ECOSA
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# WARLIES PARK, WALTHAM ABBEY, ESSEX

# PRELIMINARY ECOLOGICAL APPRAISAL



**Draft Document**

August 2019

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EcIA • HRA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

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## ECOSA Quality Assurance Record

The Preliminary Ecological Appraisal has been undertaken with reference to the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017). This report has been produced in accordance with the CIEEM Guidelines for Ecological Report Writing 2017 (CIEEM, 2017). The survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance (CIEEM, 2017).

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| **Description:** | Preliminary Ecological Appraisal |
| **Produced For:** | City of London Corporation as Conservators of Epping Forest |
| **Issue:** | Draft |
| **Report Reference:** | 4879-1.D0 |
| **Date of Issue:** | 30th August 2019 |
| **Date of Survey Works:** | 19th June 2019 |
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**WARLIES PARK, WALTHAM ABBEY,**

**ESSEX**

**PRELIMINARY ECOLOGICAL APPRAISAL**

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## EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by City of London Corporation as Conservators of Epping Forest to undertake a Preliminary Ecological Appraisal of Warlies Park, Waltham Abbey. The purpose of the appraisal is to assess the site's ecological baseline and identify constraints and opportunities associated with delivering large-scale concerts at the site in order to inform their decision process. The site is located in Greater London and comprises a parkland landscape with areas of woodland and hedgerows present. The main findings of the Preliminary Ecological Appraisal are:

- The site is designated as Warlies Park SINC and may also be designated as Cobbins Brook SINC. The full citation or boundary of the SINCs were not available at the time of preparing this report. The site has been assessed as having suitability to support tree roosting bats, foraging and commuting bats, badger, hazel dormouse, breeding birds, wintering birds, widespread species of reptile, great crested newt, European hare, European hedgehog and common toad. In the absence of suitable mitigation in respect of the aforementioned species groups/species, these could present an ecological constraint to the proposed event.

- Mitigation recommendations include minimising visitors accessing the wider SINC, the erection of Heras fencing (or similar) around the event boundary, maintaining a minimum buffer of 20 metres between the broadleaved woodland and hedgerows and event and the establishment of Root Protection Zones for mature trees.

- Further survey work in relation to reptiles and great crested newt will be required to fully assess the potential ecological impacts of any future proposals. Additionally, recommendations have been made for a sensitive lighting scheme to minimise potential disturbance impacts on foraging and commuting bats and hazel dormouse, should they be present. Further consideration will need to be given to bats and hazel dormouse once the noise levels of any future event are known in order to ensure the species groups will not be disturbed. At this stage, it is considered that subsequent to the findings of such work, there is scope to incorporate suitable mitigation measures in order to allow the event to accord with wildlife legislation.

- If the site boundary changes or the proposals for the site alter, a re-assessment of the scheme in relation to ecology may be required. Given the mobility of animals and the potential for colonisation of the site over time, updating survey work may be required, particularly if the event does not commence within 18 months of the date of the most recent relevant survey.

# 1.0 INTRODUCTION

## 1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by City of London Corporation as Conservators of Epping Forest to undertake a Preliminary Ecological Appraisal to identify the ecological constraints and opportunities associated with delivering large-scale concert at Warlies Park, Waltham Abbey, Essex EN9 3SL (hereafter referred to as the site).

## 1.2 The Site

The site is located in Waltham Abbey, Essex centred on National Grid Reference (NGR) TL 4096 0139 (**Map 1**). The Phase 1 habitat map (**Map 2**) depicts the boundary of the site.

The site measures approximately 3.7 hectares and comprises a parkland landscape with areas of woodland and hedgerows present. The site is bounded by Horseshoe Hill to the south, the road Warlies to the east with Warlies House and Warlies Park House further afield, grassland fields and woodland to the north and grassland and nurseries to the west.

The wider landscape is dominated by grassland and agricultural fields with associated hedgerows and extensive blocks of woodland.

## 1.3 Aims and Scope of Report

The information within this report is based on a field survey and desktop study carried out during June and August 2019, respectively. The objectives of the appraisal are:

- To provide preliminary baseline information on the current habitats, the suitability of the site to support notable and protected species, and evidence of notable and protected species both on site and in the immediate vicinity of the site, where relevant;
- To identify the proximity of any statutory sites designated for nature conservation importance;
- To identify the likely ecological constraints associated with the proposals;
- To identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy'[1];

[1] In accordance with CIEEM Ecological Impact Assessment guidance (CIEEM, 2018) a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

- To identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA); and

- To identify the opportunities offered by the proposals to deliver ecological enhancement

### 1.4 Site Proposals

City of London Corporation as Conservators of Epping Forest have been approached by event organisers to hold concert style events with audiences in excess of 50,000 on land under their ownership. At the time of preparing this report, there are no detailed plans or timings of the proposed events at the site. However, the location could be considered for hosting longer festivals potentially including camping at the site.

# 2.0 METHODS

## 2.1 Introduction

This section details the methods employed during the Preliminary Ecological Appraisal. Any significant limitations to the survey methods are also considered.

## 2.2 Zone of Influence

To define the total extent of the study area for this appraisal (Zone of Influence[2]), the proposed scheme was reviewed to establish the spatial scale at which ecological features could be affected. The appropriate survey radii for the various elements of the appraisal (i.e. desktop study and field survey) have been defined in the relevant sections below. These distances are determined based on the professional judgement of the ecologist leading the appraisal, taking into account the characteristics of the site subject to appraisal, its surroundings and the nature and scope of the proposals. Determination of the Zone of Influence is an iterative process and will be regularly reviewed and amended as the project evolves.

## 2.3 Scoping

Protected species considered within this appraisal are those species/species groups considered likely to be encountered given the geographical location and context of the site. These are discussed within the results section (Section 3.0) of the current report. Where such a species is unlikely to be present on site a justification for likely absence is provided. Species considered likely absent from the site are not then considered in the potential ecological constraints and mitigation measures section (Section 4.0) of this report.

## 2.4 Desk Study

A full biological record centre desktop study was not undertaken as part of this appraisal.

### *2.4.1 City of London Corporation as Conservators of Epping Forest*

City of London Corporation as Conservators of Epping Forest provided data on 24th June 2019 which included records of legally protected and notable species (flora and fauna) within the local area, including Species of Principal Importance for the Conservation of diversity in England notified under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and as listed in the England Biodiversity List (**Appendix 1**).

[2] The Zone of Influence, as defined by CIEEM, is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities.

### *2.4.2 Multi-Agency Geographic Information for the Countryside*

The Multi-Agency Geographic Information for the Countryside (MAGIC) database (DEFRA, 2019) was reviewed on 20th August 2019 to establish the location of statutory designated sites located within the vicinity of the site. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within one kilometre of the site. Where appropriate, the desk study search area has been extended to take account of any appropriate statutory designated sites which need consideration in terms of potential in-direct effects and which support particularly mobile species, particularly those specifically mentioned in local planning policy. The Impact Risk Zones (IRZ) were also obtained from MAGIC, which are used to help guide and assess planning applications for likely effects on SSSIs.

Sites within two kilometres of the site boundary where European Protected Species Mitigation (EPSM) licences have been granted were reviewed. This information allows a greater understanding of the potential for European protected species to be present in the local area.

### *2.4.3 Other Sources of Information*

Online mapping resources, at an appropriate scale, were used to identify the presence of habitats such as woodland blocks, ponds, watercourses and hedgerows, in the vicinity of the site. These habitats may offer resources and connectivity between the site and suitable habitat in the local area, which may be exploited by local species populations.

The presence of ponds or other waterbodies within a 500 metre radius of the site in particular are noted in relation to great crested newt. The 500 metre radius is a standardised search radius to assist in the assessment of the suitability of a site and its surrounding habitat to support this species, based on current Natural England guidance (English Nature, 2001).

## 2.5 Field Survey

The field survey broadly followed standard Phase 1 habitat survey methodology (JNCC, 2010) and comprised/included a search for evidence of, and an assessment of the site's suitability to support, protected and notable species as recommended by CIEEM (CIEEM, 2017). The field survey covered all accessible areas of the site, including boundary features. Habitats described in Section 3.0, have been mapped (**Map 2**) and photographs provided, where relevant. For ease of reference, Target

Notes (TN) depict locations of particular ecological interest or features which are too small to map.

### *2.5.1 Phase 1 Habitat Survey*

An assessment was made of all areas of vegetation within the site based on the standardised Phase 1 habitat survey methodology (JNCC, 2010) . This involved identification of broad vegetation types, which were then classified against Phase 1 habitat types, where appropriate. A list of characteristic plant species for each vegetation type was compiled and any invasive species[3] encountered as an incidental result of the survey recorded.

### *2.5.2 Protected and Notable Species Appraisal*

A preliminary appraisal of the site's suitability to support legally protected and notable species was carried out. The following species/species groups were considered during the appraisal.

*Bats*

The survey conformed to current Bat Conservation Trust guidelines (Collins, 2016). An assessment was made of the suitability of trees on the site and immediately on the site boundary to support roosting bats based on the presence of Potential Roosting Features such as holes, cracks, splits, loose bark and ivy cladding. Given the large number of trees present within the site and along the site boundaries, it was not possible to fully inspect each tree for bat roosting suitability. Therefore, potential bat roosting features may be present which were not identified during the survey.

An assessment was made of the suitability of the site and the surrounding landscape to support foraging and/or commuting bat species. The assessment of the suitability of the site to support roosting, foraging and commuting bats is based on a four-point scale as detailed in **Appendix 2**.

*Otter*

The otter appraisal was based on an assessment of the suitability of the habitat present within the site to support otter by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), proximity of the site to freshwater and potential important feeding resources (such as fisheries), presence of habitat features which could provide opportunities for resting places and/or holts (such as tunnels, hollows at the base of trees and presence of dense, undisturbed habitat). During the survey attention was paid to the presence of evidence such as spraints, feeding remains, footprints and slides.

[3] Plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

*Badger*

The survey involved an assessment of the suitability of the site to support badger. Evidence of the species was recorded as an incidental result of the Phase 1 habitat survey and included locating badger setts, paths, and signs of territorial activity such as latrine sites.

*Hazel Dormouse*

The appraisal for the suitability of the site to support hazel dormouse was based on an assessment of habitat features that may indicate that the species is present. This includes the presence of key food sources such as hazel and bramble, or plants used as nesting material such as honeysuckle and clematis. Additionally, the species requires a continuum of food supply so that habitat structure, diversity and connectivity to adjacent areas of woodland/scrub are important features in determining the suitability of the site for hazel dormouse.

*Water Vole*

The water vole appraisal was based on an assessment of the suitability of the habitat present within the site to support water vole by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), bank structure and the bank side vegetation. Water voles generally require sloping banks in which to burrow and well-developed bank side vegetation to provide shelter and food. During the survey attention was paid to the presence of burrows, latrines, feeding remains, trails and footprints.

*Birds*

The appraisal of breeding birds on the site was based on the suitability of habitat present to support nesting bird communities, the presence of bird species that may potentially nest within the available habitat and evidence of nesting such as old or currently active nests.

The assessment of wintering birds was based on an assessment of the suitability of the habitat on site to support important wintering bird species and populations. Particular attention was paid to the suitability for the site to support wintering farmland bird species, waders and wildfowl.

*Reptiles*

The reptile appraisal was based on an assessment of the suitability of the habitat present within the site to support a population of reptiles. Reptiles particularly favour scrub and rough grassland interfaces and the presence of these is a good indication that reptiles may be present on site. In addition, reptiles may utilise features such as bare ground for basking, tussocky grassland for shelter and compost heaps and rubble piles for breeding and/or hibernating.

*Great Crested Newt*

The appraisal of the site to support great crested newt included establishing the presence of suitable aquatic habitats such as ponds, lakes or other waterbodies within or adjacent to the site and the presence of suitable terrestrial habitat. Waterbodies that are densely shaded, highly eutrophic or that contain fish are likely to be less suitable for this species. The suitability of on-site ponds and terrestrial habitat is considered in relation to the presence of ponds within the wider area, as identified within the desktop study (Paragraph 2.4.3), and their suitability to be used as a network.

*Invertebrates*

An assessment was made of the suitability of the site to support diverse communities of invertebrates. The assessment was based on the presence of habitat features which may support important invertebrate communities. These features include, for example, an abundance of dead wood, the presence of diverse plant communities, varied woodland structure, sunny woodland edges with a diverse flora, waterbodies and water courses and areas of free draining soil exposures. During the field survey there was no attempt made to identify species present as this is a more specialist area of ecological assessment reserved for targeted surveys.

*Other Relevant Species*

An assessment was made of site suitability for other notable species such as more rarely encountered protected species, Species of Principal Importance for the Conservation of diversity in England notified under Section 41 of the NERC Act 2006 and as listed in the England Biodiversity List, and Local Biodiversity Action Plan (LBAP) species[4], specific to the study region.

*Invasive Species*

During the field survey any incidental records of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded. However, it should be considered that the survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

## 2.6 Field Survey Details

The field survey was carried out by Richard Chilcott, Principal Ecologist of ECOSA and Lucy Bartlett, Ecologist of ECOSA, on 19th June 2019. The weather conditions were mild and overcast, light to heavy rain with 100% cloud cover, an ambient temperature of 18°C and a gentle breeze.

[4] LBAPs identify local priorities for biodiversity conservation by translating national targets for species into effective action at the local level and identifying targets for species important to the local area.

During the survey, the surveyor was equipped with 10x40 binoculars, a high powered torch and a digital camera.

## 2.7 Limitations

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The field survey has therefore not produced a complete list of plants and animals and in the absence of evidence of any particular species should not be taken as conclusive proof that the species is absent or that it will not occur in the future.

Online mapping resources provide an indication of habitat features present in the wider area, but do not provide a detailed assessment of habitat types.

The desk study data originates from City of London Corporation as Conservators of Epping Forest. A more exhaustive desktop study was not undertaken at this stage. The data search results cannot be taken as an exhaustive list of species present in the area.

A large proportion of the desk study data is historic and, therefore, the purposes of this report only the most recent and relevant records have been referenced within this report. At the time of preparing this report the full citation or boundary of the SINCs within Warlies Park were not available.

Given the large number of trees present within the site and along the site boundaries, it was not possible to fully inspect each tree for bat roosting suitability. Therefore, potential bat roosting features may be present which were not identified during the survey.

Not all potential bat roosting features are accessible to the surveyor, for example holes or cracks in trees, and therefore assessments are based upon the potential for these features to provide suitable roosting opportunities.

# 3.0 BASELINE ECOLOGICAL CONDITIONS

## 3.1 Introduction

This section details the results of the Preliminary Ecological Appraisal undertaken for the site. It assesses the baseline ecological conditions of the site at the time the desktop study was completed and based on the ecological features recorded during the field survey.

## 3.2 Statutory and Non-statutory Designated Sites

### *3.2.1 Statutory Designated Sites*

There are no statutory designated sites of nature conservation interest situated within a one kilometre radius of the site boundary. The nearest statutory designated site of nature conservation interest is Epping Forest SAC and SSSI located approximately 1.3 kilometres south-east of the site and designated for supporting notable habitats, invertebrate assemblages and amphibians and breeding birds.

### *3.2.2 Non-Statutory Designated Sites*

The site is designated as Warlies Park SINC for supporting notable habitats including wood-pasture and parkland, hedgerows, lowland mixed deciduous woodland, ancient/species-rich hedgerows and green lanes and species such as invertebrates, lichens and fungi.

Warlies Park is also partly designated as Cobbins Brook SINC for supporting notable habitats including rivers, lowland mixed deciduous woodland, lowland meadows, species-rich grassland, ancient/species-rich hedgerows, green lanes and corridors.

At the time of preparing this report the formal citations of Warlies Park and Cobbins Brook SINCs had not been provided to ECOSA by Epping Forest and therefore, the formal boundary of the SINCs are currently unknown.

## 3.3 Habitats

### *3.3.1 Desktop Study Results*

Consultation with MAGIC identified the site as being the Habitat of Principal Importance wood-pasture and parkland. MAGIC also identified the reliability of the interpretation to be “medium”.

No recent notable plant species have been recorded at the site based on the information provide by City of London Corporation as Conservators of Epping Forest.

### *3.3.2 Field Survey Results*

Habitats within the site are shown on the Phase 1 Habitat Map (**Map 2**), Target Notes and photographs have been provided as appropriate, Target Notes are cross referenced to **Map 2**. Habitats are described in general terms using standard Phase 1 habitat survey terminology. The main habitats recorded on site during the Phase 1 habitat survey were as follows:

*Broadleaved Semi-natural Woodland*

Three areas of broadleaved semi-natural woodland are present within the site.

The largest area of woodland located in the north-west of the site has a canopy comprising pedunculate oak *Quercus robur*, ivy *Hedera helix*, sycamore *Acer pseudoplatanus*, ash *Fraxinus excelsior*, lime *Tilia x europaea* and hornbeam *Carpinus betulus* (**Figure 1** and **Figure 2**). The understorey is sparse and comprises hawthorn *Crataegus monogyna*, bramble *Rubus fruticosus* aggregate, elder *Sambucus nigra*, blackthorn *Prunus spinosa* and field maple *Acer campestre*. The following species were recorded as part of the ground flora: stinging nettle *Urtica dioica*, dog's mercury *Mercurialis perennis*, wood avens *Geum urbanum*, Yorkshire fog *Holcus lanatus*, annual meadow grass *Poa annua*, false oat-grass *Arrhenatherum elatius*, Cock's-foot *Dactylis glomerata*, ground ivy *Glechoma hederacea* and remote sedge *Carex remota*.

**Figure 1:** Broadleaved semi-natural woodland viewed to the north

**Figure 2:** Broadleaved semi-natural woodland viewed to the north-east

An area of woodland is present towards the centre of the site (**Figure 3**). The canopy species present include pedunculate oak, ivy, horse chestnut *Aesculus hippocastanum* and willow *Salix* species. The woodland lacks any significant understorey with species present including hawthorn, bramble and dog-rose *Rosa canina*. Ground flora species present include stinging nettle, broad-leaved dock *Rumex obtusifolius*, annual meadow grass, false-oat grass, Cock's-foot and red campion *Silene dioica*.

Areas of woodland are also present in the south-eastern corner of the site (**Figure 4**) which leads onto a line of scattered trees. Mature pedunculate oak and semi-mature

elm *Ulmus* species and hawthorn form the canopy layer. Other species present within the understorey include hawthorn, dog-rose and elder, which is limited in extent. Stinging nettle, dog's mercury, wood avens, spear thistle *Cirsium vulgare*, cleavers *Galium aparine*, broad-leaved dock and ivy form the ground flora.

**Figure 3:** Broadleaved semi-natural woodland towards the centre of the site

**Figure 4:** Broadleaved semi-natural woodland viewed to the east

A number of areas of woodland also form part of the site boundaries. Of particular note is Cobbin Pond woodland to the north of the site, which have not been surveyed.

*Dense Scrub*

Areas of dense scrub are present throughout the site (**Figure 5** and **Figure 6**). Species present include bramble, dog rose, blackthorn and pedunculate oak saplings.

**Figure 5:** Scrub located in the north of the site

**Figure 6**: Scrub along eastern site boundary

*Parkland/Scattered Trees*

A number of scattered trees are present throughout the site including pedunculate oak, hawthorn and Scot's pine *Pinus Sylvestris* (**Figure 7** and **Figure 8**).

**Figure 7:** Scattered trees viewed to the north

**Figure 8:** Scattered trees viewed to the north

*Semi-improved Grassland*

The majority of the site comprises tussocky grassland dominated by Yorkshire fog in areas (**Figure 9** and **Figure 10**). Other grassland species present include annual meadow grass, false oat-grass, crested dog's-tail *Cynosurus cristatus*, smaller cat's-tail *Phleum bertolonii*, Timothy *Phleum pratense*, perennial rye-grass *Lolium perenne*, creeping bent *Agrostis stolonifera*, soft brome *Bromus hordeaceus*, cock's foot, wall barley *Hordeum murinum* and false brome *Brachypodium sylvaticum*. Herbaceous species are limited in extent and include stinging nettle, cleavers, broad-leaved dock, dandelion *Taraxacum officinale* aggregate, creeping buttercup *Ranunculus repens*, red clover *Trifolium pratense*, common vetch *Vicia sativa*, creeping cinquefoil *Potentilla reptans*, selfheal *Prunella vulgaris*, common mouse-ear *Cerastium fontanum*, common ragwort *Senecio jacobaea*, black medick *Medicago lupulina*, white clover *Trifolium repens*, oxeye daisy *Leucanthemum vulgare* and bramble.

**Figure 9:** Semi-improved grassland viewed to the north-east

**Figure 10:** Semi-improved grassland viewed to the south-west

An area of grassland which was recently mown at the time of survey was recorded in the south-eastern corner of the site (**Figure 11**). A comprehensive species list was not recorded during the survey, but largely comprise species present in the surrounding grassland habitat.

**Figure 11:** Semi-improved grassland in south-eastern corner of site

*Standing Water*

Two waterbodies are present within the site.

A single pond is present within the broadleaved woodland towards the centre of the site, measuring approximately 150 square metres (**Figure 12**). Aquatic and marginal vegetation present is dominated by greater reedmace *Typha latifolia* with soft rush *Juncus effusus* also recorded.

A single pond is present within the broadleaved woodland in the north-west of the site, measuring approximately 1,270 square metres (**Figure 13**). No aquatic vegetation was recorded within the waterbody.

**Figure 12:** Pond within the broadleaved woodland towards the centre of the site

**Figure 13:** Pond within the broadleaved woodland in the north-west of the site

*Intact Species-poor Hedgerow*

Five intact species-poor hedgerows are present within the site.

Hedgerow (H) 1 and H2 form part of the eastern site boundary and are mature, up to 15 metres in height and set beyond a fence line (**Figure 14** and **Figure 15**). The hedgerows are unmanaged and scrubby in appearance. Species present include elm

*Ulmus* species, pedunculate oak, hawthorn, bramble, dog-rose, horse chestnut, blackthorn, ash saplings, cherry *Prunus* species and sycamore.

**Figure 14:** H1 viewed to the north

**Figure 15:** H2 viewed to the south-west

H3 is mature, up to three metres in height, unmanaged and scrubby in appearance (**Figure 16**). The hedgerow is dominated by blackthorn. Other species present include pedunculate oak, hawthorn and dog-rose.

H4 is up to five metres in height, unmanaged and scrubby in appearance (**Figure 17**). Species present include pedunculate oak, hawthorn, bramble, dog-rose and blackthorn.

**Figure 16:** H3 viewed to the south-west

**Figure 17:** H4 viewed to the north-west

HR5 forms the southern part of the western site boundary. The hedgerow is mature, up to eight metres in height and is unmanaged (**Figure 18**). Species present include pedunculate oak, hawthorn, bramble, dog-rose and blackthorn.

**Figure 18:** H5 viewed to the south-west

*Defunct Species-poor Hedgerow*

H6 is located towards the centre of the site and is up to 12 metres in height and scrubby in appearance (**Figure 19**). Species present include pedunculate oak, hawthorn, bramble, dog-rose and willow *Salix* species.

**Figure 19:** H6 viewed the east

### *3.3.3 Other Habitats*

A fence line is present around the field to the south-east.

### *3.3.4 Summary*

The site is the habitat of principal importance wood-pasture and parkland, which is of ecological interest. The broadleaved woodland, mature scattered trees, hedgerows and tussocky grassland are of relatively greater ecological interest in the context of the site.

## 3.4 Notable and Legally Protected Species

### *3.4.1 Bats*

*Desktop Study Results*

No granted European Protected Species Mitigation (EPSM) licences in respect of bats were identified within a two kilometre radius of the site.

Consultation with City of London Corporation as Conservators of Epping Forest produced records of common pipistrelle *Pipistrellus pipistrellus* and soprano pipistrelle bat roosts from Fernhall Wood located approximately 390 metres north-east of the site. Records of foraging noctule *Nyctalus noctula* and brown long-eared bat *Plecotus auritus* from 2017 were also recorded within Warlies approximately 100 metres south-east of the site.

*Tree Assessment*

Given the large number of trees present within the site and along the site boundaries, it was not possible to fully inspect each tree for bat roosting suitability during the survey undertaken. The majority of the trees were of the size and age that they may have developed features suitable for roosting bats if not immediately visible from the ground level.

A dead oak tree (TN1) was recorded as supporting various potential bat roosting features in the form of split branches and cavities on the north-eastern aspect and was therefore assessed as having high suitability to support roosting bats (**Figure 20**, **Figure 21** and **Figure 22**).

**Figure 20:** TN1 dead oak tree

**Figure 21:** TN1 dead oak tree with cavity on flushed section

**Figure 22:** TN1 dead oak tree with cavity in branch

A pedunculate oak (TN2) was recorded as supporting a woodpecker hole on the northern aspect and was therefore assessed as having high suitability to support roosting bats (**Figure 23**).

A pedunculate oak (TN3) was recorded as supporting cavities on the eastern aspect and was therefore assessed as having high suitability to support roosting bats (**Figure 24**).

**Figure 23**: TN2 pedunculate oak with woodpecker hole

**Figure 24:** TN3 pedunculate oak with cavities

*Foraging and Commuting Habitat*

The broadleaved semi-natural woodland, hedgerows, mature scattered trees and tussocky grassland within the site offer good foraging and commuting habitat for bats. These features also allow connectivity into the wider landscape including extensive blocks of woodland, hedgerow networks and open green space. Given the extent of suitable habitats in the vicinity of the site, it is likely that the site is used by bats as part

of a larger foraging and commuting route. Overall, the site is assessed as having high suitability to support foraging and commuting bats.

### *3.4.2 Otter*

*Desktop Study Results*

No granted EPSM licences in relation to otter *Lutra lutra* were identified within two kilometres of the site boundary. However, this does not confirm the absence of the species in the local area.

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of otter within the local area, however, this does not confirm the absence of the species in the local area.

*Field Survey Results*

The site or immediately adjacent habitat does not support suitable habitat for resting otter or for holt creation. The habitat on site is unsuitable for otter and therefore the species is not considered further in this report.

### *3.4.3 Badger*

*Desktop Study Results*

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of badger *Meles meles* within the local area, however, this does not confirm the absence of the species in the local area.

*Field Survey Results*

No evidence of foraging or resident badger was recorded during the survey undertaken. The site provides suitability to support resident badger within the woodland and hedgerows which provides opportunities for sett construction. The site also provides suitable foraging habitat for the species in the form of areas of broadleaved semi-natural woodland, hedgerows and grassland. Suitable habitat for badger is present in the wider area in the form of grassland fields, woodland and agricultural fields with hedgerow boundaries.

### *3.4.4 Hazel Dormouse*

*Desktop Study Results*

No granted EPSM licences in respect of hazel dormouse *Muscardinus avellanarius* were identified within a two kilometre radius of the site.

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of hazel dormouse within the local area, however, this does not confirm the absence of the species in the local area.

*Field Survey Results*

The site itself is considered to support sub-optimal habitat for hazel dormouse. The broad-leaved woodland, hedgerows and scrub along the site boundaries are generally species-poor and of limited suitability for foraging, lacking the continuum of food resources which the species requires at different times of the year. However, these habitats are connected to suitable habitat within the vicinity of the site, and therefore the site has the connectivity into the wider area which the species requires for dispersal.

### *3.4.5 Water Vole*

*Desktop Study Results*

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of water vole *Arvicola amphibius* within the local area, however, this does not confirm the absence of the species in the local area.

*Field Survey Results*

The habitat within the site is unsuitable to support water vole without the presence of sloping banks adjacent to water in which to burrow and, therefore, the species is not considered further in this report.

### *3.4.6 Birds*

*Desktop Study Results*

Consultation with City of London Corporation as Conservators of Epping Forest produced records of six notable bird species within the local area. A single record of the amber listed[5] kestrel *Falco tinnunculus* within the centre of the site from 2012 was returned as part of the desktop study undertaken. Three records of the red listed[6] red kite *Milvus milvus* were also returned within the site along the north-eastern site boundary in 2017.

[5] The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Amber list criteria include species which are: in unfavourable conservation status in Europe; subject to historical population decline during 1800–1995, but recovering; subject to moderate (25-49%) decline in UK breeding population or contraction of UK breeding range over last 25 years, or the longer-term period; subject to moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period; rare breeders (1–300 breeding pairs in UK); rare non-breeders (less than 900 individuals), or; internationally important species with at least 20% of European breeding or non-breeding population in UK .

[6] The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Red List criteria include species which are: globally threatened; have been subject to historical population decline in UK during 1800–1995; are in severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period, or; subject to severe (at least 50%) contraction of UK breeding range over last 25 years, or longer-term period.

*Field Survey Results*

Carrion crow *Corvus corone*, blackbird *Turdus merula* and blue tit *Cyanistes caeruleus* were recorded during the survey. The site supports ground nesting birds including skylark *Alauda arvensis* and lapwing *Vanellus vanellus*.

The site contains habitat suitable for supporting breeding birds in the form of broadleaved semi-natural woodland, dense scrub, scattered trees and tussocky grassland. A variety of suitable habitats for supporting a range of bird species are also present in the vicinity of the site in the form of extensive woodland blocks, rough grassland, agricultural fields and hedgerow networks.

The site also contains suitability for supporting wintering birds in the form of the semi-improved grassland, which forms the majority of the site.

### *3.4.7 Reptiles*

*Desktop Study Results*

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of reptiles within the local area, however, this does not confirm the absence of the species in the local area.

*Field Survey Results*

The majority of the semi-improved grassland within the site was unmanaged at the time of survey and has developed a long sward height, providing suitability for supporting foraging, sheltering and basking reptiles. The base of the hedgerows and scrub also provides opportunities for reptiles. Additionally, hibernating and sheltering opportunities are associated with the broadleaved semi-natural woodland and onsite hedgerows.

### *3.4.8 Great Crested Newt*

*Desktop Study Results*

A single granted EPSM licence in respect of great crested newt *Triturus cristatus* were identified within a two kilometre radius of the site. The licence was granted in 2009 for the destruction of a breeding site and resting place of the species and is located approximately 310 metres north of the site.

Consultation with City of London Corporation as Conservators of Epping Forest produced no records of great crested newt within the local area, however, this does not confirm the absence of the species.

A review of online 1:25,000 OS mapping and aerial imagery concluded that there are 27 waterbodies present within a 500 metre radius of the site, with three waterbodies within 100 metres of the site, seven waterbodies within 100-250 metres of the site.

*Field Survey Results*

The site contains two waterbodies. A single pond is present within the broadleaved woodland towards the centre of the site, measuring approximately 150 square metres. Some vegetation is present within the waterbody in the form of greater reedmace and soft rush and the waterbody is assessed as having limited suitability to support breeding great crested newt. The pond within the broadleaved woodland in the north-west of the site lacked any aquatic vegetation at the time the survey was undertaken, however, given the extent of suitable habitat surrounding the pond it is assessed as having suitability to support breeding great crested newt.

The site provides optimal terrestrial habitat for great crested newt with the broadleaved semi-natural woodland, dense scrub, scattered trees, tussocky semi-improved grassland offering suitable foraging, refuge and hibernating opportunities for the species during their terrestrial stage.

Given the large number waterbodies within a 500 metre radius of the site and the known population present within the vicinity of the site, there is a high likelihood of great crested newt using the terrestrial habitat and ponds on site. A large number of waterbodies are within 250 metres of the site which increases the likelihood of great crested newt using terrestrial habitat on site. Great crested newt are found at their greatest densities within terrestrial habitats of up to 250 metres[7], and, therefore there is a risk of dispersal of great crested newt to the site from the waterbodies in the vicinity of the site.

### *3.4.9 Invertebrates*

*Desktop Study Results*

No notable terrestrial invertebrates were returned by City of London Corporation as Conservators of Epping Forest within the local area. Records of common species including a record of small tortoiseshell *Aglais urticae*, slender groundhopper *Tetrix subulate*, top-horned hunchback *Acrocera orbiculus*, striped slender robberfly *Leptogaster cylindrica* and cardinal click beetle *Ampedus cardinalis*.

*Field Survey Results*

The site itself provides suitability to support terrestrial invertebrates associated with the broadleaved semi-natural woodland, dense scrub, scattered trees, semi-improved grassland, standing water and hedgerows.

[7] English Nature (2001) – Great Crested Newt Mitigation Guidelines

The areas of broadleaved woodland contain log piles which may support notable species of saproxylic invertebrate such as the Species of Principal Importance[8] stag beetle *Lucanus cervus*.

### *3.4.10 Other Relevant Species*

*Desktop Study Results*

Two records of European hare *Lepus europaeus* were returned by City of London Corporation as Conservators of Epping Forest within the local area, located approximately 155 metres north-east of the site.

*Field Survey Results*

No evidence of any other relevant species was recorded within the site during the survey undertaken. The site supports suitable habitat for European hare, European hedgehog *Erinaceus europaeus* and common toad *Bufo bufo* in the form of the broadleaved woodland, tussocky grassland and hedgerows.

## 3.5 Summary of Key Ecological Features

The following features are those with greatest ecological value that lie within the site's Zone of Influence:

- Habitat of principal importance wood-pasture and parkland;
- Suitability to support tree roosting bats;
- Suitability to support foraging and commuting bats;
- Suitability to support badger;
- Suitability to support hazel dormouse;
- Suitability to support breeding and wintering birds;
- Suitability to support widespread species of reptiles;
- Suitability to support breeding and terrestrial great crested newt; and
- Suitability to support European hare and European hedgehog and common toad.

[8] As listed on NERC Act 2006

# 4.0 POTENTIAL ECOLOGICAL CONSTRAINTS AND RECOMMENDATIONS

## 4.1 Introduction

This section identifies potential constraints of holding a large-scale concert event on the site and is based on the key ecological features as identified in Section 3.0 and summarised in Paragraph 3.5. Recommendations are included for mitigation and compensation based on the identified ecological constraints, and opportunities for enhancement are discussed.

## 4.2 Designated Sites

### *4.2.1 Potential Constraints*

The site is designated as Warlies Park SINC for supporting notable habitats including wood-pasture and parkland, hedgerows, lowland mixed deciduous woodland, ancient/species-rich hedgerows and green lanes and species such as invertebrates, lichens and fungi.

Warlies Park is also partly designated as Cobbins Brook SINC for supporting notable habitats including rivers, lowland mixed deciduous woodland, lowland meadows, species-rich grassland, ancient/species-rich hedgerows, green lanes and corridors. The full citation and boundaries of both the SINCs were not available at the time of preparing this report.

The movement of people to and from the event, trampling effects and littering has the potential to reduce the diversity and ecological value of the notable habitats for which the SINCs are designated for. Any vehicle movements could also result in damage to the SINCs if inappropriately managed.

### *4.2.2 Potential Mitigation and Compensation Measures*

An appropriate environmental management plan will need to be implemented at the event to ensure that the site, and surrounding SINCs, are fully cleared of any equipment, litter and waste following the completion of the event. This would also need to include appropriate, managed, access routes to the site and the use of trackways to minimise damage to grassland where possible on any heavy traffic areas within the concert area. This should be designed in consultation with a suitably qualified ecologist.

Warlies Park and Cobbins Brook SINCs should be protected by erecting high visibility fencing, such as Heras fencing (or similar) around the event site boundary.

Access to and from the event should minimise visitors accessing Warlies Park and Cobbins Brook SINCs. It is recommended that further consideration and assessment is given to designated sites once the layout of the future event has been established and the boundaries of the SINCs are known.

#### *4.2.3 Enhancement Opportunities*

No enhancements in respect of designated sites are recommended.

### 4.3 Habitats

#### *4.3.1 Potential Constraints*

The site has been identified as supporting the habitat of principal importance wood-pasture and parkland. The other habitats of importance include the broadleaved woodland, mature scattered trees, hedgerows and tussocky grassland. Any damage to woodland, mature scattered trees, hedgerows and tussocky grassland during the operational phase in any forthcoming event would reduce the diversity and ecological value of the habitats within the site.

The movement of people to and from the event, trampling effects and littering has the potential to result in the degradation of the existing habitats at the site. The access routes to the site used by both the site set up team and attendees has the potential to degrade habitats in the surrounds.

#### *4.3.2 Potential Mitigation and Compensation Measures*

It is recommended that the broadleaved woodland, mature scattered trees, scrub, standing water and hedgerows should be retained in any forthcoming event.

An appropriate environmental management plan will need to be implemented at the event to ensure that the site, and surrounding habitats, are fully cleared of any equipment, litter and waste following the completion of the event. This would also need to include appropriate, managed, access routes to the site and the use of trackways to minimise damage to grassland where possible on any heavy traffic areas within the concert area. This should be designed in consultation with a suitably qualified ecologist.

The broadleaved woodland and hedgerows should be buffered by a minimum of 20 metres between the event area and habitats with no access to these buffers during the site set up or operational phase. The exclusion zone will be marked by high visibility fencing, such as Heras fencing (or similar).

Mature scattered trees should be protected with Root Protection Zones established in accordance with BS:5837:2012 (British Standards, 2012).

#### *4.3.3 Enhancement Opportunities*

No enhancements in respect of habitats are recommended.

## 4.4 Bats

### *4.4.1 Potential Constraints*

Any future event at the site has the potential to result in disturbance to roosting, foraging and commuting bats through increased noise levels.

The introduction of external lighting has the potential to result in increased light spill on roosting, foraging and commuting features, resulting in the disturbance of bats.

In England, bats and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, all bat species are protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Refer to **Appendix 1** for details.

### *4.4.2 Potential Mitigation and Compensation Measures*

Recommendations have been made for maintaining a minimum buffer of 20 metres between the event area and broadleaved woodland and hedgerows and the establishment of Root Protection Zones as discussed in Paragraph 4.3.2 in order to avoid disturbing bats, should they be present. It is recommended that further consideration and assessment is given to bats once the layout and noise levels of any future event have been established.

The broadleaved woodland, mature scattered trees, scrub and hedgerows should not be lit. Lighting should be restricted to the event itself and not during site set-up or closure. A further assessment of the potential lighting impacts should be undertaken once lighting plans are known of any future event.

### *4.4.3 Enhancement Opportunities*

No enhancements in respect of bats are recommended.

## 4.5 Badger

### *4.5.1 Potential Constraints*

Any future event at the site will result in the loss of badger foraging habitat short-term.

Badger are protected from killing and injury, and their setts protected from damage and interference, under the Protection of Badgers Act 1992. Refer to **Appendix 1** for details.

### *4.5.2 Potential Mitigation and Compensation Measures*

Recommendations have already been made for establishing an undisturbed 20 metre buffer between any future event and the broadleaved woodland and hedgerows. This will ensure that no direct impacts arise on any potential badger setts within these habitats.

Given that the loss of badger foraging habitat is only short-term, no mitigation or compensation measures are recommended.

#### *4.5.3 Enhancement Opportunities*

No enhancements in respect of badger are recommended.

### 4.6 Hazel Dormouse

#### *4.6.1 Potential Constraints*

Any future event at the site has the potential to result in disturbance to hazel dormouse through increased noise levels.

The introduction of external lighting has the potential to result in increased light spill on suitable habitat for the species, resulting in the disturbance of hazel dormouse, should they be present.

In England, hazel dormouse and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, this species is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Refer to **Appendix 1** for details.

#### *4.6.2 Potential Mitigation and Compensation Measures*

Recommendations have been made for maintaining a minimum buffer of 20 metres between the event area and broadleaved woodland and hedgerows and the establishment of Root Protection Zones as discussed in Paragraph 4.3.2 in order to avoid disturbing hazel dormouse, should they be present. It is recommended that further consideration and assessment is given to the species once the layout and noise levels of any future event have been established.

The broadleaved woodland, mature scattered trees, scrub and hedgerows should not be lit. Lighting should be restricted to the event itself and not during site set-up or closure. A further assessment of the potential lighting impacts should be undertaken once lighting plans are known of any future event.

#### *4.6.3 Enhancement Opportunities*

No enhancements in respect of hazel dormouse are recommended.

### 4.7 Birds

#### *4.7.1 Potential Constraints*

Any future event at the site during the breeding bird season of March to August, inclusive, has the potential to result in disturbance to nesting birds through increased noise levels and disturbance from attendees traveling to and from the event.

Any future event at the site during the wintering bird season of September to February, inclusive, has the potential to result in disturbance to wintering birds through increased noise levels and disturbance from attendees traveling to and from the event. These timings also have the potential to result in the loss of wintering bird habitat short-term. At the time of preparing this report these timings are considered unlikely.

All birds, their nests, eggs and young are legally protected, with certain exceptions, under the Wildlife and Countryside Act 1981. Refer to **Appendix 1** for details.

#### *4.7.2 Potential Mitigation and Compensation Measures*

It is recommended that the broadleaved woodland, mature scattered trees, scrub and hedgerows will be retained in any forthcoming event to ensure no loss of suitable nesting bird habitat.

During the operational phase, the event has the potential to result in harm to nesting birds through accidental damage.

It is recommended that further consideration is given to birds once the layout and noise levels of any future event have been established. Areas of habitat could be managed in advance of the event in order to reduce the suitability for ground nesting birds.

#### *4.7.3 Enhancement Opportunities*

No enhancements in respect of birds are recommended.

### 4.8 Reptiles

#### *4.8.1 Potential Constraints*

Any future event has the potential to result in direct effects on widespread species of reptile, if present, if the event affected suitable habitat such as the tussocky semi-improved grassland.

Any future event at the site during the active reptile season of April to early October will result in the loss of habitat suitable for widespread species of reptile in the short-term.

Widespread reptile species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, grass snake *Natrix natrix* and *adder Vipera berus*) are protected under the Wildlife and Countryside Act 1981 against harm, see **Appendix 1** for details.

#### *4.8.2 Further Survey*

It is recommended that further reptile surveys are undertaken in order to determine the presence/absence of reptiles within suitable habitat within the site. The results of this survey will allow an assessment of impacts on this species group to be made and an appropriate mitigation strategy to be devised.

The reptile survey should involve the distribution of reptile refugia in suitable areas of reptile habitat within the site. The reptile refugia should then be inspected on seven occasions between April and early October (with April, May and September being the optimal time) in order to determine the status of reptiles at the site. The survey should comply with current best practice guidance (Froglife, 1999; Froglife, 2016)

#### *4.8.3 Potential Mitigation and Compensation Measures*

Should further survey show the presence of this species group (Paragraph 4.8.2) then sensitive clearance methods will be necessary prior to the commencement of any future event in addition to habitat creation and retention.

#### *4.8.4 Enhancement Opportunities*

No enhancements in respect of reptiles is recommended.

### 4.9 Great Crested Newt

#### *4.9.1 Potential Constraints*

A population of great crested newt is present within the surrounding landscape. Any future event has the potential to result in direct effects on great crested newt if the event affected suitable habitat such as the tussocky semi-improved grassland.

Any future event at the site during the active great crested newt season of April to early October will result in the loss of habitat suitable for the species in the short-term.

In England, great crested newt and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, this species is protected under the Conservation of Habitats and Species Regulations 2017 (as amended). Refer to **Appendix 1** for details.

#### *4.9.2 Further Survey*

It is recommended that a great crested newt eDNA sampling exercise is undertaken on all waterbodies located within the site itself and within 100 metres of the site. The eDNA sampling exercise is recommended to establish the presence/absence of great crested newt from within these waterbodies. This entails a single visit to the site between mid-April and end of June to collect a water sample which is subsequently tested for the presence of great crested newt DNA. Should great crested newt presence be confirmed within any of the aforementioned waterbodies, population size class assessment surveys may be required.

#### *4.9.3 Potential Mitigation and Compensation Measures*

Due to the close proximity of a population of great crested newt associated, a Natural England protected species licence may be required prior to the event. It is recommended that Natural England are engaged though their Discretionary Advice

Service (DAS) in order to seek their consultation response once the eDNA sampling exercise of the waterbodies within the site and within the immediate vicinity of the site has been undertaken.

#### *4.9.4 Enhancement Opportunities*

No enhancements in respect of great crested newt is recommended.

### 4.10 Invertebrates

#### *4.10.1 Potential Constraints*

At the time of preparing this report, it has been assumed that the broadleaved woodland will be retained in any forthcoming event, and, therefore there will be no loss of habitat suitable for notable species of saproxylic invertebrate such as stag beetle.

#### *4.10.2 Potential Mitigation and Compensation Measures*

Given the absence of potential constraints, no mitigation and compensation measures are recommended.

#### *4.10.3 Enhancement Opportunities*

No enhancements in respect of invertebrates is recommended.

### 4.11 Other Relevant Species

#### *4.11.1 Potential Constraints*

During the operational phase and site set up, any future event has the potential to result in direct effects on European hare, European hedgehog and common toad, if present, if the event is allowed to encroach onto tussocky grassland.

#### *4.11.2 Potential Mitigation and Compensation Measures*

Recommendations have been made for maintaining a minimum buffer of 20 metres between the event area and broadleaved woodland and hedgerows as discussed in Paragraph 4.3.2 in order to avoid harm to European hare, European hedgehog and common toad, should they be present.

Sensitive clearance methods of the tussocky grassland may be necessary prior to the commencement of any future event.

#### *4.11.3 Enhancement Opportunities*

No enhancements in respect of European hare, European hedgehog and common toad are recommended.

# 5.0 CONCLUSION

## 5.1 Conclusion

The site is designated as Warlies Park SINC and may also be designated as Cobbins Brook SINC. The full citation or boundary of the SINCs were not available at the time of preparing this report. The site has been identified wood-pasture and parkland, a habitat of principal importance. The site has been assessed as having suitability to support protected species including roosting bats, foraging and commuting bats, badger, hazel dormouse, breeding birds, wintering birds, great crested newt, widespread species of reptiles, European hare, European hedgehog and common toad.

The key issues are the timing of the event, access routes, compaction and trampling, noise, lighting and layout of the event. Recommendations made including a sensitive lighting scheme, a minimum 20 metre buffer from the broadleaved woodland and hedgerows, establishing Root Protection Zones for mature scattered trees, perimeter fencing, an environmental management plan and controlled access routes.

Further survey work in relation to reptiles and great crested newt will be required to fully assess the potential ecological impacts of any future proposals. Further consideration will need to be given to bats and hazel dormouse once the noise levels and layout of any future event are known in order to ensure these species groups will not be disturbed. At this stage, it is considered that subsequent to the findings of such work, there is scope to incorporate suitable mitigation measures in order to allow the event to accord with wildlife legislation.

## 5.2 Updating Site Survey

If the planning application boundary changes or the proposals for the site alter, a re-assessment of the scheme in relation to ecology may be required. Given the mobility of animals and the potential for colonisation of the site over time, updating survey work may be required, particularly if development does not commence within 18 months of the date of the most recent relevant survey.

## 6.0 REFERENCES

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**Map 1** Site Location Plan

# WARLIES PARK, WALTHAM ABBEY, ESSEX

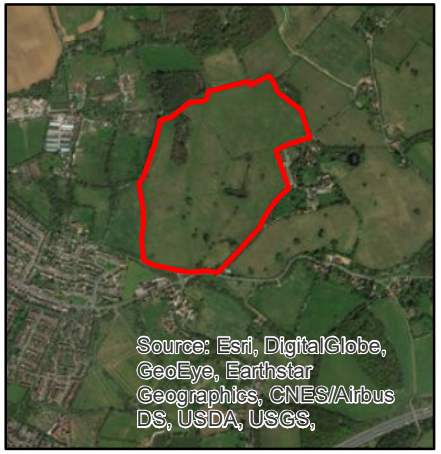
PRELIMINARY ECOLOGICAL APPRAISAL

Map 1 - Site Location Plan

| | |
|---|---|
| Client: | City of London Corporation as Conservators of Epping Forest |
| Date: | August 2019 |
| Status: | Final |

## KEY

Site Boundary




Scale at A4: 1:10,000

0 100 200 400 Metres

N

ECOSA
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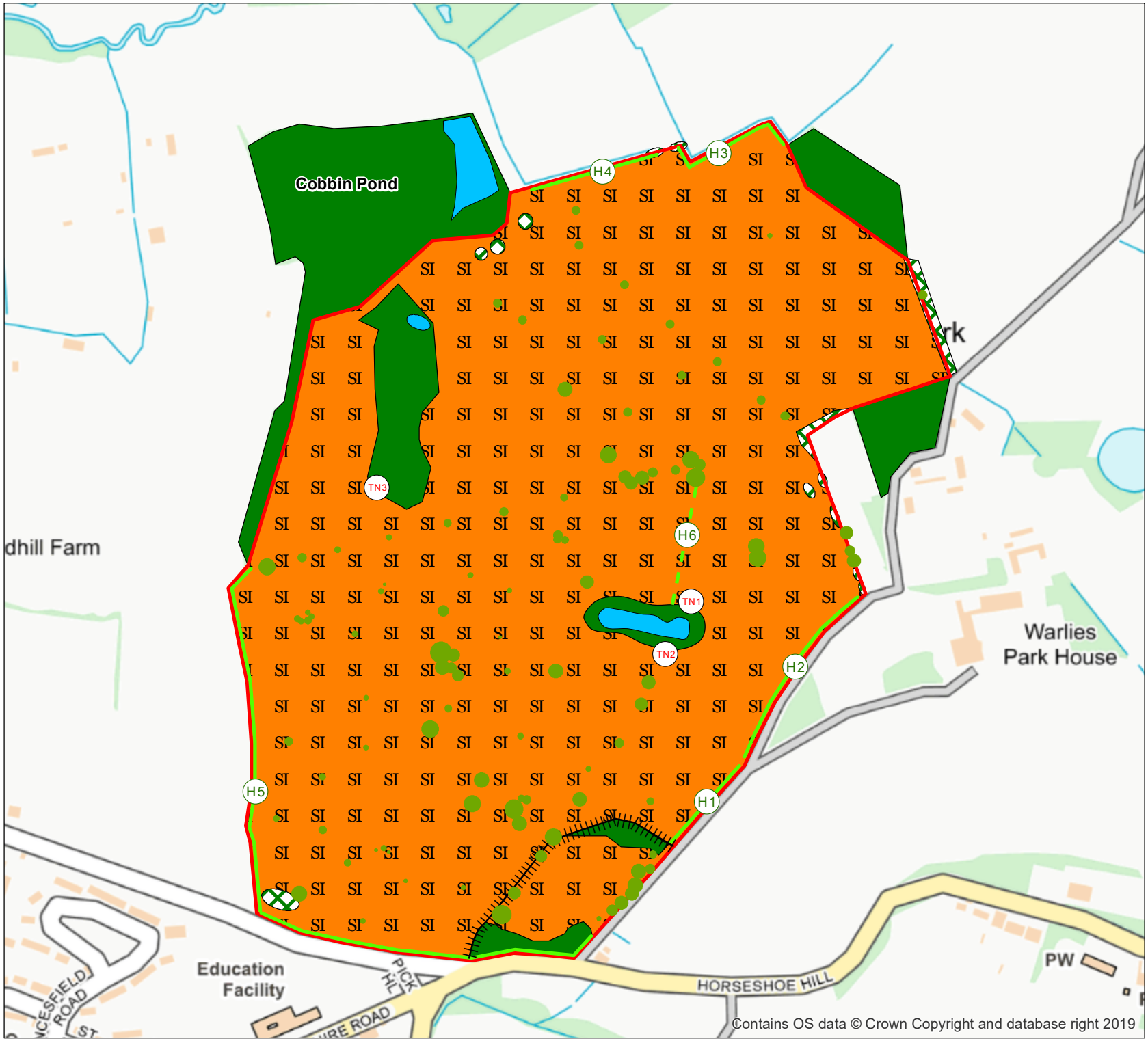
**Map 2** Phase 1 Habitat Map




**WARLIES PARK, WALTHAM ABBEY, ESSEX**

PRELIMINARY ECOLOGICAL APPRAISAL

Map 2 - Phase 1 Habitat Map

| | |
|---|---|
| Client: | City of London Corporation as Conservators of Epping Forest |
| Date: | August 2019 |
| Status: | Final |

**KEY**

- Site Boundary
- Parkland Scattered Trees
- Broadleaved Semi-natural Woodland
- Dense Scrub
- Semi-improved Grassland
- Standing Water
- Intact Species-poor Hedgerow
- Defunct Species-poor Hedgerow
- Fence
- TN1 Target Note
- H1 Hedgerow Number

Scale at A4: 1:5,000

0 50 100 200 Metres

N

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## **Appendix 1** Relevant Legislation

### Bats

All UK bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely:
- To impair its ability to survive, breed, or rear or nurture their young;
- To impair its ability to hibernate or migrate;
- To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat *Rhinolophus ferrumequinum*;
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Bechstein's bat *Myotis bechsteinii*;
- Barbastelle *Barbastella barbastellus*; and
- Greater mouse-eared bat *Myotis myotis*.

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside SACs, the level of legal protection that these species receive is the same as for other bat species.

**Hazel Dormouse and Great Crested Newt**

These species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely, to impair its ability to survive, breed, or rear or nurture their young, to impair its ability to hibernate or migrate;
- To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any one of these species uses for shelter or protection.

**Badger**

The Protection of Badgers Act 1992 consolidates previous legislation (including the Badgers Acts 1973 and 1991 Badgers (Further Protection) Act 1991). It makes it an offence to:

- Kill, injure or take a badger;
- Attempt to kill, injure or take a badger; or
- To damage or interfere with a sett.

The 1992 Act defines a badger sett as ‘any structure or place which displays signs indicating current use by a badger’.

**Breeding Birds**

With certain exceptions, all wild birds, their nests and eggs are protected by Section 1 of the Wildlife and Countryside Act 1981 (as amended). Therefore, it is an offence, to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- Intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls. Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- Intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- Intentionally or recklessly disturb the dependent young of any such bird.

**Reptiles**

The four widespread species of reptile that are native to Britain, namely common or viviparous lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix*, are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence to:

- Intentionally kill or injure any of these species.

The remaining native species of British reptile (sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) receive a higher level of protection via inclusion under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations (in England and Wales only) and the Wildlife and Countryside Act 1981 (as amended). The distribution of these species are restricted to only a few sites in England.

**Species and Habitats of Principal Importance in England**

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The England Biodiversity List is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions. There are currently 943 species of principal importance and 41 habitats of principal importance included on the England Biodiversity List.

## **Appendix 2** Appraisal Criteria for Bats

The criteria used to assess the suitability of roosting and foraging/commuting habitat for bats is based on industry guidelines and outlined in **Table 1**[9].

**Table 1:** Criteria used to Assess Suitability of Roosting and Foraging/Commuting Habitat for Bats

| Suitability | Description of roosting habitats | Commuting and foraging habitats |
|---|---|---|
| **High** | A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. | Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.<br>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.<br>Site is close to and connected to known roosts. |
| **Moderate** | A structure of tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status. | Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.<br>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water. |
| **Low** | A structure with one or more potential roost sites that could be used by individual bats opportunistically/structure that does not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation).<br>A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential. | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerows or un-vegetated stream, but isolated (i.e. not very well connected to the surrounding landscape by other habitat).<br>Suitable, but isolated, habitat that could be used by small numbers of foraging bats such as a lone tree or a patch or scrub. |
| **Negligible** | Negligible habitat features on site likely to be used by roosting bats. | Negligible habitat features on site likely to be used by commuting or foraging bats. |

[9] Table adapted from (Collins, 2016)