

Chingford

INDIVIDUAL SITE PLAN

1. SUMMARY

The Chingford area is roughly the mid-point in the north-south 14-mile crescent that is Epping Forest today. It encompasses an extensive tract of varied terrestrial and aquatic habitats, occupying a wide, gently sloping plain to the south of High Beach, between the valleys of the Lea and Ching, with three high points. Parts of the Chingford area, such as Barn Hoppitt, have an especially high conservation value for the scarce habitats and species present, and the abundance of ancient Oak pollards; much of the Chingford area is included in the Epping Forest Special Area of Conservation (SAC), a statutory designation of international importance. The SAC status and the SAC conservation objectives (Natural England, 2018 & 2019a), as well as the SSSI condition, will be central to considerations of future management options.

Connaught Water, Queen Elizabeth Hunting Lodge and Chingford Golf Course are of important amenity value, attracting a wide spectrum of visitors from beyond the immediate locality. The Visitor Centre at Chingford (formerly known as The View/The View Visitor Centre) and Butler's Retreat café, both adjacent to Queen Elizabeth Hunting Lodge, and the Holly Trail café next to Bury Road car park are popular with visitors. Queen Elizabeth Hunting Lodge, a unique Tudor building of national historic importance, is the stand-out heritage feature of the Chingford area, but a number of other buildings and monuments are of historic importance, as is Chingford Golf Course, established in 1888.

The honeypot location of Connaught Water is not accessible by public transport, whilst walking routes from local public transport connections to Queen Elizabeth Hunting Lodge / Visitor Centre / Butler's Retreat complex are not obvious to those visitors not familiar with the local area. This results in some of the COL car parks being of insufficient size to cope with demand.

Substantial housing growth is planned in the surrounding districts under a number of Local Plans, with consequent predicted additional visitor pressure. As part of the development of these Local Plans, a SAC Mitigation Strategy is being developed, which will have significant influence on the Chingford area. The SAC Mitigation Strategy is being developed by Epping Forest District Council and the London Boroughs of Waltham Forest, Redbridge and Newham to mitigate the anticipated effects of new housing developments on Epping Forest. This Individual Site Plan details approved programmes of work, many of which are building on long-established plans and strategies, current management considerations and site-specific issues that the wider mitigation strategy will need to address, and vice versa. The ISP will need to be revised regularly to reflect changes to other plans, including the forthcoming SAC Mitigation Strategy and other Forest-wide strategies.

2. INTRODUCTION

Individual Site Plans (ISPs) aim to review and collate the City Corporation's property management considerations at specific locations, to give an overview of long-established as well as current practice and outline longer term plans. An important part of the process is to work with key local stakeholders to ensure that we capture the management issues

impacting each site. Site selection is based around areas of Epping Forest that have a high number of competing issues and/or high visitor numbers.

The ISPs reflect the current level of activity at each site; however, an important part of each ISP is the identification of any potential improvement and enhancement projects that require additional resources, including support from external operational stakeholders, for example in the form of grant funding or volunteer person-hours. The information gathered in each report will be used by the City Corporation to prioritise work and spending on each site as part of the development of the 'London's Great Forest' 2020-30 Management Strategy.

Each ISP will aim to follow the same structure, outlined below:

- **Background** – a brief description of the extent of the site covered by the ISP;
- **Property Management Context** – a list of property management constraints such as statutory obligations directly relevant to the management activity or location;
- **Management Considerations** – a list of identified management considerations for the site, with respect to ecology, conservation, community, heritage, landscape, protection and any other identified management issues;
- **Management Strategy** – a summary of the key overall objectives for managing the site, as identified by the audit;
- **Outline Management Programme** – a summary of the management actions identified for the site as a result of the audit and consultation process, with anticipated timelines for completion;
- **Potential Enhancement Projects Requiring External Support** – a list of projects that would enhance the quality of one or more aspects of the site, for which additional support would be required;
- **External Operational Stakeholders** – a list of external stakeholders who have an operational input to the site, who have been consulted as part of the compilation of the Individual Site Plan;
- **Bibliography** – a list of existing reports (if available) that have formed part of the audit for the ISP; and
- **Appendices** – including a detailed activity plan.

3. BACKGROUND

3.1 Introduction

The Chingford area is roughly the mid-point in the north-south 14-mile crescent that is Epping Forest today. It encompasses an extensive tract of varied terrestrial and aquatic habitats, occupying a wide, gently sloping plain to the south of High Beach, between the valleys of the Lea and Ching. There are three high points - Yardley Hill and Pole Hill in the west, which slope steeply west down to the Lea valley, and Danner's Hill on which Queen Elizabeth Hunting Lodge (QEHL) is situated, a unique Tudor hunt standing of national historic importance.

Parts of the Chingford area, such as Barn Hoppitt, have an especially high conservation value for the scarce habitats and species present, and the abundance of ancient Oak pollards; much of the Chingford area is included in the Epping Forest Special Area of Conservation (SAC), a statutory designation of international importance. Other areas, such as Connaught Water, QEHL and the Chingford Golf Course are of important amenity value, attracting a wide spectrum of visitors from beyond the immediate locality. The Visitor Centre at Chingford and Butler's Retreat café, both adjacent to QEHL, and the Holly Trail café next to Bury Road car park are popular with visitors.

The Chingford area comprises five Forest management compartments (24, 25, 26, 27 and 29) covering a total area of 420 hectares (17.5% of Epping Forest). Compartment 27, most of compartment 24, the northern half of compartment 25 and a wedge of compartment 26 are within Epping Forest District Council (EFDC), whilst the majority of compartment 26 and the southern half of compartment 25 are in the London Borough of Waltham Forest (LBWF). Compartment 29 is split into three Local Authorities: the LBWF to the west of the River Ching, EFDC to the east of the River Ching, and the London Borough of Redbridge to the east of the River Ching southwest of Tuttlebee Lane and a ditch that runs parallel with this Public Right of Way.

From the Chingford area, Epping Forest extends north into Fairmead and Whitehouse Plains (compartment 22), east across the Epping New Road (A104) to Strawberry Hill (compartment 23) and Warren Hill/Powell's Forest (compartment 28) and south into Hatch Forest & Plain (compartment 30). To the west, the Lea Valley Regional Park is an extensive area of mixed terrestrial habitat, canals, river, backwaters and two large reservoirs (King George's and William Girling), whose boundary is only about 150m from the Epping Forest boundary at its closest, west of Yardley Hill.

The hamlet of Sewardstonebury lies to the north of Chingford Plain between areas of open farmland and a golf course, whilst immediately to the south of Rangers Road lies the conurbation of Chingford Green (population 10,287 in 2011). Further east and south of Rangers Road, the suburbs of Chingford, Woodford and Buckhurst Hill squeeze Epping Forest into a narrow stretch of semi-natural habitat between build up areas.

There are approximately 38 km of COL managed paths within the Chingford area as detailed in the Path Policy Development Note (COL, 2020a).

Figures 1 a-c show the locations of the Forest management compartments in the Chingford area, with features of interest mapped, whilst Figure 1 d shows the honeypot locations around QEHL in more detail, along with the many features of interest in this area.

3.2 Chingford Plain and Dannet's Hill

The heart of the Chingford area is an expanse of Epping Forest known as 'Chingford Plain' (compartment 26). Chingford Plain is, as the name suggests, a largely flat plain lying on London Clay, but rising to the south up Dannet's Hill, capped by fluvial gravels, towards a busy road (Rangers Road, the A1069). The plain is the remnant of a former medieval hunting ground, marked on the Chapman and Andre 1777 Map of Essex as 'Chingford Fairmaid Bottom'; it is a rare example in the area of grassland with a recorded ancient history. Queen Elizabeth Hunting Lodge (QEHL), a former royal 'hunt standing', is located at the brow of this hill, from which there are extensive views north across the Plain. Adjacent to QEHL are the Epping Forest Visitor Centre at Chingford, Butler's Retreat café, and a Brewers Fair public house and Premier Inn Hotel (the Royal Forest pub, owned by COL).

To the west and down the hill from QEHL, the Bury Road car park is a large COL car park adjacent to the Chingford Golf Course clubhouse and car park, which also has a small café, the Holly Trail Café, and a cycle hire business, Go Further Cycling. To the west of Bury Road lies the Chingford Golf Course. Further north along Bury Road, the former Jubilee Retreat now hosts the Golf Course yard and staff room for COL golf course personnel, and the headquarters for a local running club, the Orion Harriers.

Queen Elizabeth Hunting Lodge is one of Epping Forest's most important heritage assets; it was built for Henry VIII in 1543, when it was known as the 'Great Standing' (and subsequently as 'Great Hunt Standing'). QEHL is a Grade II* listed building (Historic England, 1954).

This part of Epping Forest is rich in heritage and it is also one of the Forest's most popular locations. In order to better cater for visitors, the Epping Forest Visitor Centre and Museum at Chingford was opened in 2012 as part of an HLF funded project ('Branching Out'), in converted 20th century stable buildings. As part of the same HLF project, Butler's Retreat café was refurbished; the café building is a former barn dating from the mid-19th century and a Grade II listed building (Historic England, 1986).

Chingford Plain is thought to have had an open aspect since before Queen Elizabeth Hunting Lodge was built. Part of the area is currently mown for amenity use, with an area set aside for flying model aeroplanes. Much of the remainder is a mosaic of tussock grassland and scrub patches, providing excellent habitat for many species of birds. There is a central drainage ditch with a band of dense scrub growing along it; a band of secondary woodland to the north of the open plain is included within this compartment because, historically, it was part of the plain.

There is one pond within the management compartment, Butler's Retreat Pond, adjacent to Butler's Retreat café.

3.3 Barn Hoppitt and Whitehall Plain

On the southern side of Rangers Road, Barn Hoppitt and Whitehall Plain (compartment 29) are open areas of wood pasture and grass, historically contiguous with Chingford Plain. Barn Hoppitt is unique in Epping Forest, being the best example of Oak wood pasture in the Forest, with well-spaced ancient Oak pollards over sparse grassland with many anthills and a mosaic of scrub patches; it is ideal habitat for bats and rare species of beetle. The River Ching meanders through the compartment from north to south and there is a large pond, Warren Pond. The ancient pollards and associated habitat in the Barn Hoppitt area are of outstanding international conservation importance.

Barn Hoppitt has a small car park off Rangers Road, opposite the Visitor Centre, and a further small car park adjacent to the Connaught Tennis Club (COL, 1987); consequently, the area is easily accessible. Additional visitors come from the Visitor Centre at Chingford and Butler's Retreat café across Rangers Road. The Barn Hoppitt area and, to a lesser extent Whitehall Plain, are popular with visitors, who appreciate the opportunity to walk in varied habitats, in particular among the ancient pollards, within close proximity of the visitor facilities across Rangers Road, and to combine such a walk with a visit to the historic Queen Elizabeth Hunting Lodge.

3.4 Connaught Water

Connaught Water (compartment 27) lies to the northeast of Chingford Plain; its main feature is the large lake, which was constructed in 1881 and enlarged in 1893; it is named after the Duke of Connaught, the first Ranger of Epping Forest. This shallow lake was designed by William D'Oyley and was constructed to help drain Fairmead Plain which lies to the north; it forms the headwaters of the River Ching, which flows south across Barn Hoppitt and Whitehall Plain. Until the 1980s, paddling and boating were allowed on Connaught Water and a boat house (no longer present) is shown on the Ordnance Survey 25 Inch Series (1892-1914). The lake is still hugely popular with visitors for its scenic quality, the presence of an easy access path, car park and opportunities for picnicking and feeding the ducks. The lake is also a short walk of around 850 m from the Visitor Centre at Chingford, Butler's Retreat café and Queen Elizabeth Hunting Lodge, which further enhances its appeal to visitors.

Much of the remainder of the compartment is a mosaic of scrub, small glades and well-developed secondary woodland over former very open Oak wood pasture, with a few ancient pollards. The Red Path is a surfaced path linking the car park at Connaught Water with Fairmead Plain; a deep ditch runs parallel to the path, which takes drainage run-off from the hills to the north and feeds into Connaught Water.

3.5 Bury Wood

To the north of Connaught Water and Chingford Plain lies Bury Wood (compartment 24), an area of predominantly Hornbeam-Oak pollard woodland, with woodland glades, several surfaced paths and numerous unsurfaced paths, on land that slopes gently upwards to the north. This part of the Chingford area is less heavily frequented by visitors than the honeypot locations around the Visitor Centre, QEHL and Butler's Retreat café and Connaught Water, but those looking for a longer walk or cycle do use the many paths in this area, for example along Jubilee Ride from Bury Road car park to Connaught Water. Two waymarked trails are signposted in Bury Wood, one beginning at Connaught Water and the other at the Holly Trail café / Chingford Golf Course.

Grimston's Oak, situated around 300m north of Connaught Water, is a significant tree in Epping Forest, which stands in a clearing at the junction of three Forest paths. The tree has a girth of around 16 feet (4.8m) with wide spreading branches and is thought to be at least 350 years old. It is included in Epping Forest District Council's 'Favourite Trees' project, which aimed to celebrate the importance of trees within the district (Epping Forest District Council, 2008). The tree appears to be named after the Honourable Robert Grimston, a distinguished 19th century cricketer; the Cuckoo Oak and Bedford's Oak are two alternative names for the tree.

Past extraction of gravel in Bury Wood has resulted in hummocks and hollows within this part of Epping Forest; the Cuckoo Pits are the only former gravel pits to hold water year round – they are particularly important for invertebrates and amphibians. The Cuckoo Brook drains hills to the northwest of Bury Wood; the brook cuts across Bury Wood to the southeast, joining with the River Ching as it flows out of Connaught Water, via a ditch on Chingford Plain.

3.6 Yardley Hill and Pole Hill

The western fringes of the Chingford area (compartment 25) comprise a mixture of grassland, scrub, ancient woodland with Hornbeam pollards, secondary Oak infill, and green lanes. There are two high points, Yardley Hill and Pole Hill, linked by Daisy Plain. Yates Meadow is the continuation of Yardley Hill. Gilwell Lane is a green lane on the northern edge of the compartment; once upon a time, the lane would have given access to the fields on Yardley Hill from Gilwell Farm (not part of Epping Forest) to the north. Woodman's Ride is the only official surfaced path in the compartment; together with a Public Right of Way on Yardley Lane, the ride links Bury Road with Sewardstone Road. Further official unsurfaced paths connect the various parts of the compartment.

Yardley Hill has patches of chalky boulder clay, the only location in Epping Forest where this type of calcareous geology is uppermost; the grassland in this location supports lime-tolerant plant species not found elsewhere in Epping Forest.

Hawk Wood is the only ancient woodland in the compartment; it extends across the north-western slope of Pole Hill. The remainder of Pole Hill was once open grassland, but considerable scrub and secondary woodland invasion of the grassland has occurred, merging with the original footprint of Hawk Wood. The Greenwich Meridian passes through the apex of the hill - an Ordnance Survey obelisk and triangulation point mark the spot. Part of Pole Hill was formerly owned by T. E. Lawrence; a building from there was removed to the Warren Yard.

Yardley Hill, Pole Hill and Yates Meadow are somewhat remote from the honeypot locations of the Chingford area and are comparatively quiet; local residents appreciate the views of the surrounding countryside from the top of Yates Meadow, as well as its flora in late spring/early summer.

4. PROPERTY MANAGEMENT CONTEXT

4.1 Statutory Designations

- Special Area of Conservation (SAC): All of Bury Wood and Connaught Water are within the Epping Forest Special Area of Conservation, as is the majority of Barn Hoppitt, with only The Birkbeck at the southern end of the compartment and a sliver to the west of Forest Side not included. Most of Yardley Hill and Pole Hill is included within the SAC, apart from small slivers at the northern and southern ends. The eastern half of Chingford Plain is within the SAC, but the western half and Chingford Golf Course are excluded.
- The Chingford area within the Epping Forest SAC forms part of an internationally important site within a network of such sites across Europe, specially protected under UK law by the Conservation of Habitats and Species Regulations 2017 (as amended). The qualifying features of Epping Forest SAC are wet heathland with Cross-leaved Heath, dry heath, Beech forests on acid soils and the presence of Stag Beetle. The SAC is regularly assessed for its “favourable conservation or condition” status to ensure that the wildlife habitats support the range of scarce species for which it was designated. Condition assessments are undertaken on a unit (compartment) basis by Natural England, who assess unit condition against both SAC and SSSI condition targets - see below for a summary of unit conditions.
- Site of Special Scientific Interest (SSSI): In the Chingford area, the SAC designation overlaps exactly with the Site of Special Scientific Interest (SSSI) designation, though the area immediately east of Bury Road, including Dannet’s Hill, is not within the SSSI/SAC. The ecological condition of each SSSI unit has been assessed by Natural England (NE), as detailed below. For all seven SSSI units, notwithstanding the unit condition assessment outcomes, Natural England states that there remains a very significant issue relating to air quality and the related deposition of acidity and of nitrogen. Many veteran trees within [each of] the unit[s] display clear symptoms of stress, bryophytes are sparse and species-poor, grassland areas show excessive growth of grass compared to broad-leaved species, and there are dense stands of nettles along roadsides and ride edges.
 - Compartment 24 (Bury Wood, NE unit 124): assessed as ‘favourable’ in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. However, notwithstanding the assessment, Natural England states that *‘the anticipated recovery in the condition of the grassland areas is reliant upon continuation of the extensive grazing regime.’*
 - Compartment 25 (Hawk Wood and Yardley Hill, NE unit 125): assessed as ‘unfavourable – recovering’ in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. However, notwithstanding the assessment, Natural England states that *‘there is excessive growth of bramble and the anticipated recovery in the condition of the grassland/heathland areas will not take place unless an extensive grazing regime is re-introduced as planned.’*
 - Compartment 25 (Pole Hill, NE unit 225): assessed as ‘unfavourable – no change’ in January 2010 (natural England, 2010), on the basis of survey data and having taken into account the effect of all ongoing and planned management works. Woodland and scrub management are underway. However, the acid grassland areas are currently undermanaged, resulting in poor floristic diversity and shading of anthills. This is due to be addressed by management but is considered to be a lower priority than some other areas. Natural England states that *‘the anticipated recovery in the condition of the grassland areas will not take place unless management continues to take place as planned’.*
 - Compartment 26 (Chingford Plain, NE unit 126): assessed as ‘unfavourable – recovering’ in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. However, notwithstanding the assessment, Natural England states that *‘the anticipated*

recovery in the condition of the grassland areas is reliant upon continuation of the extensive grazing regime. Some of the water bodies within the unit are also in a sub-optimal condition, which may affect the unit's long-term ability to provide supporting habitat for the assemblages of Odonata and of amphibians.'

- Compartment 27 (Connaught Water, NE unit 127): assessed as 'favourable' in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. However, notwithstanding the assessment, Natural England states that *'Connaught Water is in a sub-optimal condition due to eutrophication, which may affect the unit's long-term ability to provide supporting habitat for the assemblages of Odonata and of amphibians.'*
- Compartment 29 (Barn Hoppitt, NE unit 129): assessed as 'unfavourable – recovering' in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. However, notwithstanding the assessment, Natural England states that *'the anticipated recovery in the condition of the grassland/heathland areas will not take place unless an extensive grazing regime is re-introduced as planned. Warren Pond is also in a sub-optimal condition, which may affect the unit's long-term ability to provide supporting habitat for the assemblages of Odonata and of amphibians.'*
- Compartment 29 (Whitehall Plain, NE unit 229): assessed as 'unfavourable – recovering' in January 2010 (Natural England, 2010), on the basis of survey data and the effect of all the ongoing and planned management works. Natural England states that *'the anticipated recovery in the condition of the grassland areas will not take place unless management continues to take place as planned'*.
- All the SSSI condition assessments are over 10 years old and may no longer reflect the current position and a review by Natural England is pending.
- Metropolitan Green Belt: The whole of Epping Forest within both Epping Forest District Council and the London Borough of Waltham Forest is designated Metropolitan Green Belt. Chapter 13 of the National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2019) sets out the fundamental aims of the Metropolitan Green Belt policy and the framework for its protection from urban sprawl.
- Site of Importance for Nature Conservation: The majority of Epping Forest land within the London Borough of Waltham Forest, except for slivers of Chingford Golf Course, is designated as a Site of Importance for Nature Conservation (SINC). These sites are of particular importance to wildlife and biodiversity in the London Plan, which receive a high level of protection from development within the planning system.
- Local Wildlife Site: Yardley Hill Meadow is a local wildlife site, designated by Essex Wildlife Trust in 2009 for its floristic diversity and a species assemblage which suggests that it is old grassland.
(<http://www.essexwtrecords.org.uk/LoWS/Ep8>)
- GLA 59 - Pole Hill Locally Important Geological Site (potential): Pole Hill LIGS consists of London Clay capped by Claygate Beds. South of the Pole Hill obelisk, a brickworks was established in the mid-19th century and the pit exposed Claygate Beds consisting of alternating layers of sand and loam that were deposited on the floor of a shallow, subtropical sea, around 50 million years ago (London Geodiversity Partnership, 2014).
- Queen Elizabeth Hunting Lodge: A former hunting lodge, QEHL is a Grade II* Listed Building (Historic England, 1954), described as *'Early C16, much restored. Exposed timber framing; plaster infill. Pitched tiled roof to eaves. 'L' shaped plan with staircase in south wing. 3 storeys. 3 x 2 bays with 2 x 2-bay stair wing. Mullioned windows, mainly 2-light. Windows and decorative features mostly late C19. Interior having open queen post roof with windbraces. Early and rare example of this building type.'*
- Butler's Retreat: A Grade II Listed Building (Historic England, 1986), described as *'Detached house. Probably early C19. Timber framed, weatherboarded, on brick base. Old tiled roof, steeply pitched to eaves. 2 storeys. 3 bays with 1-storey lean-to bay to left. Exposed timber posts between bays. Central square-headed entrance, planked door.'*

Square-headed casement windows, with timber hoods. Rear facade similar but with long central window. Exposed rafters. Included for group value.'

- Ordnance Survey Obelisk, Pole Hill: Grade II Listed Building (Historic England, 1987). Described as '*Granite monolith, 1824. Above eight feet high with battered sides and flat top. Inscribed plaque inset. Erected to mark the direction of the true north from the Royal Observatory at Greenwich. The meridian was changed in 1850 and the point of zero now passes 19 feet to the east of the Obelisk.*'
- Archaeological Priority Areas: London Borough of Waltham Forest has recently reviewed the Archaeological Priority Areas (APAs) in the borough (LBWF, 2020).
 - Tier 1 APA: Queen Elizabeth's Hunting Lodge APA is classified as Tier 1 because it contains the best-preserved example of a timber-framed building as a royal standing for hunting and its immediate setting in England. Butler's Retreat and the Royal Forest Hotel represent later nineteenth century iterations of the usage of this area of Epping Forest for recreation and refreshment. In addition, the APA represents an open and undeveloped area which contains heritage assets of archaeological interest dating to the prehistoric period.
 - Tier 3 APA: Epping Forest APA has recently been classified as Tier 3 because it covers surviving portions of the ancient Epping Forest and can provide an insight into the use of the forest during the medieval and post- medieval periods. In addition, the APA represents a large, open and undeveloped area which has potential for heritage assets of archaeological interest dating to the Prehistoric, Roman and Saxon periods.

4.2 Flood Risk

- Connaught Water: Connaught Water is of irregular shape, extending to a maximum length of about 300 metres between the northern and southern extremities, and contains four islands. The reservoir dam is located along the southwestern side of the reservoir and contains the overflow works to the River Ching, which initially flows in a south-south-westerly direction.
- National Flood Risk: Under the Reservoirs Act 1975 as amended 2010, Connaught Water is classified as a Large Raised Reservoir. There are statutory requirements placed upon COL to monitor and maintain the Connaught Water dam and associated infrastructure to standards set out in the Acts.
- Reservoir Inspection: On 24 March 2016, Atkins (2016) undertook an inspection of the reservoir and dam for the purposes of the Reservoirs Act 1975 as amended 2010; such inspections are required every 10 years. Recommendations arising from this inspection are detailed in Appendix 2.
- There are three substantial pieces of repair work to the dam structure that are outstanding as of June 2020:
 - the revetment (wharfing and geotextile) on the upstream slope be replaced as and when necessary;
 - leakage through the overflow weir should be stemmed; and,
 - any scour damage to the path should be repaired and a low bund erected to ensure the flow goes to the forest and not along the toe of the dam.
- Connaught Water also floods at the upstream end of the lake each winter, which in turn floods the Easy Access Path, impeding access. Winter flooding also occurs along the Red Path from the main ditch draining into Connaught Water, which drains the hills to the north. A study of the hydrology of the area is required to tackle this issue, looking at potential actions in the ditches further upstream to hold back and slow down the water flow, for example by creating leaky dams, sluice gates and/or new ponds.
- Warren Pond: This pond is a former gravel excavation with a constructed bund, though the pond is not sufficiently large to fall under the Reservoirs Act 1975 as amended 2010.

4.3 Tree Safety

- Tree Safety: There are four different tree safety zones identified for each of the five compartments in the Chingford area:
 - Red + Zone Trees along main roads, around car parks, the heavily frequented areas around the Visitor Centre at Chingford, Queen Elizabeth Hunting Lodge and Butler's Retreat café, along the easy access path at Connaught Water, the Grimston's Oak clearing, the access road to the Connaught Club and a heavily visited clearing with ancient trees to the east of the Connaught Club; all areas are surveyed annually by specialist external tree safety consultants.
 - Red Zone Trees alongside minor highways, around the Jubilee Retreat building and immediately east of Barn Hoppitt car park are surveyed every two years by specialist external tree safety consultants.
 - Amber Zone Trees in areas highly frequented by the public, including the whole of Chingford Gold Course, and where trees abut properties, are surveyed every three years by specialist external tree safety consultants.
 - Green Zone Trees alongside the official path network as identified on the Epping Forest visitor map are surveyed by City Corporation Forest Keepers on a five-year rotation.

4.4 Wildfire Risk

- Barbeques and fires, although against the byelaws, are still used by some visitors and pose a significant risk to the important veteran tree habitats of the SAC, as well as the wider environment and neighbouring properties and roads. Wildfire is more prevalent and more likely to become out of control in open grass, scrub and heathland habitats where the fuel-load (particular vegetation types and structures) is also high. Fires and barbeques within the woodland on the fibrous peaty soils are a serious concern because of their direct proximity to the ancient trees and that the fires can burn underground unseen.
- The key habitat in the Chingford area requiring a wildfire risk assessment is the rough grassland and scrub of Chingford Plain. COL are in the process of preparing site-specific risk assessments but also site-specific wildfire management plans and wildfire response plans (the latter required by Essex Fire & Rescue Service and the London Fire Brigade) for all areas of Epping Forest deemed to be at risk of wildfires. The fire risk assessment and wildfire management and response plans for Chingford Plain are due to be finalised by the summer 2021.

4.5 Invasive Non-Native Species (INNS)

- Oak Processionary Moth (*Thaumetopoea processionea*): The larvae of the non-native Oak Processionary Moths are a risk to human health and they are present throughout Epping Forest. Oak Processionary Moths prefer open grown Oak trees; nests have been found in recent years in trees around Connaught Water, adjacent to the Visitor Centre at Chingford and Queen Elizabeth Hunting Lodge, and besides the Warren Pond. Future responses will involve removal of the nests, especially at lower levels, with some pesticide treatment in limited cases, such as in high visitor access areas, e.g. around the Visitor Centre and QEHL.
- New Zealand Pigmyweed (*Crassula helmsii*): This non-native species is present in Butler's Retreat Pond, Warren Pond and Chingford Golf Course lower/new pond. Currently, there is no specific control of *Crassula helmsii* in these ponds.
- Ash Dieback (*Hymenoscyphus fraxineus*): This highly destructive fungal disease has the potential to cause significant damage to the Ash trees of Epping Forest, with implications for woodland biodiversity and ecology; there is no

known cure. Local spread (up to 10s of miles) of the fungal spores can be caused by wind dispersal, though spores can also be spread between woodland sites by the mud on walking boots and wheels (bikes, wheelchairs, pushchairs).

- Canada Goose (*Branta canadensis*): Canada Geese, a non-native species, are heavy grazers of aquatic and waterside vegetation, their droppings increase nutrient levels in water bodies and soils and their trampling can exacerbate bankside erosion. The Canada Goose population at Connaught Water requires ongoing management. As Connaught Water is within the Epping Forest SAC, the Department of Environment, Food and Rural Affairs general licence (Defra, 2020) relied upon to control these birds is invalid and an individual licence from Natural England is required to undertake Canada Goose control.
- Other INNS present in the Chingford area compartment are:
 - Cherry Laurel in compartment 25;
 - Sycamore and Terrapin in compartment 27; and,
 - Parakeet, Muntjac and Grey Squirrel in all compartments.
- An Invasive Species and Biosecurity Policy (COL, in prep) will review the high-risk species and prioritise monitoring and controlling INNS and other invasive species in Epping Forest. Biosecurity policy will be developed alongside the INNS policy, and biosecurity protocols developed for each species or location as required.

4.6 Infrastructure

- Connaught Water dam: A Reservoirs Management Policy Development Note (COL, in prep) will detail the maintenance schedule.
- Information boards/signposts: There are a large number of COL signs in the Chingford area, of various ages, designs and functionality. Signage and interpretation are being reviewed across Epping Forest and a strategy should be complete in 2021. The issues around signage are considered in detail in the Access and Visitor Services sections of this ISP.
- Boardwalk and fishing platforms: A boardwalk and two accessible fishing platform were installed by Epping Forest staff with volunteer help, as part of the HLF Branching Out project. Maintenance inspections of these structures are undertaken once per year by EF staff. The structures are approximately halfway through their working life and there is a need to plan for their eventual replacement.
- Forest Furniture:
 - Picnic tables and benches: A number of wooden picnic benches and benches are provided by COL in the Chingford area; these are positioned close to the Visitor Centre, around Butler's Retreat café and adjacent to QEHL.
 - Rubbish bins: Rubbish bins are provided throughout the Chingford area, concentrated around those locations with the highest visitor numbers. However, there remains a significant litter problem in the Chingford area, which is a combination of a number of inter-related issues that will be addressed as part of a future review of litter management.

4.7 Property / Boundaries

- COL properties on Epping Forest land exist on a sliding scale of responsibility between COL Epping Forest and COL City Surveyors (CS) departments, as dictated by the specific lease agreements for each property. These are collated in a 'Division of Responsibilities' document for each property.

- Appendix 3 lists the buildings and structures within the Chingford area of Epping Forest, with further notes on the buildings, their occupancy, heritage listing (if any) and whether the building/structure has a Conservation Statement or Conservation Management Plan.
- Queen Elizabeth Hunting Lodge (QEHL): QEHL is of particular importance, as the Tudor ‘hunt standing’ is a historic building, built in 1543 for Henry VIII. Ownership of the building passed to COL as part of the Epping Forest Act 1878. It is a Grade II* listed building (Historic England, 1954) and regular assessments of the fabric of the building are undertaken by specialist contractors to monitor its condition.
 - A spreadsheet of planned costed maintenance works for QEHL was created in 2016 (COL, 2016), to cover the following 20 years.
 - Conservation Statement and Conservation Management Plan (CS and CMP): A *Conservation Statement (CS)* is a concise document presenting the current understanding of a building or heritage site, its significance and its conservation issues. A *Conservation Management Plan (CMP)* is a more detailed document that helps to develop the management strategy for historic assets, sites and places. It explains the significance of the asset and examines how any future use, management, alteration or repair will be carried out in order to retain that significance. It informs the way an asset is conserved and managed.
 - A draft Conservation Statement (Martin Ashley Architects, 2018 *in draft*) is available. The report made recommendations for remedial works required; these recommendations need to be reviewed to ascertain the current status of planned remedial works.
 - Despite being a Grade II* listed building, Queen Elizabeth Hunting Lodge does not currently have a Conservation Management Plan; commissioning a CMP for QEHL should be a priority.
 - An assessment of timber condition, monitoring of timber moisture content and beetle numbers was made on 27 April 2018 (FloydConsult, 2018). Conclusions from the report and unresolved issues are as follows:
 - Beetle numbers: The report was unable to draw any conclusions from the numbers of recorded Deathwatch beetles and elytra (wing casings) found during the survey (FloydConsult, 2018).
 - Moisture monitoring system: Data logging by the moisture management system was insufficient to draw conclusions at the time of the April 2018 assessment (FloydConsult, 2018).
 - Timber condition: There is some deterioration of the section of sole plate adjacent to the west entrance. However the emerging beetles will not be able to infest other parts of the building as it is generally well maintained, with water able to effectively run off the external surfaces of the framework (with the exception of the sole plate adjacent to the west entrance). The localised decay and increased moisture levels are not unusual, low down on south and west facing positions. No repairs are necessary yet (FloydConsult, 2018).
- Wayleaves: There are 352 private property accesses across Forest land in the Chingford area, as follows:
 - Compartment 24 – 12 accesses;
 - Compartment 25 – 209 accesses;
 - Compartment 26 – 7 accesses;
 - Compartment 27 – 0 accesses; and,
 - Compartment 29 – 124 accesses.
- An Access Audit (COL, in prep) is currently ongoing, which will audit all third-party access on Forest land in the area and determine the future wayleave agreement requirements.

4.8 Highway Verges

- All the verges in the Chingford area suffer from significant encroachment from parked cars, especially at weekends and Bank holidays, creating hazardous conditions along the roads. Illegal parking along Rangers Road is a particular problem, with the number of visitors frequently exceeding the number of official car parking spaces at the Connaught Water car park. Roadside parking along Bury Road also occurs, though to a lesser extent as the Bury Road car park capacity is greater.
- Sightlines at car park entrances and road junctions are cut annually by COL in June/July.

4.9 Utilities

- Thames Water pipeline: An easement was granted to South Essex Waterworks Company (now Thames Water) to lay a water main pipeline across Epping Forest land in the Chingford area, from Kings Head Hill (A110) in the west to the Epping New Road (A104) and beyond in the east.
 - The Deed of Grant (COL, 1962) states in Paragraph 3 of the Second Schedule (Restrictions and stipulations to be observed and performed by the Conservators) that *'Nothing shall be built erected constructed laid placed planted or grown in under or upon the said land which would render the exercise of the rights and easements hereby granted or any of them substantially more difficult or costly or which may be in any way diminish interfere with or damage the purity or flow of water coming to or carried by the said pipes.'*
 - An analysis of 2019 aerial photography along the pipeline route shows that, in several locations along the pipeline, the vegetation has not been maintained as grassland. Over time, these sections have been invaded by scrub and trees. Appendix 4 shows aerial photographs for the locations of concern, and actions to address the issue are in the Outline Management Plan table of this ISP.

5. MANAGEMENT CONSIDERATIONS

5.1 Ecological

- Outstanding conservation value: Epping Forest is a unique landscape, distinct from the surrounding countryside as a result of over a thousand years of sustainable management by people and their domestic animals. *"In 1878, Epping Forest was a complex and balanced system, every acre the product of centuries of peculiar land uses, and a thing of distinction and beauty; with its combination of pollards and heather, there was probably nothing quite like it in the world"* – taken from Oliver Rackham's *The History of the Countryside* (1986). The resulting wood pasture habitat with ancient pollards is a landscape of immense conservation value due to its rarity. It is one of a few remaining large-scale examples of wood pasture in England and encompasses one of the largest populations of ancient trees in any site in Europe.
- This wood pasture also supports outstanding assemblages of invertebrates, fungi and amphibians, and an important breeding bird community. The Chingford area includes most of these high nature conservation value habitats, including ancient semi-natural woodland, scrub, acid grassland, heathland, marsh and open water.
- Global climate emergency: The City of London Corporation (COL) has adopted a radical Climate Action Strategy (CAS) as its contribution to addressing the Global Climate Emergency (COL, 2019a). The Climate Action Strategy 2020-2027 sets out how COL is committed to reducing its contribution to the factors that cause climate change, as well as adapting to the impact of a changing climate and the extreme weather events, such as storms and flooding, that are likely to increase in frequency and severity. The CAS sets out the steps towards achieving net zero carbon emissions, building climate resilience and championing sustainable growth.

- The global climate emergency is an over-arching and increasingly serious problem, which needs to be factored into management decisions for the site and, particularly, the protection of its scarce habitats and species. The effects of the climate emergency will increase the susceptibility of the trees and vegetation to diseases and drought.
- Favourable Condition of the SSSI compartments/units – Site Improvement Plan (SIP): Management work will need to try to address the two key problems for favourable condition identified by Natural England: air pollution and recreational pressure (Natural England, 2016). To address the former, a close working relationship is required with other stakeholders, particularly Epping Forest District Council and the London Borough of Waltham Forest, through the updating of their Local Plans and their highways and development proposals. Recreational pressure also needs to be considered and this ISP outlines possible management proposals that will help address the issues of visitor numbers and help to protect habitats such as the wood pasture with its ancient pollards and acid grassland. Natural England also specifically mentions the continuation or reintroduction of extensive grazing as planned is key to the anticipated recovery of several of the management units in the Chingford area. Furthermore, the water bodies in the Chingford area are in sub-optimal condition, which may affect the ability of the management units to provide supporting habitat for Odonata assemblages and amphibians.

Lowland wood pasture¹

- The UK Habitat Action Plan (UK HAP) defines lowland wood pasture *‘as areas that have been managed by long-established tradition of grazing, characteristically with at least some veteran trees. The tree component can occur as scattered individuals, small groups, or as more or less complete canopy. Depending on the degree of canopy cover other semi-natural habitats, including grassland, heath, scrub etc may occur in a mosaic with woodland communities.’* The density of trees, therefore, ranges widely across sites and could be as low as 1 per hectare, with Epping Forest at the higher density end of the scale.
- Epping Forest has been grazed by cattle and ponies and other animals including deer for over 1,000 years. Unlike the other Essex Forests of Writtle or Hatfield, Epping Forest has always been un-compartmented and Commoners’ cattle were free ‘to wander all over the Forest’ (known as inter-commonage). However, grazing of Commoners’ cattle ceased in 1996 following the outbreak of mad cow disease (Bovine Spongiform Encephalopathy, BSE).
- Since 1993, with the development of the first (COL, 1998) and second (COL, 2004) Epping Forest Management Plans, there have been a series of reports approved by the Epping Forest and Open Spaces (now Commons) Committee which have aimed at supporting and re-introducing grazing to Epping Forest in incremental steps. Each step has built on the previous ones and the approach to grazing on the Forest has gradually taken shape leading to the current Grazing Strategy (COL, 2008a); the aims of the grazing strategy have been reiterated in the most recent Epping Forest Management Plan (COL, 2019b).
- Key to the restoration of extensive grazing across Epping Forest, but particularly in the Chingford area, has been the Higher Level Stewardship Scheme (HLS) agreement, which ran from 2008-2018 (COL, 2008b), in which large areas of wood pasture were partially restored.
- In addition, a Heritage Lottery Funded project (‘Branching Out’) ran from 2006 (COL, 2006a); the project had a wide remit, but included the installation of infrastructure, such as invisible fencing, wooden fencing along major roads and cattle grids, to facilitate the expansion of grazing across Epping Forest’s wood pasture habitat.

¹ For background on the importance of Woodpasture please see the video narrated by the Epping Forest Head of Conservation <https://ptes.org/wppn-videos-launch/>

- Much of the Chingford area is now in a 10-year Countryside Stewardship Scheme (CSS) agreement (COL, 2019c), in order to further support continued wood pasture restoration and extend cattle grazing to other key areas of Epping Forest, including Yardley Hill, Yates Meadow and Daisy Plain. Wood pasture restoration has been ongoing in Barn Hoppitt since 2003, and grazing of the compartment will be included in a subsequent CSS application, which will cover the remaining areas of Epping Forest.

Barn Hoppitt

- Barn Hoppitt is unique in Epping Forest, being the best example of Oak wood pasture in Epping Forest, with 343 large open grown Oak pollards in about 30 hectares of wood-pasture, with relatively low densities of Hornbeam (37 pollards) and a concomitantly large area of remnant ant-hill-covered grassland, now mostly infilled with young and maturing trees.
- There are only 38 known sites with more than 100 ancient trees in the UK; of these only 10 have more than 1,000 ancient trees. Barn Hoppitt, which contains more than 350 ancient trees, is therefore a nationally important site for ancient trees on its own merit. Given the evidence from Europe of the importance of the UK for large old Oaks, the compartment's special saproxylic (dead-wood) fauna (see Invertebrates below), its old-growth characteristics and dead wood, Barn Hoppitt on its own is undoubtedly of international conservation importance (Dagley, J.R. and Froud, A., 2006).

Ancient/veteran trees

- Pollard management across Epping Forest went into decline in the 19th century. Consequently, Oak and Beech veteran pollards have grown beyond the optimal stage for re-pollarding, though these trees can be worked to stabilise their crowns and extend their life with the use of specialist tree surgery.
- One aspect of the HLF 'Branching Out' project (COL, 2006a) focused on specialist veteran tree management work on 1050 keystone Beech and Oak pollards within Epping Forest. The keystone trees were chosen as those in most need of specialist management, from 24,508 ancient trees that were mapped and recorded as part of the project (COL, 2008c). A proportion of these keystone trees will require further management in the next ten years.
- Hornbeam pollards have been shown to respond very well to re-pollarding when correct management techniques are implemented - Bury Wood has been a significant focus for veteran tree management for over 30 years, to restore both veteran Hornbeam pollards and the associated wood pasture habitat, with over 800 Hornbeam pollards restored back into a pollarding cycle. Some coupes (small areas within a compartment that are worked as a unit) are now on their 3rd pollarding cycle. At the top of Daisy Plain/Pole Hill/Hawk Wood (compartment 25), over 100 Hornbeam pollards have been re-pollarded, with a further 15 Hornbeam on Chingford Golf course re-pollarded.
- Over a thousand additional Hornbeam and Oak pollards were haloed (the removal of young, competing trees from around ancient trees) during the 10 years of Higher Level Stewardship, in preparation for 1,300 veteran trees to be worked within Bury Wood under the current Countryside Stewardship Scheme, over the next 10 years.
- Within Barn Hoppitt (compartment 29), the management of Oak pollards has been on-going since 2003, where 242 trees have received crown management to extend their life; these trees, along with another 100 Oak pollards have received halos.
- Health and condition monitoring of Oak pollards has been conducted annually on over 600 ancient pollards, including those at Barn Hoppitt, for nearly a decade.
- Threats to longevity of veteran trees include:
 - A lack of management until late into the 20th century, when veteran tree management was started;

- Shade from secondary infill trees, especially for Oak;
- Climate change, leading to increased instances of drought and storm events;
- Atmospheric pollution;
- Pests and diseases, to which trees stressed by climate change and pollution are more susceptible;
- Visitor pressure, which has led to two situations that adversely impact ancient trees in the area:
 - Soil compaction and erosion, resulting in root exposure, damage and death, arising from the trampling pressure of visitors. Soil compaction and erosion reduces the ability of water to move through the soil, so there is inadequate movement of oxygen to roots, and reduces soil organisms such as earthworms, which reduces soil fertility and causes the loss of beneficial mycorrhizal fungi. In dry periods, compacted soils can become so hard that root systems cannot grow through the soil, leading to poor root systems.
 - Tree safety requirements in response to the red hazard category of busy public access areas has resulted in recommendations for interventions that potentially undermine the conservation value of some ancient trees, e.g. through dead wood removal in the tree crown, or removing defects that are potential bat roost features. Barbastelle bats use trees (dead or alive) with loose bark; they have also been shown in national studies to use up to 30 different roost sites throughout the year. Tree safety works can have a significant impact on Barbastelle, especially when felling dead trees.
- In 2019, a fencing trial was implemented around one tree in the High Beach area, to test the effectiveness of this approach for protecting ancient trees in a cost and landscape effective way. Materials used were round posts with a green polypropylene rope running through a hole in the top, with explanatory signage. This low cost approach appears to be successful, with the barriers remaining intact and little evidence of the public entering the enclosures, and may be considered for use in Barn Hoppitt, where there is both a concentration of ancient trees and high visitor footfall.

Acid grassland

- Acid grasslands are so-called because they are characterised by nutrient-poor (low nitrogen and phosphorus content) and acidic soils (those with a low pH – sandy/gravelly). The low nutrients and acidic conditions favour a wide diversity of specialist native plants that can thrive where the more common, faster-growing grasses cannot easily survive. Acid grassland is a UK Biodiversity Action Plan habitat, for which the Forest is partly notified under the SSSI. As such, they are a top priority for wildlife conservation nationally and, in the Chingford area, are represented by the following locations:
 - Barn Hoppitt (compartment 29) has open areas with short sparse acid turf on well-drained gravelly soil. Many anthills occur; Sheep's Sorrel and Cat's-ear are typical, whilst Tormentil *Potentilla erecta* and Trailing Tormentil *P. anglica* are both present.
 - Warren Wood Fields, now called Warren Wood Slope (in compartment 29, Barn Hoppitt), was formerly part of the golf course. It has a relatively rich acid and neutral grassland flora, including Grass Vetchling (*Lathyrus nissolia*) and an important population of Lady's Bedstraw. The wetter areas at the bottom of the slope support longer swards, including Wild Angelica (*Angelica sylvestris*).
 - Chingford Plain golf course (compartment 26) which, although excluded from the SSSI/SAC, nonetheless supports acid grassland, with Mat-grass (*Nardus stricta*) and Heath Grass (*Danthonia decumbens*), and many anthills in the roughs. Some attempts were made to integrate conservation management with golf course management in the late 1990s and this work could be revived and targeted on re-opening the glades that supported acid grassland flowering species.

- The quality of the acid grassland in the Chingford area is being adversely impacted by the following significant issues:
 - Decline in grazing: Natural England has made it clear in its condition assessments that grazing needs to be reinstated on a much more widespread basis in order for management compartments to be returned to 'favourable condition' (Natural England, 2010). There are plans to graze Barn Hoppitt with Epping Forest's herd of English Longhorn cattle. The roughs around Chingford Golf Course are currently cut as part of the golf course management. Warren Wood Slope is managed by grazing and cutting.
 - Visitor impact: Increasing visitor pressure compacts the soil in heavily frequented locations, such as in Barn Hoppitt. The prescriptions of SSSI/SAC management preclude turning over the soil to loosen and aerate it in order to encourage grass growth, so once the soil has been compacted, the acid grassland flora does not recover. Newly developed desire lines have appeared over the past 18 months. There is also a marked yearly growth in desire line width, most noticeable on inclines on grassland.
 - Air pollution: Deposition of nitrogen pollutants from the air is causing a rise in soil fertility, allowing more competitive plant species to dominate the less competitive specialist acid grassland plant species.
 - Nutrifaction by dogs: Dogs contribute to nutrient enrichment of infertile habitats through defecation and urination. These effects are generally concentrated around car parks, café areas, paths and at site entrances, with observed symptoms of enrichment being the dominance of nutrient-loving species, resulting in the reduction of plant species diversity.
 - Health issues with dog fouling: The excretion of veterinary medicines with dog faeces is detrimental to the invertebrate fauna of the Forest, as the active ingredients of flea and worming treatments (for example neonicotinoids) are also agricultural insecticides. Dogs infected with *neospora* (a parasite) can harm cattle grazing on Forest land if they ingest the contaminated faeces; similarly, the infected faeces can become incorporated into the haylage harvested from Forest grassland areas.

Lowland calcareous grassland

- Lowland calcareous grasslands develop on shallow lime-rich soils, characterised by nutrient-poor soils (low nitrogen and phosphorus content) with a high pH. The low nutrients and calcareous conditions favour a wide diversity of specialist native plants that can thrive where the more common, faster-growing grasses cannot easily survive. Within Epping Forest, Yardley Hill is the only location with calcareous grassland plants, which are found on patches of chalky boulder clay from remnant Lowestoft Formation glacial till, characterised by its chalk and flint content, and a carbonate content of around 30%.
- The OS six inch map (Ordnance Survey, 1888-1913, Appendix 5) shows that Yardley Hill was once farm fields and hedgerow before it was acquired by COL in 1898. By 1945, aerial photography (Appendix 5) shows Yardley Hill partly invaded by scrub, though the hedgerows are still visible.
- A major scrub clearance (several hectares) was carried out in 1999, which brought back a number of species of the chalky boulder clay, including Spiny Restharrow (*Ononis spinosa*) and Burnet-saxifrage (*Pimpinella saxifraga*). This area has been maintained since by the grass cutting team whilst also protecting the ant-hills. The scrub higher up the slope is much longer established and dense with thorn and Oak scrub, though the old field hedgerows can still be detected by the raised banks and the presence of flora such as Dog's Mercury (*Mercurialis perennis*).
- Going forward, the most recent Countryside Stewardship Scheme agreement (COL, 2019c) will support grazing of the open chalk boulder clay areas, with the use of the new GPS collars. Where there is currently dense scrub further up-slope, glade creation linked to the footpaths and unsurfaced horse-ride access would allow cattle to move easily between the more open areas and reduce the need for mowing every year.

- The quantity and quality of chalky boulder clay grassland on Yardley Hill is being adversely impacted by the same issues as those described above for acid grassland, though loss of grassland habitat through scrub and secondary woodland invasion over many decades is by far the most significant. If the calcareous species associated with this outcrop of chalky boulder clay are lost, these calcareous species would also be lost to Epping Forest as a whole.
- Currently, COL CityMaps (GIS mapping system) for Epping Forest does not allow the underlying geology to be superimposed on compartment boundaries, which makes it more difficult to target management in those areas of Yardley Hill where the patches of chalky glacial till are present (British Geological Survey, 2020, and Appendix 5).

Neutral grassland

- Ridge and furrow ploughing occurred on the neutral grassland of Chingford Plain east of Bury Road, which was fertilized and limed in the 1950s and 1960s. Part of the area, formerly football pitches, is mown for amenity reasons but still supports a fairly good turf with some Sneezewort. One area is set aside for flying model aeroplanes; the club maintains a runway strip of short mown grass.
- Much of the remainder of Chingford Plain is tussocky neutral grassland with patches of scrub cover, providing excellent habitat for many birds. These areas were grazed until the outbreak of mad cow disease (Bovine spongiform encephalopathy, BSE) in 1996 - at the time, Chingford Plain supported Skylarks.
- Chingford Plain is one of only two large areas of open grassland in Epping Forest, the other being Wanstead Flats; the only other equivalent large area of open grassland in Essex on clay soils is Hatfield Forest.
- There are records of small-scale grazing of parts of Chingford Plain from 2006. This was extended to include the area between Butlers' Retreat and the ditch line to the north as part of the Higher Level Stewardship (HLS) scheme agreement (COL, 2008b). Grazing of the whole of Chingford plain has been initiated as part of the most recent Countryside Stewardship Scheme (CSS) agreement to further restore habitat diversity and build on the success of previous grassland management.
- The use of Epping Forest's own herd of Longhorn cattle is critical to successful grazing (COL, 2008a), as the older 'matriarch' cows have knowledge of edible vegetation that is passed on to younger members of the herd; the Epping Forest herd are also habituated to the level of disturbance the Forest experiences from members of the public.
- The decline in quality of the neutral grassland on Chingford Plain is being addressed by the reinstated grazing regime (COL, 2008b), but there is still a significant issue with trampling/compaction of large swathes of grassland by visitors in the wetter months, and particularly between the Bury Road car park, QEHL and Visitor Centre and Connaught Water, which is detrimentally affecting the grassland quality.

Spring lines, rivers/streams and ditches

- The River Ching issues from Connaught Water and heads southwest through Barn Hoppitt and Whitehall Plain. The woody flora along the river is probably the richest area of scrub anywhere in Epping Forest, including Purple Willow, Buckthorn, Spindle, Dogwood, some Hazel and young Wych Elm, and much Blackthorn.
- The Cuckoo Brook issues just northwest of Epping Forest's boundary in Bury Wood, after which it flows southeast through Bury Wood (compartment 24) to join the River Ching south of Connaught Water. This brook has a diverse

flora in patches, including Wood-sorrel, Dog's mercury, violets, several fern species and Goldilocks. Water shrews were generally present towards the western end.

- The water courses are at risk of over shading and tree/scrub invasion.
- Several ditches drain water from the hills to the north of Connaught Water, including the main ditch alongside the Red Path. The flow rate of these ditches is having an impact on the compartments within this ISP and the ditches need highlighting for appropriate flood risk management (see Section 4.2 of this ISP).

Open Water

- Connaught Water (compartment 27) is the largest water body in the Chingford area, constructed in 1881 and enlarged in 1893, and now designated a Large Raised Reservoir (see Flood Risk section, above).
 - Aquatic vegetation surveys undertaken in Connaught Water have found the following submergent vegetation - Water Net (*Hydrodictyon reticulatum*), Pointed Stonewort (*Nitella mucronata*), Small Pondweed (*Potamogeton bechtoldii*, Essex scarce), Horned Pondweed (*Zannichellia palustris*) and Fennel Pondweed (*Potamogeton pectinatus*). Emergent vegetation is mainly Reed Mace and Common Reed, with some Yellow Flag *Iris pseudacorus*; further planting of emergent vegetation was undertaken as part of the HLF Branching Out project.
 - Connaught Water is incredibly important for the local bat population; there are significant numbers of bats foraging over the pond and this increases during the maternity season.
- The Cuckoo Pits (compartment 24) consist of shallow ponds, two of which are permanent. They are important as the only site for Marsh Cinquefoil in Epping Forest. *Carex nigra* and Purple Loosestrife grow beside the water. Fish are not present in the ponds, so they are very important for toads and have all three species of newt including Great Crested Newt, as well as being important for invertebrates.
- Chingford Golf Course has two permanent ponds (middle pond and lower/new pond); Common Reed dominates middle pond (10th tee pond), whilst the lower/new pond (18th hole pond) has been colonised by *Crassula helmsii* since its creation in 1999 (see Invasive Non-Native Species section). Great Crested Newts are recorded from both ponds.
- Butler's Retreat pond is thought to be a former gravel pit, which fills with water in winter and reduces in size in summer. *Crassula helmsii* is present (Native Landscapes, 2019).
- Warren Pond is a former gravel excavation, with a small island and a constructed bund along its southern edge. There is an outflow pipe through the bund.
 - By the late 1990s, much of the pond surface had been lost to Sallow and *Typha* invasion. These are difficult to clear without breaching the bund and draining the pond, but some limited vegetation and silt clearance took place in 1994.
 - The banks of the pond are very eroded, but photographs suggest that this has been the case for decades.
 - The pond is the only Forest site for Mare's-tail (*Hippuris vulgaris*).
 - There is evidence of erosion from footfall along the top of the bund, which should be inspected regularly for wear and tear, along with the outflow pipe.
- Fish surveys of the main aquatic bodies in Epping Forest are undertaken regularly by COL staff.
 - Connaught Water was last surveyed on 9 March 2018, and found to contain mostly Perch and Tench, with a few Pike, Roach, Bream and Common Carp. Apex predators were observed to be healthy, there appears to be good recruitment of young due to availability of vegetation cover, and few plastic bags

- were seen (these are associated with bread feeding by visitors) (COL, 2018a). Suggested actions from the survey can be found in Appendix 6.
- Warren Pond was last surveyed on 15 February and 9 November 2015, and found to contain Pike, Roach, Rudd, Tench. There were a healthy number of large Roach, thought to be due to the consistent removal of smaller Pike over several years (COL, 2015a & 2015b). Suggested actions from the survey can be found in Appendix 6.
 - Butler's Retreat pond has not been formally surveyed for fish since 14 February 2006, at which point the only fish were Spined Stickleback and a feral goldfish that was removed (COL, 2006a). Catherine Bickmore Associates (2014) recorded the presence of fish in the pond, but the report did not comment on species or numbers. The pond is prone to very low water levels in the summer months.
 - An amphibian survey was undertaken on the ponds and lakes within Epping Forest in 2013 (Catherine Bickmore Associates, 2014) to assess their suitability for amphibians and make management recommendations.
 - Cuckoo Pits East and West Ponds, and Chingford Golf Course middle and lower/new ponds all have records of Great Crested Newts. Consequently, all four ponds are rated as being of high importance for amphibians and high priority for management.
 - Great Crested Newts were not recorded from Warren Pond, Butler's Retreat Pond and Connaught Water; these three areas of open water were assessed as being of medium importance for amphibians and low priority for management for these species. Further details of the survey and specific management recommendations are in Appendix 6.

Bats

- Bat surveys of Chingford Plain (compartment 26) have recorded Serotine, Noctule, Brown long-eared, Daubenton's, Noctule, Leisler's, and Soprano, Common and Nathusius' Pipistrelle. Bury Wood (compartment 24) and Yardley Hill and Pole Hill (compartment 25) have not been surveyed for bats but are likely to support the same species.
- Surveys have confirmed ten bat species within Barn Hoppitt (compartment 29) including Barbastelle, one of the UK's rarest woodland bat species (in 2009), and Leisler's and Serotine, which are both scarce declining species. Nathusius' Pipistrelle, previously thought to be a migratory species in the UK, use Oak pollards as advertisement roosts (male Nathusius' Pipistrelles sing from a specific location to attract a mate, similar to many bird species). The species has been recorded foraging along the River Ching in this compartment. Surveys have shown that all ten species are found to use the wood-pasture habitat, in comparison to the 2-3 species that use the dense high canopy woodland areas.
- Light Pollution from the Connaught Club has been shown to be having a negative impact on the local bat population, especially around the Warren Pond (Froud, A, pers. comm.).
- Connaught Waters was extensively surveyed for bats in the period 2003-2007 (COL, 2007). The surveying data showed the lake and the immediate trees surrounding it, to be rich in species, activity and especially numbers. At that time, there were six confirmed species (Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Noctule, Serotine and Daubenton's). More recent surveys by EF staff have recorded Brown Long-eared, Natterer's and Leisler's.
- More recently (COL, 2020b), the Barbastelle was recorded for the first time at Connaught Water. This is currently the third location for this species within the Forest. This is a rare species within the UK and is listed as Near

Threatened on the global IUCN Red List of Threatened Species. Confirmation of the presence of Barbastelle brings the number of bat species recorded at Connaught Water to ten, the same as Barn Hoppitt.

- The survey data from COL (2007) also showed that bat numbers utilising Connaught Water dramatically increased when insect abundance within the forested areas was low. This underlines the importance of the open water not only for its local bat population but also for wider bat community. With the area around Connaught Water containing large numbers of bats and veteran trees, bat roost potential throughout the compartment is extremely high (COL, 2007), notwithstanding that roost potential across the Chingford area is high.

Birds

- Open water:
 - Numbers and species of waterfowl are well documented for Connaught Water. The lake attracts a large number of waterfowl species, including Shoveler, Mandarin, Teal, Smew, Goosander, Pochard, Garganey, Gadwall, Shelduck, Coot, Moorhen, Great Crested Grebe, Little Grebe, Tufted Duck, Mute Swan, Cormorant and Mallard. However, some species such as Canada Geese can cause significant nuisance problems (see INNS section above).
 - Little Grebes currently breed on Butler's Retreat Pond along with Moorhens and Coots. Warren Pond is an important winter roost site for Mandarin Duck, with the willow carr there also sheltering other wildfowl including regular Shoveler and Teal.
 - Kingfishers are regularly observed hunting not only around Connaught Water but also along the feeder stream and the River Ching, which runs southwest from the Water. This legally protected bird (Schedule 1) breeds reasonably close by, making Connaught Waters an integral part of its feeding territory (COL, 2007). The provision of an artificial nesting wall could allow this species to breed at Connaught Water – and this remains a possible future project.
 - Herons have recently made nesting attempts on the Connaught Water islands and it remains to be seen whether these are isolated pairs.
- Woodlands: The woodland north of Chingford Plain and the mosaic of habitats around Connaught Water once supported Nightingales, last recorded in the early 2000s. The last Nightingale record for the western part of the area was in 2007 on Yardley Hill, by a member of the public. The woodlands also have a good population of Tawny Owl, Nuthatch, Stock Dove and Bullfinch. Lesser spotted woodpecker (UK RED LIST), a species in serious decline, is still holding on in small numbers within the woodlands.
- Grassland and scrub mosaic:
 - The grassland and scrub mosaic of Chingford Plain is incredibly important for breeding songbirds, including Song Thrush and Mistle Thrush (UK RED LIST), and the habitat mosaic is important for wintering Woodcock, Fieldfare and Redwing. Chingford Plain once supported breeding Tree Pipits, Skylarks and Meadow Pipits. The last Tree Pipit territory was recorded in 2001, and Skylarks last bred in 2011, although there have been males singing in late winter in two years since then (see section on Neutral Grassland above).
 - Despite these losses, the Chingford Plain scrub-grassland mosaic remains one of the most important breeding bird areas in the Forest, supporting many migratory species, such as warblers, including the declining Willow Warbler. It was a Cuckoo stronghold in the Forest, with Dunnocks as the probable main host, and in 2020 a Cuckoo returned to the area for the whole spring. The ant-hills are an important food source for Green Woodpecker, a species emblematic of the wood-pasture habitat. Kestrels, now a red-

listed species due to severe recent declines across the UK, is a key breeding bird here that relies on the extensive grassland habitat.

- After Wanstead Flats, Chingford Plain, is the second-most important stop-over habitat for migrating passerines, especially in autumn and, with losses on migration becoming a critical issue, this is an important feature of the Forest given its north-south orientation between the Lee and Roding Valleys.

Invertebrates

- The whole of the Chingford area is important for a huge range of invertebrate species, much like the rest of the Forest. However, of particular note due to the prominence of the Oak wood pasture of Barn Hoppitt, is the saproxylic invertebrate diversity (saproxylic invertebrates rely on dead or decaying wood for their lifecycle). Extensive survey work between 1995 and 2010 confirmed the importance of Barn Hoppitt, with a saproxylic Index of Ecological Continuity (IEC) (English Nature, 2004) which demonstrated that Barn Hoppitt, alone, was of international significance for its saproxylic fauna. Species reliant on decaying wood, such as Cardinal Click Beetle, *Batrissodes adnexus* (a weevil that predate on the Brown tree ant nests) and *Lymexylon navale*, are amongst a diverse range of species at the site.
- The ant hills of Yellow Meadow-ant (*Lasius flavus*) are an important ecological component of old grassland in the Chingford area, both on the open plains and in wood pasture; they are a main food source for Green Woodpecker (*Picus viridis*). Ant hill grassland ideally requires extensive grazing to maintain an open aspect whilst avoiding damage to the ant hills, or alternative careful mowing with small machinery between the ant hills. Remnant ant hills are still present in parts of Barn Hoppitt wood pasture; further south in the compartment, an area of acid grassland with Tormentil had ant-hills with active Yellow-ant colonies in 2006 (Dagley, J.R. and Froud, A., 2006). There are further areas of ant-hills in the remaining open areas of Yardley Hill, as well as on the open grassland of Chingford Plain.
- The dragon and damselfly assemblage of the Forest is nationally important and the Chingford area supports many of these species, including the hairy Dragonfly and the recent coloniser, Willow Emerald Damselfly.

Fungi

- The fungi of the Chingford area are diverse, with many uncommon species, including the rare Oak Polypore, for which Epping Forest is a UK stronghold, and the Zoned Rosette, both species legally-protected under Schedule 8 of the Wildlife & Countryside Act 1981 (as amended).

5.2 Heritage and Landscape

- The name 'Dannets' Hill, on which Queen Elisabeth's Hunting Lodge (QEHL) is situated, is derived from 'Danherth', which was in use in 1498 (<http://epns.nottingham.ac.uk/browse/id/532858b6b47fc40a980001a8>).
- Until the 17th century, the kings of England frequently hunted deer in the Forest. Henry VIII converted part of the Forest in the north of Chingford and the south of Waltham Holy Cross into Fairmead Park, furnishing this with 'standings' or grandstands. In February 1543, £30 was paid towards finishing the Great Standing in the new park and making paddocks there. A few months later, a further payment was made for the work, and in the same year Sir Richard (later Lord) Rich was appointed keeper of the new park. It is not clear whether the park was completed, but it had been 'disemparked' by 1553. The king's short-lived project did, however, leave its mark on

local topography. The name survives in Fairmead Bottom and the Great Standing is an outstanding Grade II* Listed Building (Historic England, 1954), now called Queen Elizabeth's Hunting Lodge.

- QEHL was one of three original 'hunt standings' in the local area and is a unique example of a surviving timber-framed hunt standing. The 'Little Standing' was incorporated within Warren House in the 17th century (Alan Baxter, 2015). Fairmead Standing was in use as Fairmead Lodge (one of many Retreats across the Forest serving refreshments to visitors) but was demolished in the 19th century. The Fairmead Oak, adjacent to the location of the former hunt standing, is a massive, ancient but still living tree, likely to be at least 500 years old (see Appendix 7 for an old photograph of both Fairmead Lodge and the Fairmead Oak).
- The location of QEHL is unique in that it is still partly surrounded by its ancient landscape of 'Chingford Fairmaid Bottom', comprising the area that was disafforested for emparkment by Henry VIII and the remaining ancient Oak trees, which are as old, if not older than, the QEHL building itself (see Chapman and Andre Map of Essex, 1777 – the areas now known as Chingford Plain and Barn Hoppitt). This unique landscape is as much the heritage of the area as the immediate curtilage of QEHL, and this landscape setting is of utmost importance, as evidenced by the Archaeological Priority Area (APA) designation of the wider landscape of Chingford Plain and Barn Hoppitt by the London Borough of Waltham Forest (LBWF, 2020).
- Ownership of QEHL passed to COL as part of the Epping Forest Act 1878, which specified '*Queen Elizabeth's Lodge, with the garden thereof, is hereby vested in the Conservators [COL], for all the estate and interest of the Crown therein and shall be preserved and maintained by them as an object of public and antiquarian interest*' (Epping Forest Act 1878). The interior of QEHL currently hosts exhibitions on Tudor food and social history, whilst allowing visitors to soak up the atmosphere of a unique building nearly 500 years after it was built.
- A granite obelisk was erected at the top of Pole Hill in 1824, under the direction of the Reverend John Pond, MA, Astronomer Royal. It was placed on the Greenwich Meridian; its purpose was to indicate the direction of true north from the transit telescope of the Royal Observatory and the obelisk was crowned with a long pole (see Appendix 7 for photo). The Greenwich Meridian, as changed in 1850 & adopted by international agreement in 1884 as the line of zero longitude, now passes 19 feet to the east of this pillar; an Ordnance Survey trig point stands more accurately on the Meridian, but the original granite obelisk remains, though without the pole (Barker Associates LLP, 2015a). The view from Pole Hill to Greenwich has been obscured over time by vegetation.
- On the Chapman and André 1777 map of Essex (<https://map-of-essex.uk/>), Pole Hill is named as 'Hawke Hill'; presumably the hill came to be known as Pole Hill some time after the erection of the flagpole on top of the granite pillar. The original hill name is remembered in the name for the area of ancient woodland north of the apex of Pole Hill (The Hawk Wood); the former Hawkwood Estate (now commercial premises) also lies to the northwest of Pole Hill, just beyond Forest land.
- The name for the Forest compartment known as Barn Hoppitt derives from an enclosure that was made on Dannets Hill, the word '*hoppitt*' meaning an enclosure. The Connaught Club was established in the enclosure in 1885, to provide facilities for tennis and croquet for the Royal Forest Hotel and the club still in existence on the same site.
- Adjacent to Butler's Retreat café, there is a granite fountain, surmounted by an obelisk and standing on two octagonal granite base steps. The fountain dates from 1899, with '*The gift of Sir Edwin Durning-Lawrence Bart MP*' carved around the bowl. The fountain is known as the 'Durning-Lawrence Fountain' and is an unlisted heritage feature (Barker Associated LLP, 2015b).
- During Victorian times, a number of 'retreats' in Epping Forest, including Jubilee Retreat, Fairmead Retreat and Butler's Retreat, provided entertainment such as helter-skelters, merry-go-rounds, donkey rides and non-alcoholic

refreshments from tea rooms that could seat up to 3000 people. These were very popular with Londoners, who came up to Chingford Plain in horse-drawn buses and charabancs, and later by train to Chingford station.

- The opening of the railway to Chingford in 1873 gave Londoners rapid access to this part of the Forest. Chingford Plain became popular with day-trippers, for whom the railway provided an excellent service. The peak of railway travel to the Forest was probably reached immediately after the First World War. On Whit Monday 1920, 100,000 people arrived at Chingford station by a 5-minute service. The pleasure fairs on the Plain inspired part of Somerset Maugham's *Liza of Lambeth*.
- Butler's Retreat, situated on Rangers Road adjacent to QEHL, was established in 1878 in a former barn dating from the mid-19th century and is now a Grade II listed building (Historic England, 1986). The Butler family ran the retreat from 1890 until the 1970s, and the retreat continued to serve refreshments until it closed in 2009. The COL reopened Butler's Retreat as a café in 2012, having refurbished the building as part of the 'Branching Out' project (Gibberd, 2008).
- The Coach House and stables to the Royal Forest Hotel were built on Epping Forest land immediately to the east of the Royal Forest Hotel (completed 1878). The Coach House originally projected forward of the main building, but this section was demolished in the 1930s. The building was eventually leased to a motor coach company in the late 1970s; when the company relocated, parts of the building were used for museum accommodation for QEHL. As part of the 'Branching out' project, the Coach House was refurbished and now houses the Epping Forest Visitor Centre at Chingford (Gibberd, 2008).
- To the west of Bury Road lies the Chingford Golf Course, laid out on part of the former medieval hunting grounds of Chingford Plain. The course was established as 9 holes in 1888 by Royal Epping Forest Golf Club and, a year later, a further 9 holes were added, designed by William Dunn (Jnr), the first course professional. Some alterations were made in 1927/28 by a member of West Kent Golf Club. In the mid 1950's, the holes on the east side of Bury Road were transferred over to west side with the new holes being designed by Les Gowers, the professional. It is currently laid out in two returning loops, and plays a maximum 6222 yards, par 71. The course is the home to two golf clubs - Royal Epping Forest Golf Club and Chingford Golf Club. In 1901, COL took responsibility for the course and public play was regulated for the first time by COL.
- In 1899, the 'Durning-Lawrence' fountain was erected on land adjacent to Butler's Retreat. It is a polished pink and unpolished white granite drinking fountain, surmounted by an obelisk. The pink granite fountain stands on two octagonal grey granite base steps. Around the bowl is a carved inscription: 'The gift of Sir Edwin Durning-Lawrence Bart MP.' The plinth part underneath the bowl bears an inscription: 'John Lobb Esq F.R.C.S./ Chairman of Epping Forest Committee 1899' (Barker Associates LLP, 2015b). Durning-Lawrence was born in London in 1837. He was a Member of Parliament for Truro; there is no known connection between him and the local area.
- A granite horse/cattle trough with drinking fountain was installed at the northern edge of Chingford Plain east of Bury Road at around the same time. The trough is inscribed on both sides with 'Metropolitan Drinking Fountain & Cattle Trough Association', and beneath the drinking fountain bowl 'In memory of Miss Isabel Constable [date illegible, could be 1899]' (Barker Associates LLP, 2015c).
- The Orion Harriers Running Club was formed in 1911 and occupied space in what is now the Epping Forest Visitor Centre at Chingford. The Club moved to its present location in 2010 and now occupies the former Jubilee Retreat on Bury Road.
- During WWI, an anti-airship gun was positioned on Pole Hill, overlooking the Lea Valley; it was one of a ring of anti-airship defences around London that aimed to combat enemy airship bombers (Green, G, 1987). Shells were brought up to the gun on rails from the end of Mornington Road, a windlass with a wire cable being used for this purpose. The crew resided in an army barracks on the hill and filled their spare time by cultivating part of the field

as allotments for vegetables. The gun emplacement was dismantled at the end of WWI; a concrete base is still in situ on Pole Hill, now obscured by dense vegetation (see Appendix 7 for an old photograph).

- T. E. Lawrence (more recently known as Lawrence of Arabia) owned 18 acres of land at Pole Hill until he sold it to COL in 1930. The 'Cloisters', an L-shaped wooden hut erected by Lawrence of Arabia and his friend Vyvyan Richards, fell into disrepair after the land was sold to COL, and the building was moved to the Warren House woodyard, where it still remains. A 'blue plaque' on the original granite Meridian obelisk records the history of Lawrence of Arabia's association with Pole Hill.
- The anti-airship gun emplacement on Pole Hill, in use during WWI, was reused in WWII as an anti-aircraft gun emplacement; an Epping Forest officer's father remembers spitfires flying past for gunners to practise sighting on.
- During WWII, part of Chingford Golf Course was used as a prisoner of war camp, then a school, which was removed in 1954. The school can be seen on a 1950s map of Chingford parish, Essex.
(<https://maps.nls.uk/geo/explore/#zoom=16&lat=51.63680&lon=0.00591&layers=10&b=1>)
- The Chingford area has a rich and varied history, though the prominence of QEHL may have eclipsed other aspects of the heritage of the local area with some visitors. The Visitor Centre at Chingford, and the museum exhibits therein, are being reviewed (COL, in prep); as part of this analysis, the prominence or otherwise of various aspects of the Chingford area's history will be assessed.

5.3 Access

Car parking

- 66% of visitors to Epping Forest arrive by car (Liley *et al* (Footprint Ecology), 2020); however, the survey also found that 95% of visitors to Connaught Water arrived by car. COL currently offers seven car parks in the Chingford area, of varying sizes, specifications and facilities (Connaught Water, Barn Hoppitt, Barn Hoppitt summer overflow, Connaught Tennis Club, Visitor Centre, Bury Road and Bury Road Golf Course car park).
- Brown tourist signs for 'Queen Elizabeth's Hunting Lodge' direct visitors arriving by car from the Epping New Road, along Rangers Road to QEHL. There are currently no such signs for the Epping Forest Visitor Centre, nor the Bury Road complex of visitor attractions.
- COL car parks: The Chingford area has seven car parks of varying capacity. All car parks should be vacated one hour after sunset; four of them are gated and locked each night (Connaught Water, Barn Hoppitt summer overflow, Bury Road and Bury Road Golf Course car park). Five car parks (Bury Road, Bury Road Golf Course, Visitor Centre, Barn Hoppitt and Connaught Water) have a tarmac surface, with dedicated disabled parking bays.
- Non-public car parks: Butler's Retreat has a small car park set aside by COL for the use of staff.
- The Sustainable Visitor Strategy will aim to address the issues concerning visitor access to the popular locations of QEHL, Connaught Water, the Visitor Centre and Butler's Retreat. The car parks local to these tourist hotspots are small and at capacity most days, as is the larger COL car park on Bury Road. Better pre-visit information is needed, in particular on the ease with which these venues can be reached by public transport and on foot, together with better signposting to locations of interest.
- On-road parking: There is a significant issue of on-road parking on the roads adjacent to Epping Forest, when the local COL car parks reach full capacity. The issue is particularly prominent at Connaught Water along Rangers Road and along Bury Road near to Hornbeam Lane, where parked cars impact on the width of the highway. COL are currently assessing potential solutions to the issue.
- Car Park charging: Parking charges have been introduced at COL car parks in the Chingford area in 2021.

Public transport

- The Chingford area of Epping Forest is easily accessible by public transport from Chingford Station. As well as the train station, a number of bus routes terminate at Chingford Station from localities further into London.
- The 397 bus route from Debden Broadway to South Chingford stops on Rangers Road near the Royal Epping Forest Golf Club. However, there are no bus stops further along Rangers Road (for example at Connaught Water); as the bus route goes south via Forest Side and Whitehall Road to Buckhurst Hill and Debden.
- As part of the overarching Sustainable Visitor Strategy (COL, in prep), the connectivity between existing public transport connections (local bus stops and train/underground stations) and popular locations within Epping Forest, such as Connaught Water, will be assessed. Management works, such as signposting and waymarking, will be identified, to improve these connections and facilitate visitor access on foot or by bike.

5.4 Visitor Services

- **Toilet facilities:** Toilet facilities are available in the Epping Forest Visitor Centre at Chingford during opening hours; these include a disabled access toilet. Butler's Retreat provides toilet facilities for its customers, as does the Holly Trail café/golf course, both available during opening hours. With increased promotion of the Bury Road car park as the gateway to the Chingford area, there is a need to improve toilet facilities, working with the local authority or as part of development/improvement of facilities in the area.
- **Managed Paths:** COL provide approximately 38 km of managed paths across the Chingford area with an even wider network of desire paths. The managed path network comprises the following (see Glossary):
 - 23 km of official all-weather and natural paths;
 - 2.1 km of Public Rights of Way;
 - 6.7 km of waymarked trails (easy access trail and most of the Willow and Holly trail; and,
 - 5.9 km of informal paths.
- The large number of desire and informal paths means that even with a good quality map, navigating the path network requires good local knowledge. This restricts the ability and/or confidence of many visitors to find their way from wider afield to visitor attractions on foot rather than by car and inhibits visitors from exploring further. Recently, new fingerposts have been installed in the Chingford area at key path junctions, to direct visitors towards points of interest, such as the Visitor Centre, QEHL and Connaught Water, and more are planned, subject to funding being available.
- **Waymarked Trails:** The Willow Trail is around 2.5 miles/4km long and provides mostly easy walking over a range of surfaced tracks and grassland; features of interest include Connaught Water and Grimston's Oak. The Holly trail is also around 2.4 miles/4km long and follows surfaced paths with short sections across the open grassland of Chingford Plain; the trail starts at the Holly Trail café. The Holly and Willow Trails overlap along a section of surfaced path, such that the two trails can be combined in a figure of eight to form a longer walk. Waymarking signage for both trails has been installed at the maximum spacing, which some users might find insufficiently frequent.
- **Easy Access Trail at Connaught Water:** This easy access trail is one of three provided by COL across Epping Forest; it is around 980m long, on broadly level ground, and is favoured by visitors for the opportunity to get close to open water; 'feeding the ducks' is a popular activity with younger children.

- COL has recently published a Cycling Code of Conduct (& No cycling locations):
 - Cycling has been banned from a section of land at the top of Pole Hill since 2006 (COL, 2006b&c); the status of this ban is currently under review.
 - There is a 'no cycling' restriction on the Easy Access Path around Connaught Water, and the link paths to it (Red Path and Cuckoo Brook path).

Epping Forest Visitor Centre at Chingford

- This is housed in the former Coach House and stables of the Royal Epping Forest Hotel. The Visitor Centre building is owned and operated by COL; it provides information maps and leaflets on the Chingford area and QEHL, a gift shop and permanent and temporary exhibitions from the COL museum collection and local artists inspired by Epping Forest. The Visitor Centre had almost 42,000 visitors in 2018-19, and an additional 25,000 to QEHL in the same year (COL, in prep); the review of the Visitor Centre will explore how to update the Visitor Centre museum displays to meet the changing needs of visitors (see Heritage section above).
- The small car park in front of the Visitor Centre detracts from the overall appeal of the Visitor Centre. The review of the Visitor Centre will examine whether the car parking spaces could be better used, for example, by creating a space for picnic tables with sympathetic screening/planting from the road and adjacent hotel, thereby encouraging dwell time in the vicinity of the Visitor Centre and associated shop.
- The flagstones at the entrance to the Visitor Centre are not capable of withstanding the weight of heavy plant such as tractors – this needs to be borne in mind when operations are carried out. At the back of the Visitor Centre, there is a fence with a removable panel, to allow heavy machinery to be brought on site without going over the flagstones.
- A large colourful frontage has been installed at the entrance to the Visitor Centre, to increase its visibility from Rangers Road. However, the building cannot be seen by visitors arriving at the Bury Road car park, due to vegetation growth and the lack of signage on the wall of the Visitor Centre that faces down towards the Bury Road car park. This hampers connectivity between the two sites, and opportunities are missed for visitors to access both sites in the same visit. The back wall of the centre, if cleared of vegetation would also provide a useful backdrop for promotional banners rather than the intrusive location at the back of the fence currently used.

Queen Elizabeth Hunting Lodge

- As well as being an historic building, QEHL is registered as a venue available for weddings and civil ceremonies.
- The review of Visitor Centre at Chingford will also explore the potential development of both the Visitor Centre and QEHL as commercial venue hire locations.

Chingford Golf Course

- Chingford Golf Course is an 18-hole public golf course run by COL as part of Epping Forest with a long history (see Heritage section); there is a small shop in the Caddy House building opposite the golf course, adjacent to the Holly Trail café.
- The course is laid out in two returning loops, and plays a maximum 6342 yards, par 72. In 2019, just under 25,000 rounds of golf were played; 2020 was significantly higher due to the uptake of golf during Covid-19.

- The course is home to two golf clubs - Royal Epping Forest Golf Club and Chingford Golf Club. In addition, visitors to Epping Forest can book a round of golf directly with COL via the golf shop on Bury Road (pay and play) – green fees vary across the week/time of day.
- A Golf Course Management Plan (COL, 2001) set out management prescriptions to integrate the management of the golf course with the natural aspect of the Forest, including the existing veteran trees, pond with Great Crested Newts and the grassland ‘roughs’ and scrub. The management plan is now 20 years old; an update to the plan would ensure that it remains aligned to the current Epping Forest Management Strategy (COL, 2019b).
- The facilities in the current Caddy House building, particularly the toilet provision, are insufficient to meet current and projected future visitor demand.
- Vegetation management issues associated with the golf course operation are detailed below.
 - The 10th tee pond is overgrown with tall reeds that block golfers’ view of the fairway and green, creating a hazard, particularly as walkers regularly cross the fairway. This pond has Great Crested Newts (European Protected Species), so sensitive and properly timed management is required.
 - There are a number of Poplar trees to the sides of the fairways; these have a short lifespan and as they age, the risk of branches falling increases. The Poplars are in need of crown reduction and ultimately replacement with a more suitable tree species. Ideally, only one new tree would be planted for each group of 2-3 Poplar trees currently in situ.
 - A large oak at the 13th hole has been crown-reduced recently – this tree needs to remain at this size going forward or the hole will become unplayable.
- The golf course suffers from a variety of anti-social behaviour issues, which are detailed in the ‘Anti-social Behaviour’ section of this ISP. Potential solutions to some of these problems can be found in the Outline Management Programme table of this ISP.
- The budget for the golf course maintenance is currently not tied to the number of rounds played – if the increased number of rounds played in 2020 continues in future years, the golf course maintenance activity will need to increase to maintain standards.
- A new irrigation control system was installed in 2019 to allow automatic watering of the tees and greens at night.
- A surfaced path, originally installed to provide golfers with access to tees, forms a partial looped walk around the golf course and is accessed by walkers from the local area. This route could be enhanced with better waymarking, to link the path back to Bury Road in a full loop, thereby reducing the number of people walking across the fairways.

5.5 Community

Catering facilities

- There are two COL tenanted catering facilities in the Chingford area:
 - Butler’s Retreat: This café, situated adjacent to QEHL and Visitor Centre at Chingford, is very popular throughout the year. However, the outdoor space around the café suffers from muddy conditions during the wetter months, which needs addressing.
 - Holly Trail café: This café is adjacent to the Chingford Golf Course and pro shop, as well as Go Further Cycle Hire, and is popular with visitors making use of these facilities, as well as visitors looking to explore Chingford Plain. The café toilet facilities are for the golf course and café users only, though these are used by visitors to the wider Chingford area and, in busier months, the original design capacity is being

stretched due to this wider use. Public toilets are available during opening hours at the Visitor Centre, less than 400m away on foot.

- Ice cream vans: COL currently (2020) licences two ice cream vans, one in the Connaught Water car park and one in the Bury Road car park; both are popular with visitors. From the start of the 2021 season, ice cream vans will be expected to comply with ULEZ (ultra-low emissions zone) standard, to support the City of London Corporation's Air Quality Strategy (COL, 2019a).

Other community activities

- Fishing: Fishing is allowed in Connaught Water, Warren Pond and Butler's Retreat Pond to those holding an Environment Agency rod licence, but not in any of the other ponds in the Chingford area.
- Public event spaces: The whole of Epping Forest has potential for events; individual locations are judged on their suitability for the nature and size of the event proposed, as per COL's Events Policy (2018b).
- The Orion Harriers: The Orion Harriers are an all-inclusive running and athletics club. Members make use of Epping Forest for training runs and races; club members also train on the athletics track at Waltham Forest Feel Good Centre. There is a membership of over 300 women and men aged from 18–86, plus a vibrant juniors' section aged 8-18 with an additional 300 members.
- Royal Epping Forest Golf Club: Membership of the club is open to both men and ladies and has a youth section. Membership allows access to the clubhouse opposite the 18th green of Chingford Golf Course; members have access to preferred tee-times on Chingford Golf Course.
- Chingford Golf Club: A men only club; members play on Chingford Golf Course and the clubhouse is based in Station Road, Chingford. Social membership is open to ladies.
- Chingford Model Flying Club: The club is one of the oldest in England, established around 1936. The club maintains a flying strip on Chingford Plain; in addition to the membership fee, members require a licence from COL to fly, and a CAA Drone Registration Scheme fee may also apply.
- Love North Chingford: A Facebook community organisation with around 3500 members; the Facebook page publicises local events, businesses and charities.
- Our Place – Chingford: Waltham Forest is one of five boroughs, and the only one in London, to be part of a government pilot scheme which aims to better connect communities and improve social integration. There is a dedicated team of Network Managers, one of whom is based in Chingford, to support fellow residents and volunteers in building an integrated, supportive and safe community, where every resident and local organisation is empowered to help make Waltham Forest a better place to live. The Chingford page of the website mentions the wildlife and ancient woodland of Epping Forest and the historic QEHL as positive reasons to live in the Chingford area (<https://ourplacewf.org/chingford>).
- Event location: Chingford Plain hosts travelling circuses/fun fairs several times a year, and has been used for large scale events for many years, including the COL-hosted Forest Festival and LBWF 'Borough of Culture' festivities; the area has the potential to hold future large scale events, subject to the relevant permissions.

5.6 Visitor Management

- The Chingford area is adversely impacted by a large number of relatively low-level (compared to some other parts of Epping Forest) anti-social behaviour problems, all of which add up to a significant level of nuisance for those visitors who comply with the byelaws and for local residents, as well as damaging the natural aspect of the

Forest. Of note are littering, unlicensed spontaneous social events, fire-setting, fly-tipping and illegal metal-detecting/digging up potential finds.

- Fire hazard reduction and management measures across Epping Forest, including access and habitat management, are being enhanced as part of a Major Incident and Emergency Response Plan (COL, in prep.)
- Golf course:
 - Disruption of play by walkers crossing the fairways; dog-fouling and digging on the greens and tees.
 - Unauthorized play on the course on mid-summer evenings, once the golf shop has closed at 7pm.
 - In the summer months, informal football is played on the fairways and people picnic on the short turf, disrupting golf play.
 - At night, the golf course is used for illegal motorcycling, drinking, drugs and courting couples wanting a 'private' space. These activities result in large quantities of litter and damage to the fairways, greens and tees. The layout of the golf course, with tree and shrub screens, facilitates this anti-social behaviour, but removing these vegetation screens would fundamentally alter the nature of the golf course and the 'natural aspect' of it as part of Epping Forest.
- Dogs:
 - The vast majority of dog walkers act with consideration of other visitors, keeping their dogs under control. Nonetheless, a small proportion allow their dogs to negatively impact on other visitors (e.g. by not picking up dog faeces), golfing activities, COL cattle grazing and wildlife (e.g. swimming in the ponds, which disturbs wildfowl and causes neonicotinoid pollution).
 - Historically, ground-nesting Skylark bred on Chingford Plain; it is thought that disturbance from dogs contributed to their decline and eventual loss from the Plain.
- Cycling:
 - Most cyclists follow the cyclists' code of conduct (COL, 2021). However, a small proportion cause damage to the Forest by cycling off the main paths and in sensitive habitats, creating obstacle courses with fallen timber and/or by digging up the ground, damaging fences and gates that are in place to prevent cattle from straying onto the major road network, and cycling at speeds that do not take other visitors to the Forest into consideration.
 - There is an issue with visitors who cycle down towards Chingford from Fairmead along the Red Path. These cyclists arrive at Connaught Water wanting to go on further but are presented by the 'no cycling' easy access trail, with no obvious way to progress further south. Options to solve the issue could include better signage further north to ensure cyclists bypass Connaught Water.
- Motorcyclists: Motorcyclists are not permitted within Epping Forest but access Yates Meadow and the golf course, causing damage to the grassland habitat.
- Fishing: Connaught Water and the other larger ponds suffer from issues such as people fishing without a licence, fish being taken away and non-native species being introduced.
- Drone use: Unofficial drone use on Chingford Plain causes noise pollution and may interfere with the legitimate flying of model aircraft by members of Chingford Model Flying Club.
- Rough sleeping: The Chingford area is not particularly prone to rough sleeping, though it has occurred most recently in the dense scrub and secondary woodland on Pole Hill. Staff work actively with a range of government and local services to help vulnerable people rough sleeping on the Forest to find a better outcome.

- Management to reduce anti-social behaviour: The COL will be working with stakeholders including the Police Services and Epping Forest District Council to develop an Anti-Social Behaviour Management Plan for 2021/2022, which this ISP anticipates and dovetails.

5.7 Local Plans

- Local Plans: The Local Plans for both Epping Forest District Council (EDFC) and the London Borough of Waltham Forest (LBWF) are being revised and both are planning a significant increase in housing and employment space (see Appendix 8 for detailed information), as does the London Borough of Redbridge (LBR) Local Plan 2015-2030, which was formally adopted on 15 March 2018. The Chingford area of Epping Forest SAC straddles all three administrative districts/boroughs.
- The northern half of Epping Forest SAC is wholly within Epping Forest District Council; as such, a strategic Habitats Regulations Assessment (HRA) is required for EFDC's new Local Plan. In addition, other Local Plans will also involve review by strategic HRAs, including the forthcoming Local Plan of the London Borough of Waltham Forest (LBWF) that, as drafted, would increase significantly the number of houses within 3km of Epping Forest. The adopted Local Plan for LBR includes a policy requiring any development within a mitigation buffer zone of 6.2km will require a screening assessment and an HRA unless there are no adverse effects on the Epping Forest SAC.
- EFDC Local Plan Submission Version Examination-in-Public: Following the conclusion of the examination-in-public, the Planning Inspector determined that "*I cannot conclude beyond reasonable scientific doubt (as the parties all agree that I must) that the Plan will not adversely affect the integrity of the SAC until steps have been taken towards resolving it*" (Phillips, 2019). Natural England (the statutory advisory body on matters relating to SACs and the Habitats Regulations), the Conservators of Epping Forest and EFDC, along with other relevant London Boroughs, are in the process of formulating and agreeing an SAC Mitigation Plan for the whole of Epping Forest SAC. The SAC Mitigation Plan will aim to either avoid or mitigate adverse impacts on the Forest that would be due to three identified factors: increased recreational pressure, more general urbanisation impacts and air pollution.
- SAC Mitigation Plan: There are three key aspects to the Epping Forest SAC Mitigation Plan that relate to recreational pressure on the Forest:
 - Zone of Influence (ZoL): The recreational Zone of Influence around the SAC is defined as the distance, as determined by standardised visitor survey(s), which encompasses up to $\frac{3}{4}$ of visitors (not including holiday-makers) that travel to visit Epping Forest SAC. EFDC has recently commissioned a second Visitor Survey (Liley *et al*, Footprint Ecology, 2020) to update its HRA, which has confirmed the accepted Zone of Influence from the 2017 Visitor Survey as 6.2km.
 - Strategic (visitor) Access Management and Monitoring measures (SAMMs): Natural England and The Conservators are working with EFDC, Harlow District Council and the London local authorities to agree the management and monitoring measures necessary to avoid any negative impacts on the SAC arising out of the various Local Plans affecting the ZoL area, in order to safeguard the integrity of the SAC (LUC, 2020). The funding of these measures is also currently under review, although some monies have already been collected from developers.
 - Suitable Alternative Natural Green Spaces (SANGS): The provision of SANGS is a key aspect required to avoid negative impacts on the integrity of the Epping Forest SAC from increased recreational pressure resulting from new Local Plan developments (COL, 2020c). SANGS are, or contain significant amounts of, semi-natural habitats of a sufficient size and high quality that local residents, and those from further afield, will choose to visit them as an effective alternative to a visit to Epping Forest SAC. Such alternative

provision should have the effect of alleviating the pressure of additional visits to the SAC from the increased residential population and the subsequent impact of these visits. Natural England and The Conservators are currently liaising with EFDC and other local authorities over the provision, location and quality of suitable alternative natural green spaces.

- Honeypot locations with Epping Forest: Connaught Water (within the SAC) is already a very well-known location, with existing negative impacts on the features of conservation interest of the Epping Forest SAC. The developments arising out of the new Local Plans are likely to add further negative impacts to the Chingford area, unless there are robust SAMMs to better manage the visitors who come to the Chingford area and high quality SANGS to provide realistic alternatives to a visit to this part of Epping Forest. Long term monitoring of visitor impact is also crucial to avoid creeping, attritional damage to the integrity of the SAC in the future. The levels at which the SAC Mitigation Plan tariffs, or alternatives, are set are also critical, to ensure adequate funding for the SAMMs and in-perpetuity management of the SANGS.
- The Royal Epping Forest Golf Club, which is directly adjacent to Chingford Golf Course, is marked for development in the draft LBWF Local Plan (see <https://www.walthamforest.gov.uk/content/local-plan> for full list of Local Plan documents).

6. CHINGFORD AREA MANAGEMENT STRATEGY

'London's Great Forest', a strategy and management plan for Epping Forest 2020-2030 sets out five key strategic priorities for Epping Forest, these being:

- A welcoming destination for all;
- A beautiful Forest, sustaining internationally and nationally important wildlife habitats in an ancient wood-pasture mosaic;
- An inspiring space for people's health, recreation and enjoyment;
- A range of special heritage landscapes which are protected and celebrated; and,
- A resilient environment, where challenges are embraced, and opportunities explored.

Within the context of the overarching strategy and management plan for the whole of Epping Forest (above), this ISP collates current and past management and sets these into an integrated context whilst also identifying a series of local management strategy objectives for the Chingford area, to be implemented over the next 5-10 years (Table 1). Proposals to manage recreational pressure and air pollution impacts on the SAC will form part of these Chingford area objectives within a broader SAC Mitigation Strategy that is being developed in partnership with other competent authorities (e.g. EFDC) and Natural England.

The City of London Corporation will also discharge its obligations with respect to property management issues, as identified in this ISP.

Table 1: Management Strategy Objectives for the Chingford Area

Chingford Area Management Strategy Objectives		Epping Forest Management Strategy Objectives
A	To identify a programme of conservation measures that builds on existing management and further contributes towards improving the condition status of the Epping Forest SAC and SSSI in the Chingford area.	2, 5
B	To ensure that COL offers a visitor experience to the Chingford area that meets the needs of the surrounding communities today and into the future, in a sustainable and welcoming way.	1, 3, 4, 5
C	To finance an Infrastructure Improvement Programme for the Chingford area, partly derived from income generated locally.	5
D	To seek to mitigate the impact of additional visits from new developments within Epping Forest SAC's Zone of Influence, through a range of measures including improved landscaping, alternative routes and destinations, alongside more and improved interpretation and orientation.	1, 2, 5

7. OUTLINE MANAGEMENT PLAN

Objective	Action	Timing ² (ongoing/years/subject to funding)
City Corporation obligations, A, B	<p><i>Site safety and statutory work</i></p> <ul style="list-style-type: none"> Continue to undertake COL statutory requirements with respect to site safety and statutory work. This including managing tree safety and Forest furniture according to relevant City Corporation Policies; and, Liaise with COL DBE to agree the funding of a programme of repair work for Connaught Water dam, as detailed in the most recent Reservoir Inspection report (Atkins, 2016). Ensure that the repair works are completed by 2026. Schedule regular inspections of the Warren Pond bund and outflow pipe for wear and tear. Thames Water pipeline: <ul style="list-style-type: none"> Using the aerial photographs in Appendix 4, establish the actual extent to which tree/scrub vegetation has grown over the Thames Water pipeline via survey work; Prepare a works programme to remove vegetation from locations of concern and return it to grassland. Once the vegetation removal is complete, include the new areas of grassland in the annual grassland cutting regime for the Chingford area. 	Ongoing

² Ongoing = task is ongoing on cyclical basis in current management of the site, 2019 = first year of new task, subject to funding = additional funding required for task / project to be progressed

Objective	Action	Timing ² (ongoing/years/subject to funding)
	<ul style="list-style-type: none"> Following completion of the Access Audit (COL, in prep), complete wayleave agreements with outstanding third parties to safeguard the Forest's boundaries. 	
A, D	<p><i>Habitat Management</i></p> <ul style="list-style-type: none"> A 10-year Countryside Stewardship Scheme programme for most of the Chingford area has recently been agreed and is underway, building on 30 years of agreed and approved management work across the whole area. Key aspects of the current cycle of management include: <ul style="list-style-type: none"> Protection of ancient trees, including through pollarding, crown reduction, fencing and soil condition amelioration; Extension of the wood-pasture landscape habitat across the Chingford area by: <ul style="list-style-type: none"> Undertaking habitat management works to open up former wood-pasture; Expanding cattle grazing using Epping Forest's herd of Longhorn cattle and the new GPS collar technology; and, Providing additional water troughs across the Chingford area to allow the cattle to avoid busy areas and expand their grazing into new areas of the Forest. Restoration of the calcareous grassland outcrop on Yardley Hill: <ul style="list-style-type: none"> Upgrading COL CityMaps to include a data layer on the geology of Britain from British Geological Survey; Using the mapped geological information to target scrub clearance on Yardley Hill to areas of chalky boulder clay, and linking these with existing open areas, to facilitate cattle movement and grazing; Implementing a cyclical cutting regime and/or reinstate grazing (using the new GPS collar technology) in the cleared areas to encourage the return of species rich calcareous grassland. Preparation of an aquatic habitat management plan for the streams and their sources, ponds and ditches in the area (including the golf course, see below), using the suggested management actions in Appendix 6 of this ISP, with regard to Great Crested Newt populations. Preparation of a vegetation management plan for the Chingford Golf Course, to include <ul style="list-style-type: none"> tree management / replacement with more suitable tree species, scrub management and/or removal, pond and ditch management; consideration of safety and hazards particular to the golf course operation, as well as the 'playability' of tees and holes; sympathetic management of the roughs to favour the scarcer plants in these areas; and, realignment of the proposed new footpath across the Golf Course, as detailed in the SAC Mitigation Strategy for Epping Forest, to reduce the hazards associated with walkers crossing the golf course. 	(dates to be agreed)

Objective	Action	Timing ² (ongoing/years/subject to funding)
City Corporation obligations, A, D	<ul style="list-style-type: none"> • Identification of measures, with partners through the SAC Mitigation Strategy, to reduce air pollution from road traffic impacting the SAC. <p><i>Invasive species management</i></p> <ul style="list-style-type: none"> • Monitor and control invasive species to ensure we meet statutory and COL agreed policies and guidelines, including: <ul style="list-style-type: none"> ○ Oak Processionary Moth management, nest removal and awareness raising with visitors through signage and other communication methods; and, ○ Control of <i>Crassula helmsii</i> and other INNS, with a risk-based hierarchical approach to control. 	(dates to be agreed)
B, C, D	<p><i>Heritage</i></p> <ul style="list-style-type: none"> • Queen Elizabeth Hunting Lodge: <ul style="list-style-type: none"> ○ EF staff to support COL City Surveyor's Heritage Estate Team to: <ul style="list-style-type: none"> ▪ Review both the recommendations in the CS and progress on the planned costed maintenance works for QEHL created in 2016. ▪ Determine which works have been completed from the CS and spreadsheet, revise the schedule for outstanding works and identify funding to complete these tasks. ▪ Commission a Conservation Management Plan for QEHL. ▪ Continue to monitor Deathwatch beetle numbers in QEHL, and act on any reported recommendations. ▪ Ensure that the moisture data for QEHL is being monitored and any required actions are undertaken. • Review the future uses of QEHL, the Epping Forest Visitor Centre and Museum at Chingford within the context of the Archaeological Protection Area (APA) designations for both QEHL and its wider landscape, and consider options for re-providing services as part of a potential new hub at Bury Road car park; • Review the feasibility of restoring the historic view from the top of Pole Hill to Greenwich, to help meet aspirations to provide a unique and memorable visitor experience. Implement works as appropriate. 	(dates to be agreed)
B, C, D	<p><i>Visitor Services</i></p> <p>Within the context of the forthcoming Sustainable Visitor Strategy (due 2021), prepare an Access Statement for the Chingford area. Key aspects of this statement to include:</p> <ul style="list-style-type: none"> • Protection of the integrity of the landscape, a key feature of the Chingford area and of central importance to ecology/conservation, heritage and visitor enjoyment. • Agreeing the approach for the SAC Mitigation Strategy with both LBWF and EFDC to ensure an integration of the priorities and proposals, as there is likely to be a mixture of SAMMS for SAC and infrastructure/SANGS toolbox for the non-SAC land across Compartment 26. • Works to improve visitor access: <ul style="list-style-type: none"> ○ Improving footpath connections between visitor hotspots and the COL car parks; 	(dates to be agreed)

Objective	Action	Timing ² (ongoing/years/subject to funding)
	<ul style="list-style-type: none"> ○ Improving and waymarking foot and cycle access options for visitors to get to attractions in the Chingford area without a car, e.g. from Chingford Station/bus stop on Rangers Road to QEHL and Connaught Water; ○ Habitat management works to improve the visibility of the Visitor Centre from Bury Road car park to better connect the two; and, ○ Reducing damage to Forest verges along Rangers Road and Bury Road due to Forest visitor roadside parking. ● Improving accessibility for visitors around the Chingford area: <ul style="list-style-type: none"> ○ Providing a path linking Bury Road car park, the Visitor Centre/QEHL and Connaught Water as part of the forthcoming SAC Mitigation Plan (see LUC, 2020); and, ○ Developing a further range of waymarked routes across the Chingford area from Bury Road car park (e.g. around the golf course and beyond to Pole Hill and Yardley Hill/Yates Meadow) to meet the diverse needs of Forest visitors, to link with the wider Forest and to reduce visitor pressure on the relatively small space of Chingford Plain, an important part of protecting the SAC. ● Works to enhance the welcoming setting of the Visitor Centre/QEHL/Butler's Retreat café: <ul style="list-style-type: none"> ○ Upgrading the surfacing around Butler's Retreat café in a sensitive manner, so as to protect the heritage of the building and its Archaeological Priority Area and the natural aspect of the surrounding Forest, and to ensure that any works are SUDS compliant. ○ Review options for enhancing the visibility and welcoming appeal of the Visitor Centre entrance area; e.g. the adjacent car park repurposed as an area for picnic tables, with screening plant tubs. ● Reviewing the brown tourist sign provision. 	
City Corporation obligations, B, D	<p><i>Enforcement</i></p> <ul style="list-style-type: none"> ● Ensure the Antisocial Behaviour Management Plan and Enforcement Strategy (COL, in prep) reflects the operational concerns of the Chingford area. ● Continuing to undertake anti-social behaviour management in conjunction with local stakeholders and partners e.g. Police, NEPP and Local Authorities. 	<p>2021</p> <p>Ongoing</p>
A, B, C, D	<p><i>Resourcing</i></p> <ul style="list-style-type: none"> ● Develop an Investment Resourcing Plan for the Chingford area in conjunction with the emerging SAC Mitigation Strategy. To achieve the required site investment, key aspects of the Plan will include: <ul style="list-style-type: none"> ○ Identifying investment needs and potential third-parties; ○ Identifying potential new on-site income generation, particularly within the Bury Road footprint; ○ Reviewing Golf Course maintenance budget to ensure that existing course standard is maintained as player numbers increase over time; ○ Grant-funding opportunities explored; and, 	<p>(dates to be agreed)</p>

Objective	Action	Timing ² (ongoing/years/subject to funding)
	<ul style="list-style-type: none"> Identifying income opportunities arising from the Epping Forest SAC Mitigation Strategy, resulting from the emerging Local Authority Local Plans. 	

8. POTENTIAL ENHANCEMENT PROJECTS REQUIRING EXTERNAL ADDITIONAL SUPPORT & RESOURCES

Additional support needs to be sought from local businesses and community partners to take forward the following projects:

- Visitor access infrastructure: Unquantified at present is the long-term development of the visitor access infrastructure to meet changing community needs, linked to future substantial development in the area. Works arising from such developments does not form part of the current site expenditure and additional funding will need to be identified to progress any changes and to develop plans and mitigation proposals. This includes new path construction, signage and visitor centre/Caddy house facilities improvements
- Ancient tree management: Survey of ancient / veteran trees could be undertaken by a community partner.
- The large boardwalk and fishing platforms on Connaught Water are halfway through their working lives. Extra funding will be required to replace the boardwalk, at least.

9. GLOSSARY OF TERMS AND ACRONYMS

Term / Acronym	Definition
Acid grassland	Nutrient poor acidic soils and grassy-mossy vegetation, including sheep's sorrel, tormentil, heath bedstraw, wavy hair-grass and sheep's-fescue. This type of grassland is on a continuum from heathland habitat and consequently heathers, such as ling, bell heather and cross-leaved heather, may also be present, and the grassland may be a mosaic of herbs and shrubs.
ACPO	Association of Chief Policier Officers (replaced in 2015 by NPCC)
APA	Archaeological Priority Area
BGA	Blue-green algae
BSE	Bovine Spongiform Encephalopathy
Chalybeate spring	Also known as a ferruginous spring, is a mineral spring containing salts of iron
COL	City of London Corporation
EA	Environment Agency
EF	Epping Forest
EFHT	Epping Forest Heritage Trust
Gravel workings	An area using for the extraction of gravel, often in a river valley where the water table is high, so that they may naturally fill with water to form ponds or lakes

Term / Acronym	Definition
High risk	In the context of the Flood and Water Management Act 2010, the Environment Agency classifies water bodies as being 'high risk' if an uncontrolled release of water could result in loss of life.
HLF	Heritage Lottery Fund
ISP	Individual Site Plan
Large raised reservoir	In the context of the Reservoirs Act 1975, a water body is classified as a large raised reservoir if it impounds more than 25,000 cubic metres of water
LBR	London Borough of Redbridge
LBWF	London Borough of Waltham Forest
LGBT	Lesbian, Gay, Bi and Transgender
LoGS	Local Geological Sites, as listed by GeoEssex: http://www.geoessex.org.uk/introduction_and_best_sites.html
MPS	Metropolitan Police Service
NE	Natural England
NPCC	National Police Chiefs' Council (replaced ACPO in 2015)
NSNO	'No Second Night Out' (Mayor London initiative)
OPM	Oak Processionary Moth
PSE	Public Sex Environment
SAC	Special Area of Conservation (European designation)
SINC	Site of Importance for Nature Conservation (local designation)
SSSI	Site of Special Scientific Interest (UK designation)
TfL	Transport for London
Wood pasture	An area that has been managed by a long-established tradition of grazing, allowing the survival of multiple generations of open-grown and/or pollarded trees, characteristically with some veteran/ancient trees and a mosaic of habitats including scrub.
Official All-weather Path	Paths identified on the Official Epping Forest map as all-weather paths promoted for use by horse riders, cyclists and pedestrians.
Official Natural Path	Paths identified on the Official Epping Forest map as natural paths promoted for use by horse riders, cyclists and pedestrians, usually seasonally closed.
Public Right of Way (PRoW)	Paths identified on the definitive map that the public have a legally protected right to pass and re-pass. Depending on the specific path's status, people will be able to access on foot, cycle or horseback.
Easy Access Trail	Four trails promoted as 'Easy Access' with a level, firm, non-slip surface and regular benches and passing places for wheelchairs. Located at High Beach, Connaught Water, Knighton Wood and Jubilee Pond. Cycling and horse riding are not allowed.
Informal Path	Paths that are highlighted on the Strava App heat map as well used but not already identified as an Official path. Further routes may be added to the Informal Path network if local information suggests there is enough usage to warrant the path's inclusion in this category.

Term / Acronym	Definition
Waymarked Trail	Nine waymarked circular paths established across Epping Forest and the Buffer Lands. Each trail follows official, informal and desire paths as well as Public Rights of Way (PRoW), with some on PRoW on land not managed by the City of London.

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11. APPENDICES

1. Detailed Activity Plan
2. Inspecting Engineer's Recommendations for Connaught Water Dam (Atkins, 2016)
3. List of buildings and structures in the Chingford area
4. Thames Water pipeline – locations with potential problem vegetation
5. Yardley Hill and Pole Hill - historical information showing scrub encroachment since 1888-1913, and locations of chalky glacial till outcrops on Yardley Hill
6. Amphibian survey results and management recommendations for ponds in the Chingford area
7. Old photographs
 - Photograph 1: Fairmead Lodge (now demolished) and Fairmead Oak (still in situ and alive)
 - Photograph 2: World War I anti-aircraft gun emplacement on Pole Hill
8. Local Plans – detailed information
9. Figures

APPENDIX 1: Detailed Activity Plan

Operational Activity	CMPT	Location	Start Month	Year	Cycle	Description	Team
AW - Management access capital	24, 25, 26, 27, 29	Chingford area	Dec	2023	0	Visitor access: Improve and waymark foot and cycle access options for visitors to get to attractions in the Chingford area without a car, e.g. from Chingford Station/bus stop on Rangers Road to QEHL and Connaught Water	HVS/HOP
AW - Management access capital	26, 27	Chingford area	Dec	2027	0	Visitor access: Provide a new surfaced circular path linking Bury Road car park, Connaught Water and the Visitor Centre/QEHL. (<i>SAC Mitigation Plan</i>)	HOP
AW - Management access capital	26	Chingford area - Butler's Retreat	Sep	2024	0	Visitor access: Upgrade the surfacing around the Butler's Retreat café, both the hard/landscaped and grass surfaced areas	HOP
AW - Management access maintenance	26, 27, 29	Chingford area	Dec	2027	0	Visitor access: Install structures to provide long term protection of Forest verges along Rangers Road, which is being damaged by roadside parking of Forest visitors. For example replacing the logs with bollards when the logs near the end of their life.	HOP
AW - Pedestrian access management	26	Chingford Plain: paths	Jul	2022	1	Path cuts: Cut managed paths across Chingford plain to maintain a 2.5m wide short grass route	G
AW - Pedestrian access management	26	Chingford Plain: paths	May	2022	1	Path cuts: Cut managed paths across Chingford plain to maintain a 2.5m wide short grass route	G
AW - Pedestrian access management	26	Chingford Plain: paths	Sep	2022	1	Path cuts: Cut managed paths across Chingford plain to maintain a 2.5m wide short grass route	G
AW - Visitor Centre management	26	Chingford area - Visitor Centre	Dec	2023	0	Visitor access: Habitat management works to create an obvious visual linkage between the Visitor Centre/QEHL and Butler's Retreat café	A
AW - Visitor Centre management	26	Chingford area - Visitor Centre	Jun	2022	1	Grounds Management: Cut grass to maintain a sward height of no more than 15cm, hedges cut to maintain height and shape, weed control of hard surfaces.	M
AW - Visitor Centre grounds management	26	Chingford area	Dec	2023	0	Visitor access: Habitat management works to improve the visibility of the Visitor Centre from Bury Road car park to better connect the two	A
CGC - Tree management works	26	Chingford area - Golf Course	Dec	2026	3	Tree management: tree management / replacement with more suitable tree species, scrub management and/or removal, pond and ditch management	A
LAW - Tree management works	25	Chingford area - Pole Hill	Sep	2023	0	Woodland Management: Implement works to restore historical view from top of Pole Hill as appropriate	A
NHW - Maintenance work	25	Chingford area - Yardley Hill	Sep	2024	1	Calcareous grassland: Implement a cyclical cutting regime and/or reinstate grazing in the cleared areas to encourage the return of species rich calcareous grassland	HOP
NWH - Invasive plant control	24, 25, 26, 27, 29	Chingford area	Dec	2023	1	Invasive non-native species management: Control of <i>Crassula helmsii</i> and other INNS, with a risk-based hierarchical approach to control	Vol
NWH - Invasive plant control	24, 25, 26, 27, 29	Chingford area	Dec	2022	0	Invasive non-native species management: Risk-based hierarchical approach plan to control <i>Crassula helmsii</i> prepared	HOP
OC - External Advisory	24, 25, 26, 27, 29	Chingford area	Dec	2023	0	Planning: Identification of measures, with partners through the SAC Mitigation Strategy, to reduce air pollution from road traffic impacting the SAC	HOC

Chingford

Operational Activity	CMPT	Location	Start Month	Year	Cycle	Description	Team
OC - Internal Advisory	25	Chingford area - Yardley Hill	Dec	2022	0	Calcareous grassland: Upgrade COL CityMaps to include a data layer on the geology of Britain from British Geological Survey	HOC
OC - Internal Advisory	26	Chingford area - QEHL	Dec	2024	0	Planning: Commission a Conservation Management Plan for QEHL	CS
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Dec	2025	0	Planning: Develop a further range of waymarked routes across the Chingford area from Bury Road car park (e.g. to Pole Hill, Yates Meadow, High Beach) to meet the diverse needs of Forest visitors and to link with the wider Forest. (<i>Chingford Access statement project</i>)	HVS
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Dec	2024		Planning: Develop an Investment Resourcing Plan for the Chingford area in conjunction with the emerging SAC Mitigation Strategy	HOP
OC - Internal Advisory	26	Chingford area - Bury Road hub	Dec	2023	0	Planning: Prepare an outline Business Plan for developing a new hub at the Bury Road car park, as a gateway to the Chingford area	HVS
OC - Internal Advisory	26	Chingford area - QEHL	Dec	2023	0	Planning: Review both the recommendations in the CS and progress on the planned costed maintenance works for the QEHL created in 2016. Determine which works have been completed from the CS and spreadsheet, revise the schedule for outstanding works and identify funding to complete these tasks	HOP/CS
OC - Internal Advisory	26	Chingford area - Bury Road hub	Dec	2023	0	Planning: Review Golf Course maintenance budget to ensure that existing course standard is maintained as player numbers increase over time (<i>Golf Development Project</i>)	GC
OC - Internal Advisory	NA	Chingford area	Dec	2023	0	Planning: Review the brown tourist sign provision	HVS
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Dec	2023	0	Planning: Within the context of the forthcoming Sustainable Visitor Strategy (due 2021), prepare an Access Statement for the Chingford area	HVS/HOP
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Mar	2023	0	Planning: Agree a programme of conservation measures for extension of the wood-pasture habitat, with the long-term vision of creating a working wood-pasture landscape across the Chingford area	HOC
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Mar	2023	0	Planning: Agree a programme of conservation measures for the protection of ancient trees, including through pollarding, crown reduction, fencing and soil condition amelioration	HOC
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Mar	2026	0	Planning: Explore grant-funding opportunities for access and habitat management works	HOP
OC - Internal Advisory	26	Chingford area - Golf Course	Mar	2025	0	Planning: Preparation of a conservation tree and vegetation management plan for the Chingford Golf Course	HOP/GC
OC - Internal Advisory	25	Chingford area - Pole Hill	Mar	2022	0	Planning: Review the feasibility of restoring the historic view from the top of Pole Hill to Greenwich, to help meet aspirations to provide a unique and memorable visitor experience.	HOP
OC - Internal Advisory	27	Chingford area - Connaught Water	Sep	2025	0	Planning: Ensure that Connaught Dam repair works are completed by 2026	HOP/DBE
OC - Internal Advisory	27	Chingford area - Connaught Water	Sep	2023	0	Planning: Liaise with COL DBE to identify the funding of a programme of repair work for Connaught Water dam, as detailed in the most recent Reservoir Inspection report (Atkins, 2016).	HOP
OC - Internal Advisory	25	Chingford area - Yardley Hill	Sep	2023	0	Planning: Plan the restoration of the calcareous grassland outcrop on Yardley Hill	HOC

Operational Activity	CMPT	Location	Start Month	Year	Cycle	Description	Team
OC - Internal Advisory	24, 25, 26, 27, 29	Chingford area	Sep	2023	0	Planning: Preparation of an aquatic habitat management plan for the streams and their sources, ponds and ditches in the area, using the suggested management actions in Appendix 6 of this ISP, with regard to Great Crested Newt populations	HOP
OC - Internal Advisory	26	Chingford area - Visitor Centre	Sep	2022	0	Planning: Review options for enhancing the visibility and welcoming appeal of the Visitor Centre entrance area; e.g. the adjacent car park repurposed as an area for picnic tables, with screening plant tubs	HVS
OC - Internal Advisory	29	Chingford area - Warren Pond	Sep	2021	1	Planning: Schedule regular inspections of the Warren Pond bund and outflow pipe for wear and tear	K
OC - Internal Survey	25	Chingford area - Yardley Hill	Sep	2023	0	Calcareous grassland: Use the mapped geological information to target scrub clearance on Yardley Hill to areas of chalky boulder clay	HOP
SL - Wayleave management	25, 26, 29	Chingford area - Thames Water pipeline	Dec	2023	0	Wayleave management: Prepare a works programme to remove vegetation from locations of concern and return it to grassland	HOP
SL - Wayleave management	24, 25, 26, 27, 29	Chingford area	Dec	2025	0	Wayleave management: Following completion of the Access Audit (COL, in prep), complete wayleave agreements with outstanding third parties to safeguard the Forest's boundaries	HOC
SL - Wayleave management	25, 26, 29	Chingford area - Thames Water pipeline	Dec	2023	0	Wayleave management: Using the aerial photographs in Appendix 4, establish the actual extent to which tree/scrub vegetation has grown over the Thames Water pipeline via survey work	HOP
SL - Wayleave management	25, 26, 29	Chingford area - Thames Water pipeline	Sep	2024	1	Wayleave management: Once the vegetation removal is complete, include the new areas of grassland in the annual grassland cutting regime for the Chingford area	HOP
WMM - Pest and disease management	24, 25, 26, 27, 29	Chingford area	Jul	2022	1	OPM: Oak Processionary Moth management, nest removal and awareness raising with visitors through signage and other communication methods	
WMM - Wood pasture grazing work	24, 25, 26, 27, 29	Chingford area	Aug	2024	0	Wood-pasture: Provide additional water troughs across the Chingford area to allow the cattle to avoid busy areas and expand their grazing into new areas of the Forest	GRA
WMM - Wood pasture restoration	24, 25, 26, 27, 29	Chingford area	Dec	2021	1	Wood-pasture: Expand cattle grazing using Epping Forest's herd of Longhorn cattle	GRA
WMM - Wood pasture restoration	24, 25, 26, 27, 29	Chingford area	Dec	2024	0	Wood-pasture: Undertake habitat management works to open up former wood-pasture	A

APPENDIX 2: Inspecting Engineer's Recommendations for Connaught Water Dam (Atkins, 2016)

Tables of recommendations are taken from Atkins (2016), an Inspecting Engineer's Report under Section 10 of the Reservoirs Act 1975 as amended 2010. The inspection took place on 24 March 2016.

No 'Recommendations as to Measures to be taken in the Interests of Safety under Section 10(3)(c) of the Act' were made with respect to Connaught Water dam (*these recommendations would be enforceable by the Enforcement Authority*).

Note on abbreviations in tables below:

- OS/EF Operations – Open Spaces / Epping Forest (Operations team)
- DBE – Department of the Built Environment

Table A2.1: Recommendations as to Measures to be taken under Section 10(3)(b) of the Act (Maintenance)

These recommendations are enforceable by the Enforcement Authority but do not require Supervision by a Qualified Civil Engineer within the Meaning of the Act. To be completed within 18 months of the date of report (May 2018).

	COL division(s) responsible	Current status of works
(i) the approach to the auxiliary weir be kept clear of coarse vegetation and saplings	OS/EF Operations	Ongoing as part of routine maintenance
(ii) repairs to the spillway outlet structure and the associated 'sand' bags be carried out	COL DBE	Completed by contractors (Mitie) in 2017
(iii) the undermined area of the end slab be filled and a new slab be poured with 'downstand' at the end	COL DBE	Completed by contractors (Mitie) in 2017

Table A2.2: Other Recommendations, as to Measures to be taken in Respect of Maintenance

These recommendations are not enforceable by the Enforcement Authority and do not require Supervision by a Qualified Civil Engineer within the Meaning of the Act.

	COL division(s) responsible	Current status of works
(i) it would be beneficial to repair the whole system in one go and certainly dig out the back of the boarding, making sure there was no exit point and placing geotextile right to the bottom of the trench	COL DBE	Completed by contractors (Mitie) in 2017
(ii) the revetment on the upstream slope be replaced as and when necessary	COL DBE	Outstanding, completion due before next inspection in 2026
(iii) any coarse vegetation/saplings and other woody vegetation on the upstream face be removed and any mature trees be managed so that they do not become too big or out of balance	COL EF Operations	Ongoing as part of routine maintenance One large tree on downstream slope spillway requires removal
(iv) areas of subsidence on the crest be filled	COL EF Operations	Ongoing as part of routine maintenance
(v) existing holes on the crest be filled in and any potholes which form be filled in	COL EF Operations	Ongoing as part of routine maintenance
(vi) the brambles and coarse vegetation to the right of the spillway be cut back	COL EF Operations	Ongoing as part of routine maintenance

	COL division(s) responsible	Current status of works
(vii) any woody vegetation, coarse vegetation and saplings be removed from the downstream face where possible if it re-establishes itself	COL EF Operations	Ongoing as part of routine maintenance
(viii) any mature trees be managed by pollarding etc so that they do not become too big or out of balance – there is one on the crest	COL EF Operations	Ongoing as part of routine maintenance
(ix) a good grass cover be encouraged and the grass cut regularly	COL EF Operations	Ongoing as part of routine maintenance
(x) leakage through the overflow weir be stemmed	COL DBE	<i>Outstanding, completion due before next inspection in 2026</i>
(xi) any debris in the overflow and overflow pipe be taken out and the pipes kept clear	COL EF Operations	Ongoing as part of routine maintenance
(xii) any scour damage to the path should be repaired and a low bund erected to ensure the flow goes to the forest and not along the toe of the dam	COL DBE	<i>Outstanding, completion due before next inspection in 2026</i>

Table A2.3: Measures Recommended in the Interests of Improving Monitoring and Supervision under Section 11 of the Act

	COL division(s) responsible	Current status of works
(i) the area of ponded water on the toe be watched for further flow or turbid flow	COL EF Operations	Ongoing as part of routine maintenance
(ii) the areas of leakage be watched for signs of increased leakage	COL EF Operations	Ongoing as part of routine maintenance
(iii) water levels are recorded at least monthly	COL EF Operations	Ongoing as part of routine maintenance
(iv) in periods of heavy rain, particularly in the autumn, staff visit the site on a daily basis to ensure the overflow screen is clear	COL EF Operations	Ongoing as part of routine maintenance
(v) the owner considers using the new Prescribed Form of Record	COL EF Operations	New Prescribed Form (Blue Book) now in use

The Supervising Engineer, in accordance with Section 10(4) of the Act, checks the following items twice a year:

- The Prescribed Form of Record is complete;
- The flows at the toe are watched; and,
- The spillway and approach are kept free of debris.

APPENDIX 3: List of buildings and structures in the Chingford area

Name of building / structure	Notes	Occupancy	Heritage Listing
Queen Elizabeth Hunting Lodge	Queen Elizabeth Hunting Lodge was built for Henry VIII in 1543 and is a unique survivor from the Royal Forest period of Epping Forest. Formerly known as the Great Standing; the two upper floors of the three storey building were open at the sides to provide panoramic views of the hunt across Chingford Plain. A fine example of Tudor timber-framed architecture when English carpentry was at its peak.	COL Museum	Grade II* - Draft Conservation Statement available (Martin Ashley Architects, 2018 <i>in draft</i>). No Conservation Management Plan available
Butler's Retreat	A mid-19 th C timber-framed barn of two storeys, on a brick base, with a lean-to offshoot at the eastern end. Comprises three main bays, the frames of which are expressed externally with weather-boarded infill panels between. The form is consistent with that of other surviving Essex barns, e.g. at Stapleford Tawney. Further garages / outbuildings	Café (third party lease)	Grade II – 2008 Conservation Statement available (Gibberd, 2008)
Royal Forest Coach House	20 th C stable buildings converted into the Epping Forest Visitor Centre at Chingford	COL Visitor Centre & Museum	Unlisted - 2008 Conservation Statement available (Gibberd, 2008)
Keeper's Lodge at 10 Rangers Road	Additional garage	COL Staff	Unlisted
Caddie House	Half of downstairs floor space	COL Golf Pro shop	Unlisted
Caddie House	Half of downstairs floor space	Holly Trail café (third party lease)	Unlisted
Caddie House	First floor flat with separate entrance at rear and garden attached	COL staff	Unlisted
Jubilee Retreat	Workshop and yard Base for golf course greenkeepers (maintenance). Includes main shed, water tank for irrigation system and associated control building (a shed), containers and a fuel tank.	COL staff	Unlisted
Jubilee Retreat	Orion Harriers building Includes a space for a COL staff welfare facility.	Orion Harriers running club (third party lease)	Unlisted
Forest Lodge – 1 Jubilee Retreat	First floor flat, plus a garage in a block	Third party lease?	Unlisted
Forest Lodge – 2 Jubilee Retreat	Ground floor flat, plus a garage in a block	Third party lease?	Unlisted
Forest Lodge – 3 Jubilee Retreat	Semi-detached house, plus a garage in a block	COL Staff	Unlisted
Pole Hill Obelisk	Ordnance Survey obelisk with square base of 6 stone slabs joined with cramps. Roughhewn granite plinth positioned centrally on base, surmounted by monolithic granite obelisk with battered sides and flat top. Two inscriptions, one re Greenwich meridian/true north, and other re T E Lawrence.	n/a	Grade II - 2015 Quinquennial Report available (Barker Associates LLP, 2015a)
Pole Hill Trig Point	Concrete pillar in form of square cone with bronze tripod base on top (roundel missing) and benchmark on side. Pillar stands on concrete covered brick base.	n/a	Unlisted - 2015 Quinquennial Report available (Barker Associates LLP, 2015a)

Name of building / structure	Notes	Occupancy	Heritage Listing
Durning-Lawrence Drinking Fountain	Adjacent to Butler's Retreat. Pink polished granite drinking fountain, surmounted by an obelisk, standing on two octagonal grey unpolished granite base steps.	n/a	Unlisted - 2015 Quinquennial Report available (Barker Associates LLP, 2015b)
Horse Trough, Bury Road	Granite horse trough with drinking fountain at one end. Workings of drinking fountain have been removed.	n/a	Unlisted – 2015 Quinquennial Report available (Barker Associates LLP, 2015c)
Remains of WWI anti-airship gun emplacement	Only the concrete base is still in situ. The site was reused during WWII as an anti-aircraft gun emplacement.	n/a	Unlisted

APPENDIX 4: Thames Water pipeline – locations with potential problem vegetation

Photo A4.1: Southern tip of Pole Hill



Photo A4.2: South-eastern edge of Pole Hill, south of Chingford Golf Course



Photo A4.3: Southwestern corner of Chingford Golf Course



Photo A4.4: Northeast of QEHL



Photo A4.5: Either side of where pipeline crosses Rangers Road



APPENDIX 5: Yardley Hill and Pole Hill - historical information showing scrub encroachment since 1888-1913, and locations of chalky glacial till outcrops on Yardley Hill

Image A5.1: Ordnance Survey mapping of Yardley Hill and Pole Hill, 1888-1913



Image A5.2: Aerial photograph of Yardley Hill and Pole Hill from 1945

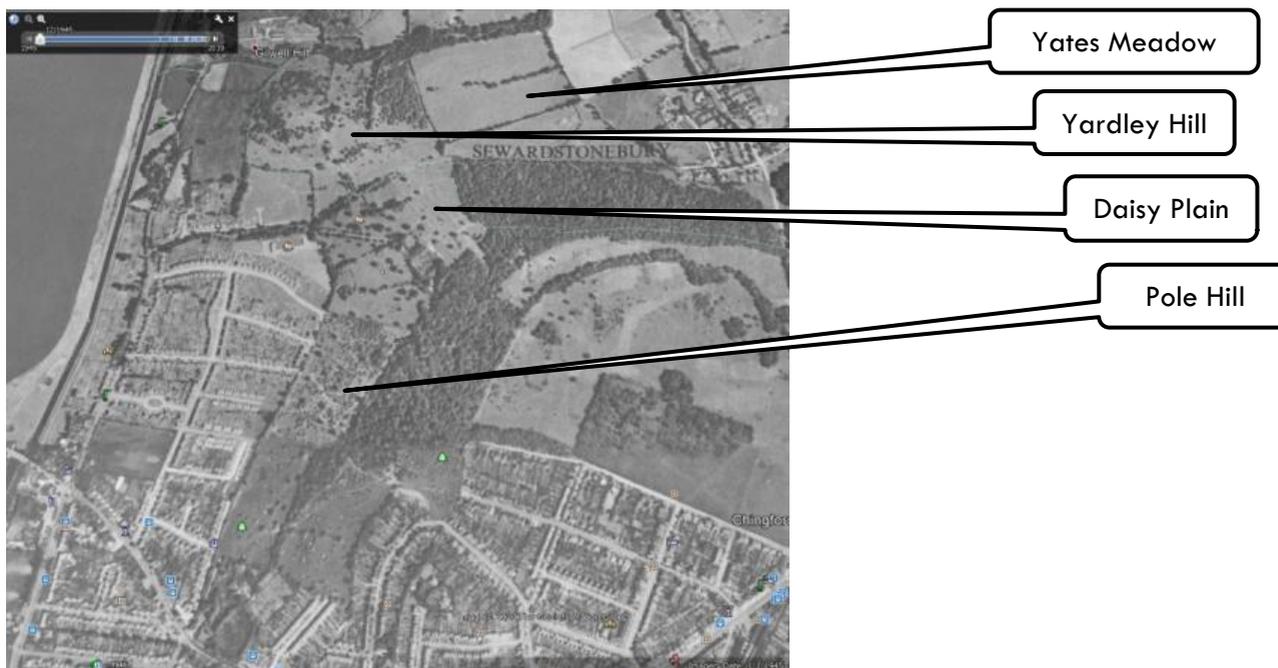


Image A5.3: Current (2020) aerial photograph of Yardley Hill and Pole Hill

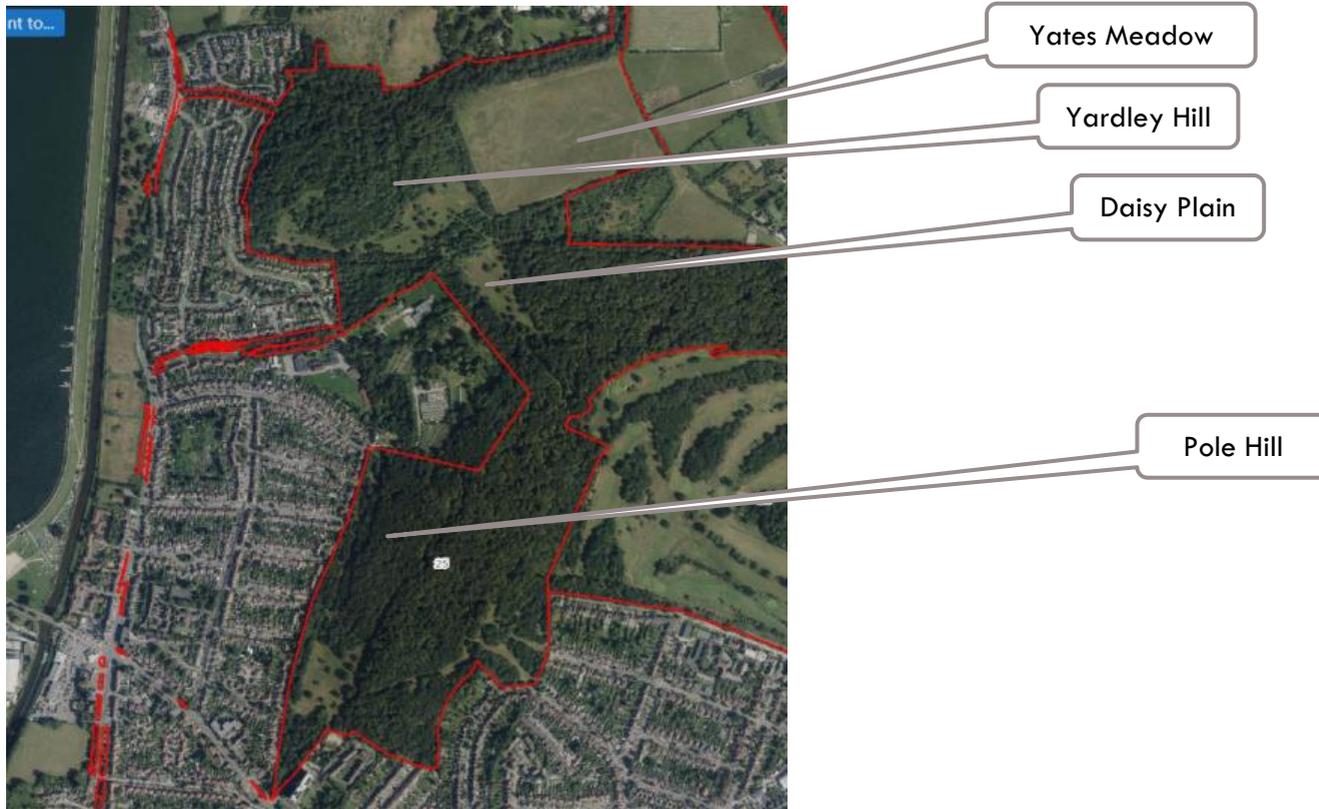
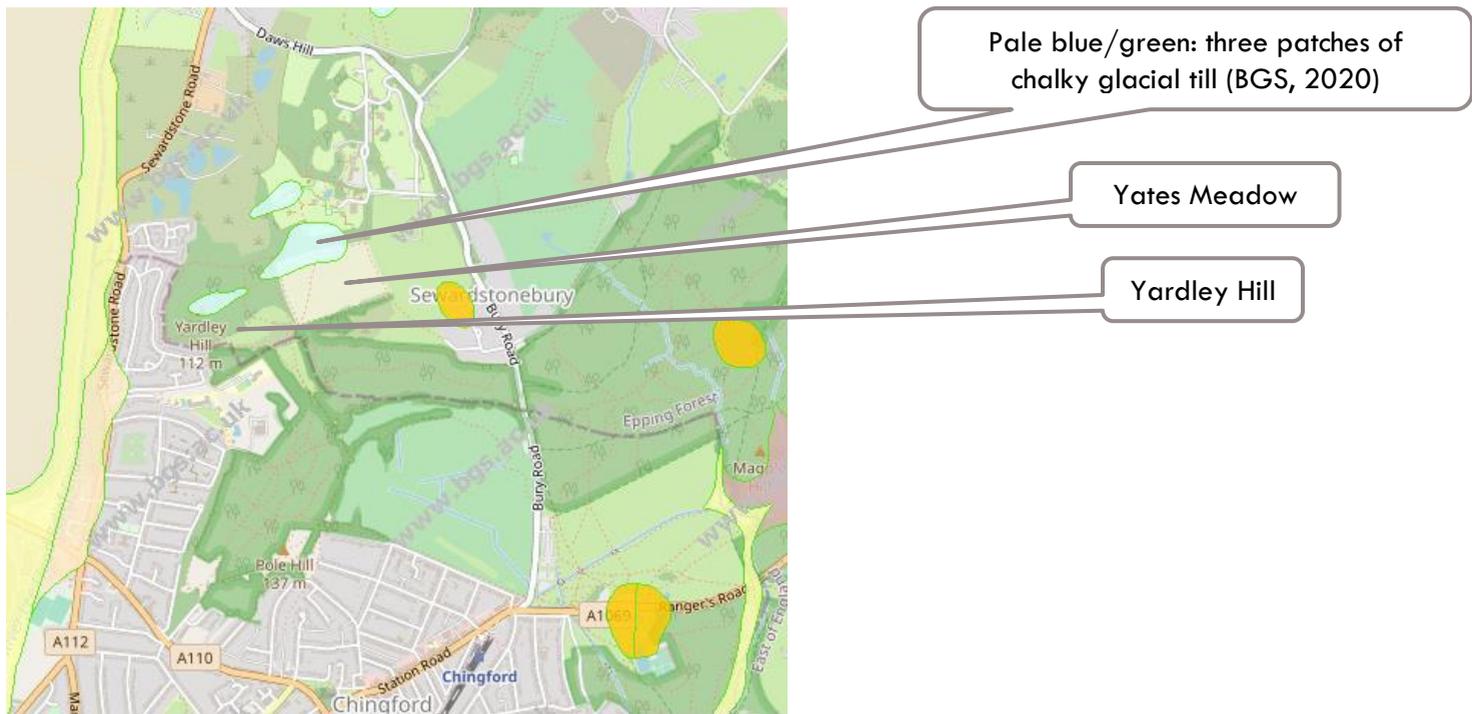


Image A5.4: Extract from Geology of Britain map, showing chalky glacial till patches in pale blue/green



APPENDIX 6: Amphibian survey results and management recommendations for ponds in the Chingford area

Catherine Bickmore Associates was commissioned on behalf of City Corporation to undertake an amphibian survey of the ponds and lakes of Epping Forest (Catherine Bickmore Associates, 2014). The first objective of the study was to categorise the ponds in terms of importance for amphibians with particular reference to great crested newt. The second was to categorise the ponds according to management priority, with recommendations for management actions for amphibians.

Table A6.1: Summary of results of pond survey for amphibians and management recommendations (Catherine Bickmore Associates, 2014)

Waterbody name	HIS (Habitat Suitability Index)	Invasive non-native species	Fish present (in 2013) (Y/N)	Other factors affecting suitability	Designation	Amphibians recorded	Importance for amphibians	Priority for management	Management recommendations (Catherine Bickmore Associates, 2014)
Cuckoo Pits East Pond	0.9	No	N	Lack of open water (Reedmace)	SSSI & SAC	Great Crested Newt, Smooth Newt, Palmate Newt, Common Frog	High	High	Threatened by drying. Deepen, reduce Reedmace, reduce shade, create refugia.
Cuckoo Pits West Pond	0.87	No	N	n/a	SSSI & SAC	Great Crested Newt, Common Toad, Smooth Newt, Palmate Newt	High	High	Threatened by drying. Deepen, reduce Reedmace, reduce shade, create refugia.
Chingford Golf Course middle pond	0.73	No	N	Lack of open water (Common Reed)	None	Great Crested Newt, Common Toad, Smooth Newt, Common Frog	High	High	Lack of open water – threatened by drying/reed growth. Reduce emergent, deepen, establish rough grass and refugia around pond
Chingford Golf Course lower/new pond	0.45	<i>Crassula helmsii</i>	Y	Lack of open water	None	Great Crested Newt, Common Toad, Smooth Newt, Palmate Newt	High	High	Remove fish if possible (or create new pond for GCN), establish rough grass around pond, possibly create connective rough grass terrestrial habitat & refugia to upper pond, reduce invasive aquatic plants.
Warren Pond	0.5	<i>Crassula helmsii</i>	Y	n/a	SSSI & SAC	Common Toad, Common Frog	Medium	Low	Address <i>Crassula helmsii</i> , remove reedmace, reduce shade and enhance terrestrial habitat.
Butler's Retreat Pond	0.49	<i>Crassula helmsii</i>	Y	n/a	SSSI & SAC	Common Toad, Smooth Newt, Common Frog	Medium	Low	Address <i>Crassula helmsii</i> , encourage macrophyte growth.
Connaught Water	0.31	No	Y	Lack of egg laying vegetation	SSSI & SAC	Common Toad, Smooth Newt, Common Frog	Medium	Low	Continue to encourage macrophyte growth.

Additional management suggestions for Connaught Water (COL, 2018a):

- Fencing around Lily beds could be removed;
- Fencing around bank side vegetation to be removed, in place 4+ years;
- Coir rolls along bank to be rolled back into place, placed on top of 'blocks' to allow fish to shelter below them;
- Failed floating island to be re-planted, perhaps with Water Crowfoot *Ranunculus aquatilis*, and protected from wildfowl by 'roofing' wire;
- Failed Lily plantation on the NW corner to be moved along the bank as it is in the way of Anglers. Lilies to be replanted in hessian sacks. Keith happy to advise. Use existing fence material again; and,

- Dead wood to be moved from near the bank along the East side to allow easier and safer survey works, at the same time a sweep to pick up plastic bags would be beneficial.

Additional management suggestions for Warren Pond (COL, 2015a and 2015b):

- Some swims need work to improve for anglers;
- Weed banks reduced in size on the west side;
- There is dead and live wood to be removed from the pond; and,
- Stocking with a few small Tench to ensure succession.

COL (2006) suggested desilting Butler's Retreat pond and restocking it with Tench and Rudd as a children's angling pond.

APPENDIX 7: Old photographs

Photograph 1: Fairmead Lodge (now demolished) and Fairmead Oak (still in situ and alive)



Fairmead Lodge at Fairmead Bottom, High Beech, Epping Forest. This lodge was demolished in 1898. This picture c1890.

Photograph 2: Greenwich Meridian obelisk with pole, on Pole Hill (formerly known as Hawke Hill)



Photograph 3: World War I anti-aircraft gun emplacement on Pole Hill



This photograph shows the anti-aircraft gun on Pole Hill, Chingford. The gun was mounted on a timber tower and accommodation for the crew was provided in temporary huts. Shells were brought up to the gun from the end of Mornington Road. (*Vestry House Museum, London Borough of Waltham Forest*)

APPENDIX 8: Local Plans – detailed information

- Habitats Regulations 2017 and Epping Forest Special Area of Conservation (SAC): all competent authorities (as defined by Regulation 7 of The Habs Regs) must undertake a formal assessment of the implications of any new plans or projects that are likely to have a significant effect on the designated interest features of protected European Sites (such as Epping Forest SAC) before deciding whether to undertake, permit or authorise such plans or projects (Regulation 63 of The Habs Regs). The first stage of the assessment involves formal *screening* for any Likely Significant Effects (either alone or in combination with other plans or projects). Where these effects cannot be excluded, assessing them in more detail through an *appropriate assessment* (AA) is required to ascertain that an adverse effect on the *integrity* of the site can be ruled out. Where such an adverse effect on the site cannot be ruled out, and no *alternative solutions* can be identified, then the project can only then proceed if there are *imperative reasons of over-riding public interest* and if the necessary *compensatory measures* can be secured.
- Strategic Housing Market Assessment (SHMA): Epping Forest (EFDC), Harlow, Uttlesford and East Hertfordshire District Councils have cooperated in the production of the West Essex and East Hertfordshire SHMA (Opinion Research Services, 2017), to assess the overall housing need for their housing markets. For EFDC these housing needs must be met over the 22-year lifetime of the new EFDC Local Plan (2011 – 2033). The distribution of the housing need, identified by the SHMA, was agreed in a Memorandum of Understanding (March 2017) between the four district councils, Essex and Hertfordshire County Councils and Highways England. For Epping Forest District Council, the housing need was set at 11,400 net additional homes to be provided between 2011-2033 (EFDC Local Plan Report-on-Site-Selection (Local Plan Document EB802B) Dec 2017). This compares to a target of 2,400 dwellings for the previously adopted Local Plan (EDFC, 2008), a greater than four-fold increase in the number of new dwellings.
- Habitats Regulations Assessment: Epping Forest District Council (EFDC) commissioned a strategic Habitats Regulations Assessment of the Local Plan Submission Version (EFDC, 2017), published in January 2019 (the HRA) (AECOM, 2019). This HRA found that the Plan would be likely to have a significant adverse effect, without mitigation, upon the Epping Forest SAC in respect of both atmospheric pollution and disturbance from recreation/urbanisation. An Appropriate Assessment (AA) of its implications for the integrity of the SAC was therefore undertaken. For both pathways of impact, the AA concluded that with mitigation, the Plan would not have an adverse effect on the integrity of the SAC either alone or in combination with other plans or projects (AECOM, 2019). However, this HRA is undergoing significant revisions for reasons set out below.
- EFDC Local Plan Submission Version Examination-in-Public: At the Planning Inspector’s hearing to examine the Local Plan Submission Version, both Natural England and the Conservators of Epping Forest (The Conservators) strongly challenged the robustness of the HRA in terms of its methodology and conclusions. Given the uniqueness of the Forest and its high-risk status, the Planning Inspector stated in her closing remarks that *‘she could not conclude beyond reasonable scientific doubt that the Local Plan will not adversely affect the integrity of the SAC until steps have been taken towards resolving it’* (Phillips, L, 2019).
- Further work: The Planning Inspector noted at the conclusion of the public hearing that *‘achieving sufficient confidence in any necessary mitigation measures is clearly challenging’*. The Inspector stated *‘that physical measures (road works) to which specific benefits could be attributed would themselves harm the SAC; and while schemes for road charging and completely car-free development might warrant future consideration, they could not realistically be implemented to support this Plan’*. Therefore, the Inspector stated that *‘the Council must either be clearer about the benefits of the mitigation proposed in the HRA; provide robust habitat/location specific evidence to demonstrate that*

any effects of development would not be adverse; or avoid the effects by altering (or potentially reducing) the pattern of growth proposed in the Plan' (Phillips, L, 2019).

- Updates to the Local Plan process: EFDC has made public a letter sent to the Planning Inspector on 21 January 2020 (EFDC, 2020a), updating the Inspector regarding progress made on the additional work required to ensure compliance with the Habitats Regulations with respect to the integrity of the SAC. Currently, further research is being undertaken on transport and air quality modelling, as well as consolidating the EFDC Infrastructure Delivery Plan. The updated timetable has been acknowledged by the Planning Inspector (Phillips, L, 2020). EDFC also issued a position statement on Epping Forest SAC on 30 April 2020 (EFDC, 2020b), reiterating the need '*to ensure that mitigation measures are in place which can be relied upon to avoid effects to the SAC'*.
- Recreational Zone of Influence: With respect to disturbance from recreation/urbanisation, Natural England, the statutory body advising competent authorities, like EFDC, on Special Areas of Conservation (SACs), has issued interim advice relating to the emerging strategic approach for the Epping Forest SAC Mitigation Strategy (Natural England, 2019b). This advice defines the recreational Zone of Influence (Zol) around the boundary of Epping Forest SAC as 6.2km, being the distance up to which more than $\frac{3}{4}$ of visitors will travel to visit Epping Forest SAC - see also the Epping Forest Visitor Survey 2017 (Liley et al (Footprint Ecology), 2018).
- Open space provision: The northern half of the Epping Forest SAC is wholly within Epping Forest District and therefore will come under pressure to accommodate increased visitor numbers associated with new Local Plan developments within the Zol. The Planning Inspector requires 'Main Modifications' to the EFDC Local Plan Submission Version, which will need to address the issue of disturbance from recreation/urbanisation (as well as air quality, see above). One option being considered by the key stakeholders is the provision of Suitable Alternative Natural Green Space (SANGS) within Epping Forest District, so that adverse impacts can be avoided. The SANGs proposed will be in addition to any on-site mitigation measures agreed (see SAMMs above), and the extent of the on-site measures may be modified in the light of any effects of any future SANGs.
- Epping Forest SAC Mitigation Strategy: there is an interim Strategy which includes what are termed as Strategic (visitor) Access Management and Monitoring Strategy (SAMMS). This interim Strategy, with input from Epping Forest officers, was prepared by and approved by Epping Forest District Council in consultation with the wider SAC Oversight Group in October 2018. However, a final SAC Mitigation Strategy incorporating other mitigation measures, alternative greenspace and air pollution prevention measures, for the SAC is still required to be completed. The proposed measures and costs for SAMMS have been examined in more detail by the City of London Conservators of Epping Forest with the help of specialist consultants, LUC, and were approved by The Conservators in November 2020 for negotiation with the other competent authorities (including London Boroughs) and Natural England for future agreement (LUC, 2020) . The funding for the final SAC Mitigation Strategy will need to take into account these more detailed proposals, a network of suitable alternative natural green spaces (SANGS) and air pollution mitigation measures.

APPENDIX 9: Figures

Figure 1 a: Locations of named features in the Chingford area (northwest)

Figure 1 b: Locations of named features in the Chingford area (southeast)

Figure 1 c: Locations of named features in the Chingford area (northeast)

Figure 1 d: Locations of named features in the Chingford area (Inset around QEHL)