2	2	2	2
2.50	Map and fact sheets	Off site	2	2	2	2	2	2	2	2	2	2
2.51	Filming trail	Off site		3	2	3						
2.52	Hillforts interpretation	Off site	2	2	3	3	3	3	3	3	3	3
2.53	Conservation self-guided trail	Off site	2	2	1	1	3	3	3	3	3	3
2.54	Investigate guide/comic book	Off site	3	3	2	1	3	3	3	3	3	3

Key to projects: **1** - essential; **2** - highly desirable; **3** - desirable **when a project will be focussed on**

	OBJECTIVE 2: People		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	*Interpretation contd.*	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.55	Sensory trail	Off site	2	1	1	2	3	3	3	3	3	3
2.56	Historical/tree trail	Off site	2	2	2	2	2	2	2	2	2	2
2.57	Health trail	Whole site	3	2	1	2	3	3	3	3	3	3
2.58	Social media	Off site	2	2	2	2	2	2	2	2	2	2
2.59	Monthly updates	Off site	2	2	2	2	2	2	2	2	2	2
2.60	Parish magazines	Off site	2	2	2	2	2	2	2	2	2	2
2.61	Videos for social media	Off site	3	3	3	3	3	3	3	3	3	3
2.62	Update website	Off site	1	2	2	2	2	2	2	2	2	2
2.63	Volunteer e-news	Off site	2	2	2	2	2	2	2	2	2	2
2.64	Interpretation boards	Whole site	2	2	2	2	2	2	2	2	2	2
2.65	Enforcement notices	Whole site	1	1	1	1	1	1	1	1	1	1
2.66	Temporary information signs	Whole site	2	2	2	2	2	2	2	2	2	2
2.67	Corporate boards	Whole site	2	2	2	2	2	2	2	2	2	2
2.68	Corporate boards - review	Whole site	1	1								
2.69	Information in café area	11	2	2	2	2	2	2	2	2	2	2
2.70	Information point	11	2	2	2	2	2	2	2	2	2	2
2.71	Pop-up information hub	Whole site	3	2	2	2	3	2	3	3	3	3
2.72	Schools pack	Off site	3	3	2	2	2	2	2	2	2	2
2.73	Booking system and statistics	Off site	2	2	2	2	2	2	2	2	2	2
2.74	Evaluate success of interpretation	Off site	3	3	2	3	3	2	3	3	2	3

	OBJECTIVE 2: People		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Volunteers**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.75	Lead volunteer tasks	Off site	2	2	2	2	2	2	2	2	2	2
2.76	Recruit and manage volunteers	Off site	2	2	2	2	2	2	2	2	2	2
2.77	Recruit 'ambassador' volunteers	Off site	2	2	2	2	2	2	2	2	2	2
2.78	Volunteer annual review meetings	Off site	1	2	2	2	2	2	2	2	2	2
2.79	Train volunteer leaders	Off site	3	3	2	2	2	2	2	2	2	2
2.80	Assess volunteer satisfaction	Off site			2			2			2	
Project	**Community involvement**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
2.81	Burnham Beeches Consultation Group & other local groups	Off site	2	2	2	2	2	2	2	2	2	2
2.82	Liaise with parish councils	Off site	2	2	2	2	2	2	2	2	2	2
2.83	Contact new neighbours	Off site	3	3	3	3	3	3	3	3	3	3
2.84	Contact existing neighbours	Off site	2				3				3	
2.85	Liaison with neighbours (Black Park etc.)	Off site	3	3	3	3	3	3	3	3	3	3

	OBJECTIVE 3: Estate assets and legal issues		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Historic features**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.1	Pound - maintain in good condition	Off-site	1	1	1	1	1	1	1	1	1	1
3.2	Moat - restore and maintain in good condition	1	1	1	1	1	1	1	1	1	1	1
3.3	Hillfort - restore and maintain in good condition	6	1	1	1	1	1	1	1	1	1	1
3.4	Protect other historic features from harm	Whole site	1	1	1	1	1	1	1	1	1	1
3.5	Collect and catalogue historic objects and pictures	Off site	3	3	3	3	3	3	3	3	3	3

Key to projects: **1** - essential; **2** - highly desirable; **3** - desirable **when a project will be focussed on**

	OBJECTIVE 3: Estate assets and legal issues		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Memorial features**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.6	Memorial book	Off site	3	3	3	3	3	3	3	3	3	3
3.7	Lord Mayor and other planted trees	Whole site	3	3	3	3	3	3	3	3	3	3
Project	**Geology/hydrology**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.8	Quarry	11	3	3	3	3	3	3	3	3	3	3
Project	**Other legal obligations**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.9	Bat policy - pre work inspections	Whole site	1	1	1	1	1	1	1	1	1	1
3.10	Great crested newts	Whole site	1	1	1	1	1	1	1	1	1	1
3.11	Protect protected species and habitats	Off site	1	1	1	1	1	1	1	1	1	1
3.12	Cross compliance, derogations SSSI consent	Off site	1	1	1	1	1	1	1	1	1	1
3.13	All other legal obligations fulfilled	Off site	1	1	1	1	1	1	1	1	1	1
Project	**Health and safety obligations**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.14	Health and safety work programme	Off site	1	1	1	1	1	1	1	1	1	1
3.15	Health and safety annual audit	Off site	1	1	1	1	1	1	1	1	1	1
3.16	Tree safety	Whole site	1	1	1	1	1	1	1	1	1	1
3.17	Sightlines	Whole site	1	1	1	1	1	1	1	1	1	1
Project	**Infrastructure**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.18	Fencing and gates for grazing (inc invisible fence)	Whole site	1	1	1	1	1	1	1	1	1	
3.19	Invisible fence loop in mire	12	2	2								
3.20	All other gates and structures	Whole site	1	1	1	1	1	1	1	1	1	1
Project	**Boundaries**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.21	Boundary survey report	Whole site	2	2	2	2	2	2	2	2	2	2
3.22	Maintain ditches and banks	Whole site	2	2	2	2	2	2	2	2	2	2

	OBJECTIVE 3: Estate assets and legal issues		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
Project	**Buildings and utilities**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.23	Maintain all buildings and structures	Whole site	1	1	1	1	1	1	1	1	1	1
3.24	Map and protect all utility lines	Whole site	1	1	1	1	1	1	1	1	1	1
Project	**External accreditation**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.25	Green Flag/Green Heritage	Off site	2	2	2	2	2	2	2	2	2	2
Project	**Income generation**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.26	Wayleaves/licences - collect	Off site	2	2	2	2	2	2	2	2	2	2
3.27	Wayleaves - annual check	Whole site	2	2	2	2	2	2	2	2	2	2
3.28	Wayleaves - review utilities	Off site	1	2	2	1	1	2	2	2	1	1
3.29	Car parking system	Off site	1	1	2	2	2	2	2	2	2	2
3.30	Filming	Whole site	3	3	3	3	3	3	3	3	3	3
3.31	Encourage donations/legacies	Off site	2	2	2	2	2	2	2	2	2	2
3.32	Ensure financial security	Off site	1	1	1	1	1	1	1	1	1	1
3.33	Apply for grants	Off site	1	1	1	1	1	1	1	1	1	1
3.34	Financial income strategy	Off site	2	2	2	2			1			1
Project	**Planning**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.35	Emergency plans	Off site	1	1	1	1	1	1	1	1	1	1
3.36	Annual staff planning day	Whole site	1	1	1	1	1	1	1	1	1	1
3.37	Annual work programme	Off site	1	1	1	1	1	1	1	1	1	1
3.38	Management plan/project specification	Off site					1					
Project	**Reducing the impact of our work**	**Compartment**	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	20228-29	2029-30
3.39	Biosecurity	Whole site	2	2	2	2	2	2	2	2	2	2
3.40	Reduce environmental footprint	Whole site	2	2	2	2	2	2	2	2	2	2
3.41	Off-road driving policy	Whole site	2	2	2	2	2	2	2	2	2	2

Public Spaces Protection Orders

Area covered by order 2

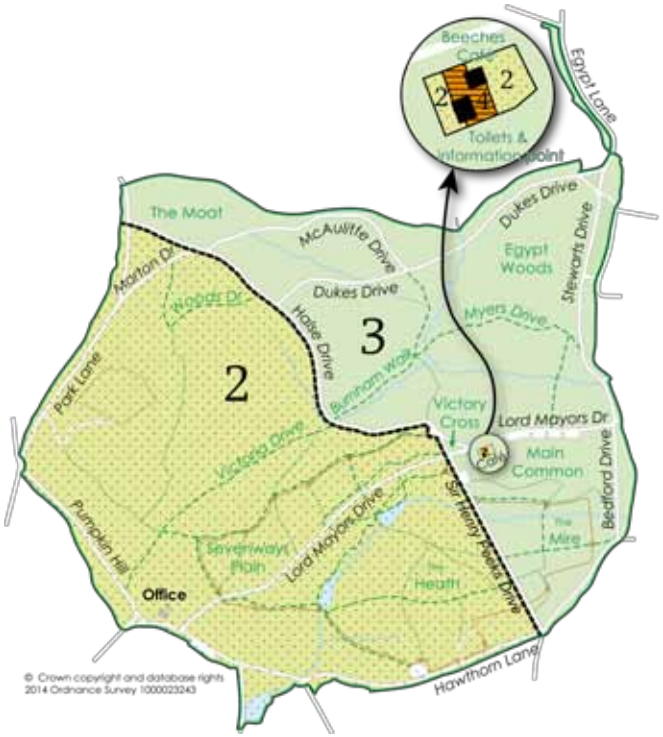
Area covered by order 3

Boundary between areas for orders 2 & 3

Area covered by order 4

Site boundary

Orders 1 & 5 apply throughout the site.



Glossary and abbreviations

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

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

CSS: Countryside Stewardship Scheme. This is a grant which provides financial incentives for farmers and land managers to look after their environment by conserving and restoring wildlife habitats.

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

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

Mire: a wetland area with peaty soils.

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

Red data book: list (originally a red book) of rare and threatened species of plant and animal.

Scheduled Monument (SM): a monument listed by Historic England as being of national importance and hence legally protected.

Secondary woodland: woodland that has grown up on previously open land such as heathland or farmland.

Credits

The 2020-30 Burnham Beeches Management Plan has been ratified by Natural England.

The plan was drawn up by Helen Read and Martin Hartup; editing and design by Feste; illustrations by Dan Powell; photographs by Hannah Carron, Keith French, Jonathan Jones, Dave Lamacraft, Chris Morris, Helen Read, Jamie Smith, Martin Woolner, Jeremy Young and other members of the Burnham Beeches' team.

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The City of London Corporation is the governing body for the Square Mile dedicated to a vibrant and thriving City, supporting a diverse and sustainable London within a globally successful UK.

The City owns and manages almost 4,500 ha of green spaces, parks and gardens in and around London 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.

The City's Open Spaces are protected under their own Acts of Parliament (Corporation of London (Open Spaces) Act, 1878 and City of London Corporation (Open Spaces) Act 2018). These enable the City to acquire land which, under the terms of the 1878 Act, must remain unenclosed and unbuilt upon as open spaces for the recreation and enjoyment of the public whilst preserving the natural aspect and protecting the trees and ground vegetation.

The 2018 Act clarifies that the City of London can undertake management and husbandry activities such as cutting trees, managing the other vegetation and grazing.

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 steps to further the conservation and enhancement of its Open Spaces.

CITY OF LONDON

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